



中国认可
国际互认
检测
TESTING
CNAS L2264

RF TEST REPORT

Applicant ZTE Corporation
FCC ID SRQ-BLADEV8
Product LTE/WCDMA/GSM (GPRS)
Mutil-Mode Digital Mobile Phone
Model ZTE BLADE V8/BLADE V8/ZTE BLADE V0800
Report No. RXA1612-0288RF03
Issue Date January 22, 2017

TA Technology (Shanghai) Co., Ltd. tested the above equipment in accordance with the requirements in **FCC CFR47 Part 2 (2016)/ FCC CFR47 Part 27 (2016)**. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

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Summary of Measurement Results

Number	Test Case	Clause in FCC rules	Verdict
1	RF power output	2.1046	PASS
2	Effective Isotropic Radiated power Effective Isotropic Radiated power	27.50(d)(4)/27.50(h)(2) 27.50(b)(10) /27.50(c)(10)	PASS
3	Occupied Bandwidth	2.1049	PASS
4	Band Edge Compliance	27.53(h)/ 27.53(g)/ 27.53(m)	PASS
5	Peak-to-Average Power Ratio	27.50(d)/KDB971168 D01(5.7)	PASS
6	Frequency Stability	2.1055 / 27.54	PASS
7	Spurious Emissions at Antenna Terminals	2.1051 / 27.53(h) / 27.53(g) / 27.53(m)	PASS
8	Radiates Spurious Emission	2.1053 /27.53(h) / 27.53(g) / 27.53(m) / 27.53(f)	PASS
Date of Testing: December 28, 2016 ~ January 13, 2017			
Note: PASS: The EUT complies with the essential requirements in the standard. FAIL: The EUT does not comply with the essential requirements in the standard.			

1 Test Laboratory

1.1 Notes of the Test Report

This report shall not be reproduced in full or partial, without the written approval of **TA technology (shanghai) co., Ltd.** The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein .Measurement Uncertainties were not taken into account and are published for informational purposes only. This report is written to support regulatory compliance of the applicable standards stated above. This report must not be used by the client to claim product certification, approval, or endorsement by CNAS or any government agencies.

1.2 Test facility

CNAS (accreditation number:L2264)

TA Technology (Shanghai) Co., Ltd. has obtained the accreditation of China National Accreditation Service for Conformity Assessment (CNAS).

FCC (recognition number is 428261)

TA Technology (Shanghai) Co., Ltd. has been listed on the US Federal Communications Commission list of test facilities recognized to perform electromagnetic emissions measurements.

IC (recognition number is 8510A)

TA Technology (Shanghai) Co., Ltd. has been listed by industry Canada to perform electromagnetic emission measurement.

A2LA (Certificate Number: 3857.01)

TA Technology (Shanghai) Co., Ltd. has been listed by American Association for Laboratory Accreditation to perform electromagnetic emission measurement.

1.3 Testing Location

Company: TA Technology (Shanghai) Co., Ltd.
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2 General Description of Equipment under Test

Client Information

Applicant	ZTE Corporation
Applicant address	ZTE Plaza, Keji Road South, Hi-Tech Industrial Park, Nanshan District, Shenzhen, Guangdong,518057, P.R. China
Manufacturer	ZTE Corporation
Manufacturer address	ZTE Plaza, Keji Road South, Hi-Tech Industrial Park, Nanshan District, Shenzhen, Guangdong,518057, P.R. China

General information

Model:	ZTE BLADE V8/BLADE V8/ZTE BLADE V0800		
Product IMEI:	862121030052824		
Hardware Version:	uy4A		
Software Version:	TEL_MX_BLADE_V8V1.0.0		
Power Supply:	Battery/AC adapter		
Antenna Type:	Internal Antenna		
Test Mode(s):	LTE Band 4/7/12/13		
Maximum E.I.R.P./ E.R.P.	LTE Band 4: 22.40 dBm LTE Band 7: 20.68 dBm LTE Band 12: 15.75 dBm LTE Band 13: 15.72dBm		
Rated Power Supply Voltage:	3.87V		
Extreme Voltage:	Minimum: 3.65V Maximum: 4.40V		
Extreme Temperature:	Lowest: -10°C Highest: +55°C		
Operating Frequency Range(s)	Mode	Tx (MHz)	Rx (MHz)
	LTE Band 4	1710 ~ 1755	2110 ~ 2155
	LTE Band 7	2500 ~ 2570	2620 ~ 2690
	LTE Band 12	699 ~ 716	729 ~ 746
	LTE Band 13	777 ~ 787	746 ~ 756
EUT Accessory			
Battery	Manufacturer: HARBIN COSLIGHT POWER CO LTD Model: Li3927T44P8h786035 Ratings:3.87Vdc,2730mAh,10.6Wh		
Note: 1. The information of the EUT is declared by the manufacturer. Please refer to the specifications or user manual for details.			



3 Applied Standards

According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

Test standards

FCC CFR47 Part 2 (2016)

FCC CFR47 Part 27C (2016)

ANSI/TIA-603-D (2010)

KDB 971168 D01 Power Meas License Digital Systems v02r02

4 Test Configuration

Radiated measurements are performed by rotating the EUT in three different orthogonal test planes. EUT stand-up position (Z axis), lie-down position (X, Y axis). Receiver antenna polarization (horizontal and vertical), the worst emission was found in position (Z axis, vertical polarization) and the worst case was recorded.

All mode and data rates and positions and RB size and modulations were investigated.

Subsequently, only the worst case emissions are reported.

The following testing in LTE is set based on the maximum RF Output Power.

The following testing in different Bandwidth is set to detail in the following table:

Test modes are chosen to be reported as the worst case configuration below for LTE Band 4/7/12/13:

Test items	Modes	Bandwidth (MHz)						Modulation		RB			Test Channel		
		1.4	3	5	10	15	20	QPSK	16QAM	1	50%	100%	L	M	H
RF power output	LTE 4	O	O	O	O	O	O	O	O	O	O	O	O	O	O
	LTE 7	-	-	O	O	O	O	O	O	O	O	O	O	O	O
	LTE 12	O	O	O	O	-	-	O	O	O	O	O	O	O	O
	LTE 13	-	-	O	O	-	-	O	O	O	O	O	O	O	O
Effective Isotropic Radiated power	LTE 4	O	O	O	O	O	O	O	O	-	-	O	O	O	O
	LTE 7	-	-	O	O	O	O	O	O	-	-	O	O	O	O
	LTE 12	O	O	O	O	-	-	O	O	-	-	O	O	O	O
	LTE 13	-	-	O	O	-	-	O	O	-	-	O	O	O	O
Occupied Bandwidth	LTE 4	O	O	O	O	O	O	O	O	-	-	O	O	O	O
	LTE 7	-	-	O	O	O	O	O	O	-	-	O	O	O	O
	LTE 12	O	O	O	O	-	-	O	O	-	-	O	O	O	O
	LTE 13	-	-	O	O	-	-	O	O	-	-	O	O	O	O
Band Edge Compliance	LTE 4	O	O	O	O	O	O	O	O	O	-	O	O	-	O
	LTE 7	-	-	O	O	O	O	O	O	O	-	O	O	-	O
	LTE 12	O	O	O	O	-	-	O	O	O	-	O	O	-	O
	LTE 13	-	-	O	O	-	-	O	O	O	-	O	O	-	O
Peak-to-Average Power Ratio	LTE 4	O	O	O	O	O	O	O	O	-	-	O	O	O	O
	LTE 7	-	-	O	O	O	O	O	O	-	-	O	O	O	O
	LTE 12	O	O	O	O	-	-	O	O	-	-	O	O	O	O
	LTE 13	-	-	O	O	-	-	O	O	-	-	O	O	O	O
Frequency Stability	LTE 4	O	O	O	O	O	O	O	O	-	-	O	-	O	-
	LTE 7	-	-	O	O	O	O	O	O	-	-	O	-	O	-
	LTE 12	O	O	O	O	-	-	O	O	-	-	O	-	O	-
	LTE 13	-	-	O	O	-	-	O	O	-	-	O	-	O	-
Spurious Emissions at Antenna Terminals	LTE 4	O	O	O	O	O	O	O	-	O	-	-	O	O	O
	LTE 7	-	-	O	O	O	O	O	-	O	-	-	O	O	O
	LTE 12	O	O	O	O	-	-	O	-	O	-	-	O	O	O
	LTE 13	-	-	O	O	-	-	O	-	O	-	-	O	O	O
Radiates Spurious Emission	LTE 4	O	O	O	O	O	O	O	-	O	-	-	O	O	O
	LTE 7	-	-	O	O	O	O	O	-	O	-	-	O	O	O
	LTE 12	O	O	O	O	-	-	O	-	O	-	-	O	O	O
	LTE 13	-	-	O	O	-	-	O	-	O	-	-	O	O	O
Note	1. The mark "O" means that this configuration is chosen for testing. 2. The mark "-" means that this configuration is not testing.														

5 Test Information

5.1 RF Power Output

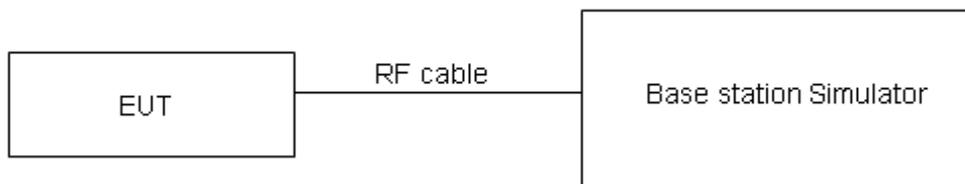
Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Methods of Measurement

During the process of the testing, The EUT is controlled by the Base Station Simulator to ensure max power transmission and proper modulation.

Test Setup



The loss between RF output port of the EUT and the input port of the tester has been taken into consideration.

Limits

No specific RF power output requirements in part 2.1046.

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 2$, $U=0.4$ dB.

Test Results

LTE FDD Band 4				Conducted Power(dBm)		
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)		
				19957/1710.7	20175/1732.5	20393/1754.3
1.4MHz	QPSK	1	0	23.86	23.77	23.81
		1	2	23.50	23.63	23.48
		1	5	23.59	23.54	23.67
		3	0	23.29	23.34	23.55
		3	2	23.18	23.30	23.27
		3	3	23.23	23.24	23.25
		6	0	22.34	22.35	22.40
	16QAM	1	0	22.13	22.19	22.24
		1	2	22.32	22.11	22.18
		1	5	22.01	22.12	22.05
		3	0	22.25	22.47	22.21
		3	2	22.35	22.33	22.29
		3	3	22.25	22.26	22.22
		6	0	21.29	21.37	21.40
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)		
				19965/1711.5	20175/1732.5	20385/1753.5
3MHz	QPSK	1	0	23.88	23.81	23.84
		1	7	23.53	23.68	23.52
		1	14	23.62	23.59	23.71
		8	0	22.39	22.46	22.68
		8	4	22.30	22.40	22.39
		8	7	22.33	22.35	22.35
		15	0	22.37	22.39	22.43
	16QAM	1	0	22.16	22.21	22.27
		1	7	22.35	22.16	22.22
		1	14	22.03	22.16	22.08
		8	0	21.36	21.60	21.33
		8	4	21.46	21.46	21.41
		8	7	21.35	21.38	21.35
		15	0	21.32	21.41	21.43
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)		
				19975/1712.5	20175/1732.5	20375/1752.5
5MHz	QPSK	1	0	23.85	23.79	23.80
		1	13	23.51	23.64	23.49
		1	24	23.59	23.54	23.67
		12	0	22.36	22.41	22.64
		12	6	22.28	22.36	22.34
		12	13	22.31	22.33	22.31
		25	0	22.35	22.38	22.41



Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)		
				20000/1715	20175/1732.5	20350/1750
	16QAM	1	0	22.13	22.17	22.24
		1	13	22.32	22.14	22.19
		1	24	22.00	22.14	22.04
		12	0	21.34	21.56	21.30
		12	6	21.43	21.41	21.37
		12	13	21.32	21.33	21.31
		25	0	21.30	21.37	21.38
10MHz	QPSK	1	0	23.87	23.80	23.83
		1	25	23.54	23.69	23.53
		1	49	23.61	23.58	23.70
		25	0	22.39	22.46	22.68
		25	13	22.31	22.41	22.38
		25	25	22.33	22.37	22.36
		50	0	22.43	22.40	22.45
	16QAM	1	0	22.15	22.20	22.26
		1	25	22.35	22.18	22.22
		1	49	22.03	22.16	22.07
		25	0	21.37	21.61	21.34
		25	13	21.45	21.45	21.40
		25	25	21.35	21.38	21.35
		50	0	21.33	21.42	21.42
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)		
				20025/1717.5	20175/1732.5	20325/1747.5
15MHz	QPSK	1	0	23.86	23.76	23.81
		1	38	23.52	23.68	23.50
		1	74	23.58	23.53	23.66
		36	0	22.37	22.42	22.65
		36	18	22.28	22.36	22.34
		36	39	22.30	22.34	22.32
		75	0	22.41	22.36	22.40
	16QAM	1	0	22.10	22.18	22.24
		1	38	22.33	22.15	22.20
		1	74	22.00	22.12	22.04
		36	0	21.34	21.59	21.31
		36	18	21.42	21.40	21.36
		36	39	21.33	21.34	21.32
		75	0	21.30	21.37	21.38
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)		
				20050/1720	20175/1732.5	20300/1745
20MHz	QPSK	1	0	23.83	23.72	23.78
		1	50	23.51	23.64	23.48



		1	99	23.56	23.52	23.63
		50	0	22.34	22.37	22.61
		50	25	22.26	22.32	22.31
		50	50	22.27	22.29	22.28
		100	0	22.38	22.31	22.36
	16QAM	1	0	22.08	22.14	22.19
		1	50	22.29	22.13	22.16
		1	99	21.98	22.09	22.02
		50	0	21.31	21.55	21.28
		50	25	21.39	21.38	21.33
		50	50	21.30	21.29	21.28
		100	0	21.28	21.33	21.35

LTE FDD Band 7				Conducted Power(dBm)		
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)		
				20775/2502.5	21100/2535	21425/2567.5
5MHz	QPSK	1	0	23.56	23.64	23.54
		1	13	23.63	23.75	23.68
		1	24	23.54	23.73	23.66
		12	0	22.53	22.68	22.50
		12	6	22.67	22.65	22.56
		12	13	22.67	22.70	22.54
		25	0	22.53	22.59	22.59
	16QAM	1	0	22.37	22.38	22.35
		1	13	22.32	22.42	22.36
		1	24	22.44	22.67	22.55
		12	0	21.72	21.83	21.67
		12	6	21.82	21.77	21.70
		12	13	21.69	21.73	21.58
		25	0	21.82	21.80	21.81
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)		
				20800/2505	21100/2535	21400/2565
10MHz	QPSK	1	0	23.58	23.65	23.57
		1	25	23.66	23.80	23.72
		1	49	23.56	23.77	23.69
		25	0	22.56	22.73	22.54
		25	13	22.70	22.70	22.60
		25	25	22.69	22.74	22.59
		50	0	22.61	22.61	22.63
	16QAM	1	0	22.39	22.41	22.37
		1	25	22.35	22.46	22.39
		1	49	22.47	22.69	22.58



Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)		
				20825/2507.5	21100/2535	21375/2562.5
		25	0	21.75	21.88	21.71
		25	13	21.84	21.81	21.73
		25	25	21.72	21.78	21.62
		50	0	21.85	21.85	21.85
15MHz	QPSK	1	0	23.57	23.61	23.55
		1	38	23.64	23.79	23.69
		1	74	23.53	23.72	23.65
		36	0	22.54	22.69	22.51
		36	18	22.67	22.65	22.56
		36	39	22.66	22.71	22.55
		75	0	22.59	22.57	22.58
	16QAM	1	0	22.34	22.39	22.35
		1	38	22.33	22.43	22.37
		1	74	22.44	22.65	22.55
		36	0	21.72	21.86	21.68
		36	18	21.81	21.76	21.69
		36	39	21.70	21.74	21.59
		75	0	21.82	21.80	21.81
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)		
				20850/2510	21100/2535	21350/2560
20MHz	QPSK	1	0	23.54	23.57	23.52
		1	50	23.63	23.75	23.67
		1	99	23.51	23.71	23.62
		50	0	22.51	22.64	22.47
		50	25	22.65	22.61	22.53
		50	50	22.63	22.66	22.51
		100	0	22.56	22.52	22.54
	16QAM	1	0	22.32	22.35	22.30
		1	50	22.29	22.41	22.33
		1	99	22.42	22.62	22.53
		50	0	21.69	21.82	21.65
		50	25	21.78	21.74	21.66
		50	50	21.67	21.69	21.55
		100	0	21.80	21.76	21.78

LTE FDD Band 12				Conducted Power(dBm)		
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)		
				23017/699.7	23095/707.5	23173/715.3
1.4MHz	QPSK	1	0	22.94	23.01	22.95
		1	2	23.00	23.02	23.07
		1	5	23.23	23.01	23.02
		3	0	22.83	22.96	22.90
		3	2	22.79	22.90	22.96
		3	3	22.92	22.88	22.91
		6	0	21.87	21.93	21.92
	16QAM	1	0	21.52	21.57	21.53
		1	2	21.37	21.34	21.42
		1	5	21.42	21.21	21.20
		3	0	21.81	21.90	21.88
		3	2	21.79	21.83	21.92
		3	3	21.74	21.73	21.71
		6	0	20.82	20.83	20.83
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)		
				23025/700.5	23095/707.5	23165/714.5
3MHz	QPSK	1	0	22.95	23.04	22.97
		1	7	23.04	23.08	23.12
		1	14	23.25	23.05	23.05
		8	0	21.93	22.08	22.03
		8	4	21.92	22.01	22.07
		8	7	22.02	22.01	22.02
		15	0	21.96	21.98	21.97
	16QAM	1	0	21.54	21.58	21.55
		1	7	21.40	21.41	21.46
		1	14	21.44	21.25	21.22
		8	0	20.93	21.04	21.01
		8	4	20.89	20.95	21.03
		8	7	20.84	20.85	20.84
		15	0	20.86	20.88	20.85
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)		
				23035/701.5	23095/707.5	23155/713.5
5MHz	QPSK	1	0	22.94	23.00	22.95
		1	13	23.02	23.07	23.09
		1	24	23.22	23.00	23.01
		12	0	21.91	22.04	22.00
		12	6	21.89	21.96	22.03
		12	13	21.99	21.98	21.98
		25	0	21.94	21.94	21.92



Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)		
				23060/704	23095/707.5	23130/711
	16QAM	1	0	21.49	21.56	21.53
		1	13	21.38	21.38	21.44
		1	24	21.41	21.21	21.19
		12	0	20.90	21.02	20.98
		12	6	20.86	20.90	20.99
		12	13	20.82	20.81	20.81
		25	0	20.83	20.83	20.81
10MHz	QPSK	1	0	22.91	22.96	22.92
		1	25	23.01	23.03	23.07
		1	49	23.20	22.99	22.98
		25	0	21.88	21.99	21.96
		25	13	21.87	21.92	22.00
		25	25	21.96	21.93	21.94
		50	0	21.91	21.89	21.88
	16QAM	1	0	21.47	21.52	21.48
		1	25	21.34	21.36	21.40
		1	49	21.39	21.18	21.17
		25	0	20.87	20.98	20.95
		25	13	20.83	20.88	20.96
		25	25	20.79	20.76	20.77
		50	0	20.81	20.79	20.78



LTE FDD Band 13				Conducted Power(dBm)		
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)		
				23205/779.5	23230/782	23255/784.5
5MHz	QPSK	1	0	23.02	22.83	22.74
		1	13	23.07	22.93	22.82
		1	24	22.85	22.84	22.79
		12	0	21.95	21.97	21.73
		12	6	21.86	21.82	21.81
		12	13	21.93	21.74	22.00
		25	0	21.93	21.94	21.84
	16QAM	1	0	21.76	21.75	21.62
		1	13	21.74	21.68	21.59
		1	24	21.69	21.64	21.79
		12	0	20.82	20.87	20.65
		12	6	20.95	20.76	20.66
		12	13	20.69	20.64	20.74
		25	0	20.81	20.76	20.85
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)		
				/	23230/782	/
10MHz	QPSK	1	0	/	22.87	/
		1	25	/	23.13	/
		1	49	/	23.01	/
		25	0	/	21.91	/
		25	13	/	22.01	/
		25	25	/	21.93	/
		50	0	/	21.98	/
	16QAM	1	0	/	21.47	/
		1	25	/	21.83	/
		1	49	/	21.71	/
		25	0	/	20.91	/
		25	13	/	21.06	/
		25	25	/	20.97	/
		50	0	/	20.91	/

5.2 Effective Radiated Power/ Effective Isotropic Radiated Power

Ambient condition

Temperature	Relative humidity
21°C ~25°C	40%~60%

Methods of Measurement

The measurement procedures in TIA- 603-D are used.

1. The EUT was placed on a turntable with 1.5 meter height in a fully anechoic chamber.
2. The EUT was set at 3 meters from the receiving antenna, which was mounted on the antennatower.
3. UMTS operating modes: Set RBW= 100 KHz, VBW= 300 KHz, RMS detector over frame, and use channel power option with bandwidth=5MHz, per section 4.0 of KDB 971168 D01.
4. The table was rotated 360 degrees to determine the position of the highest radiated power.
5. The height of the receiving antenna is adjusted to look for the maximum ERP/EIRP.
6. Taking the record of maximum ERP/EIRP.
7. A dipole antenna was substituted in place of the EUT and was driven by a signal generator.
8. The conducted power at the terminal of the dipole antenna is measured.
9. Repeat step 3 to step 5 to get the maximum ERP/EIRP of the substitution antenna.
10. $ERP/EIRP = P_s + E_t - E_s + G_s = P_s + R_t - R_s + G_s$

P_s (dBm) : Input power to substitution antenna.

G_s (dBi or dBd) : Substitution antenna Gain.

$E_t = R_t + AF$

$E_s = R_s + AF$

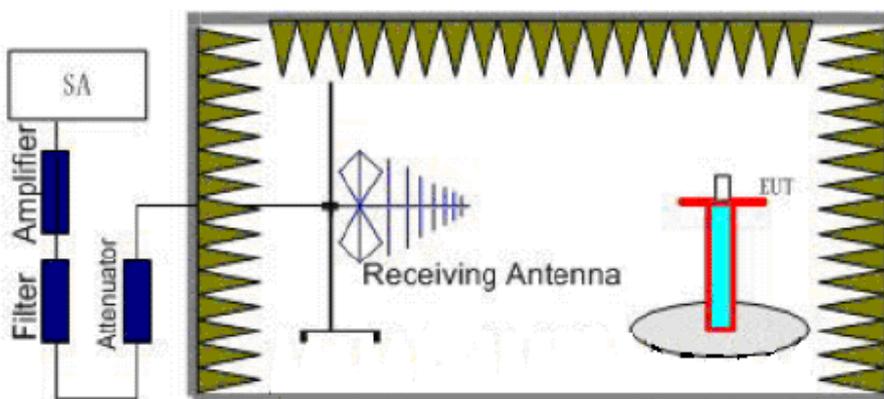
AF (dB/m) : Receive antenna factor

R_t : The highest received signal in spectrum analyzer for EUT.

R_s : The highest received signal in spectrum analyzer for substitution antenna.

$EIRP = E.R.P + 2.15$

Test Setup





Limits

Rule Part 27.50(b) (10) specifies that “Portable stations (hand-held devices) transmitting in the 746-757 MHz, 776-788 MHz, and 805-806 MHz bands are limited to 3 watts ERP”

Rule Part 27.50(c) (10) specifies that “Portable stations (hand-held devices) in the 600 MHz uplink band and the 698-746 MHz band, and fixed and mobile stations in the 600 MHz uplink band are limited to 3 watts ERP”

Rule Part 27.50(d) (4) specifies that “Fixed, mobile and portable (hand-held) stations operating in the 1710–1755 MHz band are limited to 1 watt EIRP”

Rule Part 27.50(h) (2) specifies that “Mobile and other user stations. Mobile stations are limited to 2.0 watts EIRP. All user stations are limited to 2.0 watts transmitter output power.”

Part 27.50(b)(10)Limit (ERP) -LTE 13	≤ 3 W (34.77 dBm)
Part 27.50(c)(10)Limit (ERP) -LTE 12	≤ 3 W (34.77 dBm)
Part 27.50(d)(4)Limit (EIRP) -LTE 4	≤ 1 W (30 dBm)
Part 27.50(h)(2) Limit (EIRP)-LTE 7	≤ 2 W (33 dBm)

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 2$, $U = 1.19$ dB

Test Results

LTE Band 4								
Bandwidth	Frequency (MHz)	Ant Pot (H/V)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBi)	EIRP (dBm)	Conclusion
1.4MHz (QPSK)	1710.7	H	-34.15	-54.30	0.00	1.44	21.59	Pass
	1732.5	H	-33.91	-54.32	0.00	1.57	21.97	Pass
	1754.3	H	-34.42	-54.10	0.00	1.72	21.40	Pass
	1710.7	V	-35.71	-54.35	0.00	1.44	20.08	Pass
	1732.5	V	-35.28	-54.41	0.00	1.57	20.70	Pass
	1754.3	V	-35.60	-54.52	0.00	1.72	20.64	Pass
1.4MHz (16QAM)	1710.7	H	-34.44	-54.30	0.00	1.44	21.30	Pass
	1732.5	H	-34.26	-54.32	0.00	1.57	21.62	Pass
	1754.3	H	-34.72	-54.10	0.00	1.72	21.10	Pass
	1710.7	V	-36.01	-54.35	0.00	1.44	19.78	Pass
	1732.5	V	-35.48	-54.41	0.00	1.57	20.50	Pass
	1754.3	V	-35.81	-54.52	0.00	1.72	20.43	Pass
3MHz (QPSK)	1711.5	H	-34.07	-54.33	0.00	1.44	21.70	Pass
	1732.5	H	-33.48	-54.32	0.00	1.57	22.40	Pass
	1753.5	H	-34.32	-54.11	0.00	1.72	21.51	Pass
	1711.5	V	-35.91	-54.35	0.00	1.44	19.88	Pass
	1732.5	V	-35.31	-54.41	0.00	1.57	20.67	Pass
	1753.5	V	-36.02	-54.48	0.00	1.72	20.18	Pass
3MHz (16QAM)	1711.5	H	-34.27	-54.33	0.00	1.44	21.50	Pass
	1732.5	H	-33.83	-54.32	0.00	1.57	22.05	Pass
	1753.5	H	-34.58	-54.11	0.00	1.72	21.25	Pass
	1711.5	V	-36.13	-54.35	0.00	1.44	19.66	Pass
	1732.5	V	-35.52	-54.41	0.00	1.57	20.46	Pass
	1753.5	V	-36.35	-54.48	0.00	1.72	19.85	Pass
5MHz (QPSK)	1712.5	H	-33.75	-54.34	0.00	1.44	22.03	Pass
	1732.5	H	-33.66	-54.32	0.00	1.57	22.22	Pass
	1752.5	H	-34.35	-54.13	0.00	1.72	21.49	Pass
	1712.5	V	-36.29	-54.38	0.00	1.44	19.53	Pass
	1732.5	V	-35.75	-54.41	0.00	1.57	20.23	Pass
	1752.5	V	-35.73	-54.47	0.00	1.72	20.46	Pass
5MHz (16QAM)	1712.5	H	-33.98	-54.34	0.00	1.44	21.80	Pass
	1732.5	H	-33.87	-54.32	0.00	1.57	22.01	Pass
	1752.5	H	-34.61	-54.13	0.00	1.72	21.23	Pass
	1712.5	V	-36.49	-54.38	0.00	1.44	19.33	Pass
	1732.5	V	-35.97	-54.41	0.00	1.57	20.01	Pass
	1752.5	V	-36.14	-54.47	0.00	1.72	20.05	Pass
10MHz (QPSK)	1715	H	-33.70	-54.33	0.00	1.44	22.07	Pass
	1732.5	H	-33.49	-54.32	0.00	1.57	22.39	Pass
	1750	H	-33.70	-54.12	0.00	1.66	22.08	Pass



	1715	V	-35.77	-54.32	0.00	1.44	19.99	Pass
	1732.5	V	-35.49	-54.41	0.00	1.57	20.49	Pass
	1750	V	-35.49	-54.52	0.00	1.66	20.69	Pass
10MHz (16QAM)	1715	H	-35.92	-54.33	0.00	1.44	19.85	Pass
	1732.5	H	-33.87	-54.32	0.00	1.57	22.01	Pass
	1750	H	-36.03	-54.12	0.00	1.66	19.75	Pass
	1715	V	-36.11	-54.32	0.00	1.44	19.65	Pass
	1732.5	V	-35.83	-54.41	0.00	1.57	20.15	Pass
	1750	V	-35.88	-54.52	0.00	1.66	20.30	Pass
15MHz (QPSK)	1717.5	H	-33.84	-54.35	0.00	1.49	21.99	Pass
	1732.5	H	-33.73	-54.32	0.00	1.57	22.15	Pass
	1747.5	H	-33.57	-54.17	0.00	1.66	22.26	Pass
	1717.5	V	-36.06	-54.39	0.00	1.49	19.82	Pass
	1732.5	V	-35.66	-54.41	0.00	1.57	20.32	Pass
	1747.5	V	-35.45	-54.51	0.00	1.66	20.72	Pass
15MHz (16QAM)	1717.5	H	-34.08	-54.35	0.00	1.49	21.75	Pass
	1732.5	H	-35.98	-54.32	0.00	1.57	19.90	Pass
	1747.5	H	-33.77	-54.17	0.00	1.66	22.06	Pass
	1717.5	V	-36.26	-54.39	0.00	1.49	19.62	Pass
	1732.5	V	-35.96	-54.41	0.00	1.57	20.02	Pass
	1747.5	V	-35.67	-54.51	0.00	1.66	20.50	Pass
20MHz (QPSK)	1720	H	-34.07	-54.37	0.00	1.49	21.79	Pass
	1732.5	H	-33.90	-54.32	0.00	1.57	21.98	Pass
	1745	H	-33.74	-54.23	0.00	1.63	22.12	Pass
	1720	V	-36.33	-54.44	0.00	1.49	19.60	Pass
	1732.5	V	-36.01	-54.41	0.00	1.57	19.97	Pass
	1745	V	-35.87	-54.59	0.00	1.63	20.35	Pass
20MHz (16QAM)	1720	H	-34.31	-54.37	0.00	1.49	21.55	Pass
	1732.5	H	-34.18	-54.32	0.00	1.57	21.70	Pass
	1745	H	-33.96	-54.23	0.00	1.63	21.90	Pass
	1720	V	-36.63	-54.44	0.00	1.49	19.30	Pass
	1732.5	V	-36.32	-54.41	0.00	1.57	19.66	Pass
	1745	V	-36.07	-54.59	0.00	1.63	20.15	Pass

LTE Band 7								
Band width	Frequency (MHz)	Ant Pot (H/V)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBd)	EIRP (dBm)	Conclusion
5MHz (QPSK)	2502.5	H	-41.07	-59.64	0.00	1.81	20.38	Pass
	2535	H	-41.83	-59.72	0.00	1.81	19.70	Pass
	2567.5	H	-42.89	-59.98	0.00	1.83	18.92	Pass
	2502.5	V	-42.65	-59.31	0.00	1.81	18.47	Pass
	2535	V	-41.78	-59.11	0.00	1.81	19.14	Pass
	2567.5	V	-42.41	-59.59	0.00	1.83	19.01	Pass
5MHz (16QAM)	2502.5	H	-41.40	-59.64	0.00	1.81	20.05	Pass
	2535	H	-42.03	-59.72	0.00	1.81	19.50	Pass
	2567.5	H	-43.20	-59.98	0.00	1.83	18.61	Pass
	2502.5	V	-43.07	-59.31	0.00	1.81	18.05	Pass
	2535	V	-42.02	-59.11	0.00	1.81	18.90	Pass
	2567.5	V	-42.67	-59.59	0.00	1.83	18.75	Pass
10MHz (QPSK)	2505	H	-40.75	-59.61	0.00	1.82	20.68	Pass
	2535	H	-41.76	-59.72	0.00	1.81	19.77	Pass
	2565	H	-41.76	-60.02	0.00	1.81	20.07	Pass
	2505	V	-41.91	-59.33	0.00	1.82	19.24	Pass
	2535	V	-41.72	-59.11	0.00	1.81	19.20	Pass
	2565	V	-41.59	-59.59	0.00	1.81	19.81	Pass
10MHz (16QAM)	2505	H	-41.01	-59.61	0.00	1.82	20.42	Pass
	2535	H	-41.98	-59.72	0.00	1.81	19.55	Pass
	2565	H	-42.03	-60.02	0.00	1.81	19.80	Pass
	2505	V	-42.15	-59.33	0.00	1.82	19.00	Pass
	2535	V	-41.96	-59.11	0.00	1.81	18.96	Pass
	2565	V	-41.80	-59.59	0.00	1.81	19.60	Pass
15MHz (QPSK)	2507.5	H	-42.48	-59.71	0.00	1.80	19.03	Pass
	2535	H	-41.95	-59.72	0.00	1.81	19.58	Pass
	2562.5	H	-42.51	-60.08	0.00	1.82	19.39	Pass
	2507.5	V	-41.88	-59.29	0.00	1.80	19.21	Pass
	2535	V	-42.45	-59.72	0.00	1.81	19.08	Pass
	2562.5	V	-42.04	-59.46	0.00	1.82	19.24	Pass
15MHz (16QAM)	2507.5	H	-42.71	-59.71	0.00	1.80	18.80	Pass
	2535	H	-42.21	-59.72	0.00	1.81	19.32	Pass
	2562.5	H	-42.88	-60.08	0.00	1.82	19.02	Pass
	2507.5	V	-42.09	-59.29	0.00	1.80	19.00	Pass
	2535	V	-42.77	-59.72	0.00	1.81	18.76	Pass
	2562.5	V	-42.27	-59.46	0.00	1.82	19.01	Pass
20MHz (QPSK)	2510	H	-40.93	-59.52	0.00	1.77	20.36	Pass
	2535	H	-41.18	-59.72	0.00	1.81	20.35	Pass
	2560	H	-42.13	-60.01	0.00	1.82	19.70	Pass



	2510	V	-41.79	-59.09	0.00	1.77	19.07	Pass
	2535	V	-42.03	-59.72	0.00	1.81	19.50	Pass
	2560	V	-41.84	-59.52	0.00	1.82	19.50	Pass
20MHz (16QAM)	2510	H	-41.24	-59.52	0.00	1.77	20.05	Pass
	2535	H	-41.45	-59.72	0.00	1.81	20.08	Pass
	2560	H	-42.33	-60.01	0.00	1.82	19.50	Pass
	2510	V	-42.07	-59.09	0.00	1.77	18.79	Pass
	2535	V	-42.28	-59.72	0.00	1.81	19.25	Pass
	2560	V	-42.14	-59.52	0.00	1.82	19.20	Pass

LTE Band 12								
Bandwidth	Frequency (MHz)	Ant Pot (H/V)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBi)	ERP (dBm)	Conclusion
1.4MHz (QPSK)	699.7	H	-36.29	-49.12	0.00	2.04	14.87	Pass
	707.5	H	-35.68	-49.39	0.00	2.03	15.75	Pass
	715.3	H	-36.31	-49.76	0.00	1.99	15.44	Pass
	699.7	V	-47.81	-48.91	0.00	2.04	3.15	Pass
	707.5	V	-47.10	-49.12	0.00	2.03	4.05	Pass
	715.3	V	-47.79	-49.43	0.00	1.99	3.64	Pass
1.4MHz (16QAM)	699.7	H	-36.51	-49.12	0.00	2.04	14.65	Pass
	707.5	H	-35.93	-49.39	0.00	2.03	15.50	Pass
	715.3	H	-36.71	-49.76	0.00	1.99	15.04	Pass
	699.7	V	-48.01	-48.91	0.00	2.04	2.95	Pass
	707.5	V	-47.30	-49.12	0.00	2.03	3.85	Pass
	715.3	V	-48.03	-49.43	0.00	1.99	3.40	Pass
3MHz (QPSK)	700.5	H	-36.34	-49.15	0.00	2.04	14.85	Pass
	707.5	H	-35.73	-49.39	0.00	2.03	15.70	Pass
	714.5	H	-36.15	-49.73	0.00	2.00	15.58	Pass
	700.5	V	-47.59	-48.94	0.00	2.04	3.39	Pass
	707.5	V	-47.44	-49.12	0.00	2.03	3.71	Pass
	714.5	V	-48.08	-49.37	0.00	2.00	3.29	Pass
3MHz (16QAM)	700.5	H	-36.61	-49.15	0.00	2.04	14.58	Pass
	707.5	H	-35.96	-49.39	0.00	2.03	15.47	Pass
	714.5	H	-36.38	-49.73	0.00	2.00	15.35	Pass
	700.5	V	-47.82	-48.94	0.00	2.04	3.16	Pass
	707.5	V	-47.87	-49.12	0.00	2.03	3.28	Pass
	714.5	V	-48.42	-49.37	0.00	2.00	2.95	Pass
5MHz (QPSK)	701.5	H	-36.66	-49.17	0.00	2.04	14.56	Pass
	707.5	H	-36.09	-49.39	0.00	2.03	15.34	Pass
	713.5	H	-36.46	-49.72	0.00	2.01	15.26	Pass
	701.5	V	-47.15	-48.95	0.00	2.04	3.84	Pass
	707.5	V	-47.78	-49.12	0.00	2.03	3.37	Pass
	713.5	V	-48.28	-49.35	0.00	2.01	3.08	Pass



5MHz (16QAM)	701.5	H	-36.86	-49.17	0.00	2.04	14.36	Pass
	707.5	H	-36.40	-49.39	0.00	2.03	15.03	Pass
	713.5	H	-36.85	-49.72	0.00	2.01	14.87	Pass
	701.5	V	-47.38	-48.95	0.00	2.04	3.61	Pass
	707.5	V	-48.17	-49.12	0.00	2.03	2.98	Pass
	713.5	V	-48.49	-49.35	0.00	2.01	2.87	Pass
10MHz (QPSK)	704	H	-36.38	-49.25	0.00	2.04	14.91	Pass
	707.5	H	-35.90	-49.39	0.00	2.03	15.53	Pass
	711	H	-36.00	-49.65	0.00	2.02	15.67	Pass
	704	V	-46.57	-49.00	0.00	2.04	4.47	Pass
	707.5	V	-45.88	-49.12	0.00	2.03	5.27	Pass
	711	V	-46.04	-49.33	0.00	2.02	5.30	Pass
10MHz (16QAM)	704	H	-36.59	-49.25	0.00	2.04	14.70	Pass
	707.5	H	-36.16	-49.39	0.00	2.03	15.27	Pass
	711	H	-36.31	-49.65	0.00	2.02	15.36	Pass
	704	V	-46.89	-49.00	0.00	2.04	4.15	Pass
	707.5	V	-46.15	-49.12	0.00	2.03	5.00	Pass
	711	V	-46.29	-49.33	0.00	2.02	5.05	Pass

Note: 1. EIRP= E.R.P+2.15

LTE Band 13								
Bandwidth	Frequency (MHz)	Ant Pot (H/V)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBi)	EIRP (dBm)	Conclusion
5MHz (QPSK)	779.5	H	-36.31	-49.85	0.00	2.06	15.60	Pass
	782	H	-38.25	-50.19	0.00	2.05	14.00	Pass
	784.5	H	-36.86	-50.45	0.00	2.04	15.63	Pass
	779.5	V	-44.35	-49.80	0.00	2.06	7.51	Pass
	782	V	-45.82	-49.92	0.00	2.05	6.15	Pass
	784.5	V	-44.32	-50.13	0.00	2.04	7.84	Pass
5MHz (16QAM)	779.5	H	-36.76	-50.05	0.00	2.06	15.35	Pass
	782	H	-38.46	-50.19	0.00	2.05	13.79	Pass
	784.5	H	-37.09	-50.45	0.00	2.04	15.40	Pass
	779.5	V	-44.61	-49.80	0.00	2.06	7.25	Pass
	782	V	-46.07	-49.92	0.00	2.05	5.90	Pass
	784.5	V	-44.56	-50.13	0.00	2.04	7.60	Pass
10MHz (QPSK)	782	H	-37.11	-50.75	0.00	2.07	15.72	Pass
	782	V	-44.26	-50.10	0.00	2.02	7.86	Pass
10MHz (16QAM)	782	H	-36.86	-50.22	0.00	2.04	15.40	Pass
	782	V	-44.87	-50.43	0.00	2.07	7.63	Pass

5.3 Occupied Bandwidth

Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

The EUT was connected to Spectrum Analyzer and Base Station Simulator via power Splitter. The occupied bandwidth is measured using spectrum analyzer.

RBW is set to 51 kHz, VBW is set to 160 kHz for LTE Band 4/12 (1.4MHz).

RBW is set to 100 kHz, VBW is set to 300 kHz for LTE Band 4/12 (3MHz).

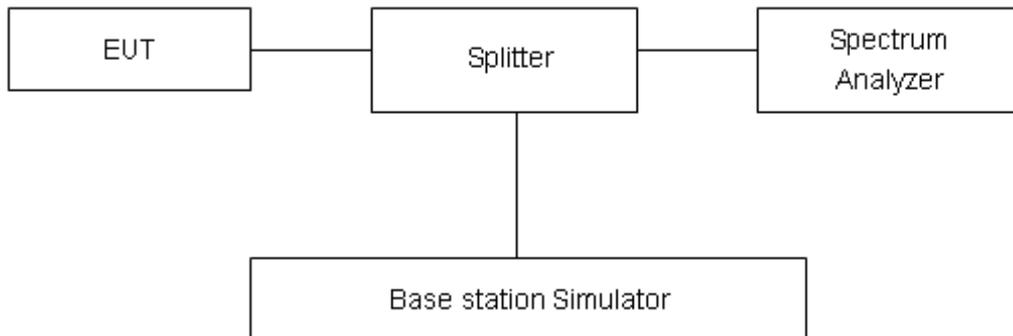
RBW is set to 100 kHz, VBW is set to 300 kHz for LTE Band 4/7/12/13 (5MHz).

RBW is set to 300 kHz, VBW is set to 1MHz for LTE Band 4/7/12/13 (10MHz).

RBW is set to 300 kHz, VBW is set to 1MHz for LTE Band 4/7 (15MHz/20MHz).

99% power and -26dBc occupied bandwidths are recorded. Spectrum analyzer plots are included on the following pages.

Test Setup



Limits

No specific occupied bandwidth requirements in part 2.1049.

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 2$, $U=624\text{Hz}$.

Test Result

LTE Band 4						
RB	Modulation	Bandwidth (MHz)	Channel	Frequency (MHz)	99% Power Bandwidth(MHz)	-26dBc Bandwidth(MHz)
100%	QPSK	1.4	19957	1710.7	1.1316	1.388
			20175	1732.5	1.1379	1.342
			20393	1754.3	1.1253	1.368
		3	19965	1711.5	2.7478	3.063
			20175	1732.5	2.7402	3.058
			20385	1753.5	2.7498	3.056
		5	19975	1712.5	4.5115	5.020
			20175	1732.5	4.5200	5.013
			20375	1752.5	4.5042	4.977
		10	20000	1715	9.0129	10.06
			20175	1732.5	9.0102	10.03
			20350	1750	9.0584	10.04
		15	20025	1717.5	13.401	14.71
			20175	1732.5	13.440	14.67
			20325	1747.5	13.440	14.70
		20	20050	1720	17.835	19.22
			20175	1732.5	17.883	19.17
			20300	1745	17.911	19.35
	16QAM	1.4	19957	1710.7	1.1191	1.327
			20175	1732.5	1.1222	1.368
			20393	1754.3	1.1279	1.349
		3	19965	1711.5	2.7622	3.090
			20175	1732.5	2.7383	3.077
			20385	1753.5	2.7373	3.066
		5	19975	1712.5	4.5374	5.005
			20175	1732.5	4.5065	4.995
			20375	1752.5	4.5314	5.024
		10	20000	1715	9.0131	10.090
			20175	1732.5	9.0322	10.010
			20350	1750	9.0261	10.080
15		20025	1717.5	13.427	14.700	
		20175	1732.5	13.428	14.510	
		20325	1747.5	13.465	14.740	
20		20050	1720	17.826	19.300	
		20175	1732.5	17.865	19.310	
		20300	1745	17.896	19.370	

LTE Band 7						
RB	Modulation	Bandwidth (MHz)	Channel	Frequency (MHz)	99% Power Bandwidth(MHz)	-26dBc Bandwidth(MHz)
100%	QPSK	5	20775	2502.5	4.5041	5.016
			21100	2535	4.5018	4.975
			21425	2567.5	4.5141	4.998
		10	20800	2505	8.9919	9.964
			21100	2535	9.0297	10.070
			21400	2565	9.0361	10.110
		15	20825	2507.5	13.396	14.660
			21100	2535	13.475	14.880
			21375	2562.5	13.476	14.760
		20	20850	2510	17.835	19.180
			21100	2535	17.862	19.270
			21350	2560	17.921	19.560
	16QAM	5	20775	2502.5	4.5233	5.019
			21100	2535	4.5213	5.011
			21425	2567.5	4.5044	4.995
		10	20800	2505	8.9933	9.998
			21100	2535	9.0539	10.07
			21400	2565	9.0394	9.975
		15	20825	2507.5	13.421	14.670
			21100	2535	13.433	14.700
			21375	2562.5	13.454	14.720
		20	20850	2510	17.834	19.220
			21100	2535	17.910	19.370
			21350	2560	17.893	19.390

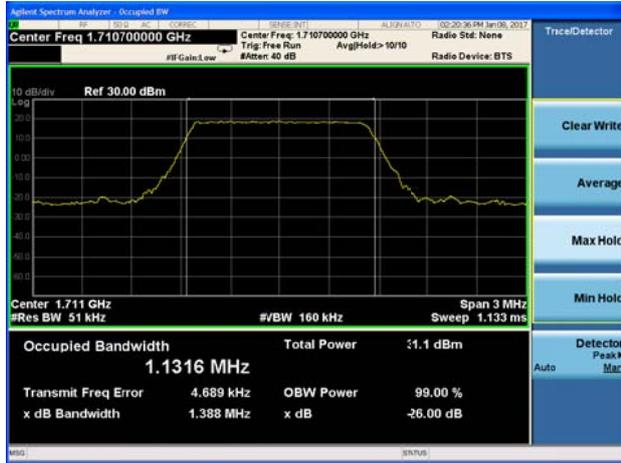
LTE Band 12						
RB	Modulation	Bandwidth (MHz)	Channel	Frequency (MHz)	99% Power Bandwidth(MHz)	-26dBc Bandwidth(MHz)
100%	QPSK	1.4	23017	699.7	1.1271	1.338
			23095	707.5	1.1298	1.361
			23173	715.3	1.1209	1.337
		3	23025	700.5	2.7421	3.060
			23095	707.5	2.7387	3.046
			23165	714.5	2.7462	3.053
		5	23035	701.5	4.5125	5.001
			23095	707.5	4.5190	5.044
			23155	713.5	4.5064	4.993
		10	23060	704	9.0373	10.090
			23095	707.5	9.0279	10.050
			23130	711	9.0041	10.060
	16QAM	1.4	23017	699.7	1.1189	1.351
			23095	707.5	1.1177	1.320
			23173	715.3	1.1308	1.344
		3	23025	700.5	2.7352	3.058
			23095	707.5	2.7388	3.075
			23165	714.5	2.7412	3.071
		5	23035	701.5	4.5290	5.041
			23095	707.5	4.4999	5.000
			23155	713.5	4.5399	5.037
		10	23060	704	9.0530	10.040
			23095	707.5	8.9939	10.000
			23130	711	8.9970	9.9960



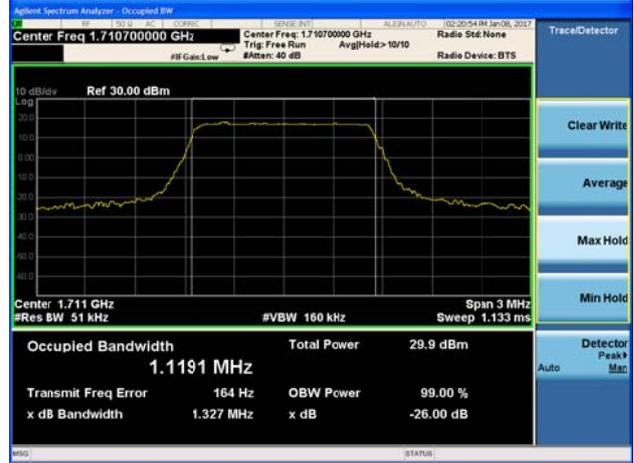
LTE Band 13						
RB	Modulation	Bandwidth (MHz)	Channel	Frequency (MHz)	99% Power Bandwidth(kHz)	-26dBc Bandwidth(kHz)
100%	QPSK	5	23205	779.5	4.5032	5.006
			23230	782	4.5182	4.997
			23255	784.5	4.5013	4.966
		10	23230	782	9.0338	9.952
			23230	782	9.0457	10.040
			23230	782	9.0430	10.040
	16QAM	5	23205	779.5	4.5239	5.006
			23230	782	4.5040	4.976
			23255	784.5	4.5185	4.993
		10	23230	782	9.0279	10.030
			23230	782	9.0215	9.997
			23230	782	9.0191	10.020



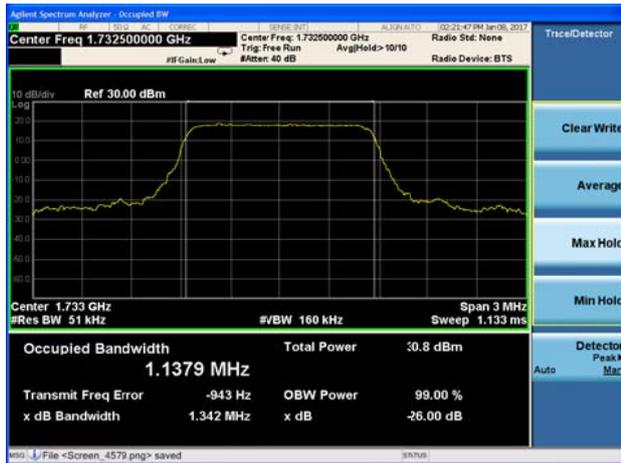
LTE Band 4 QPSK Bandwidth = 1.4MHz
CH19957 Occupied Bandwidth



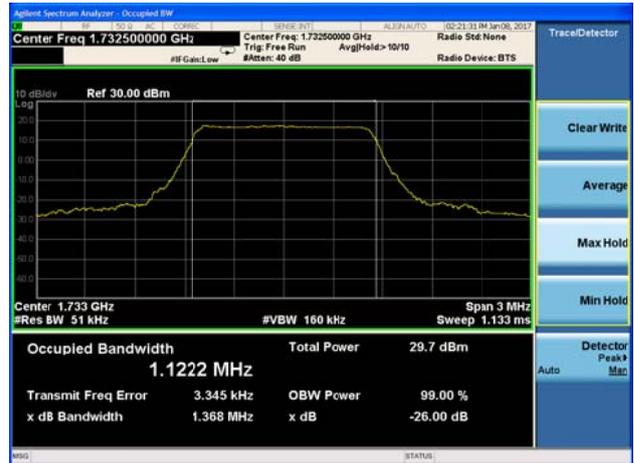
LTE Band 4 16QAM Bandwidth = 1.4MHz
CH19957 Occupied Bandwidth



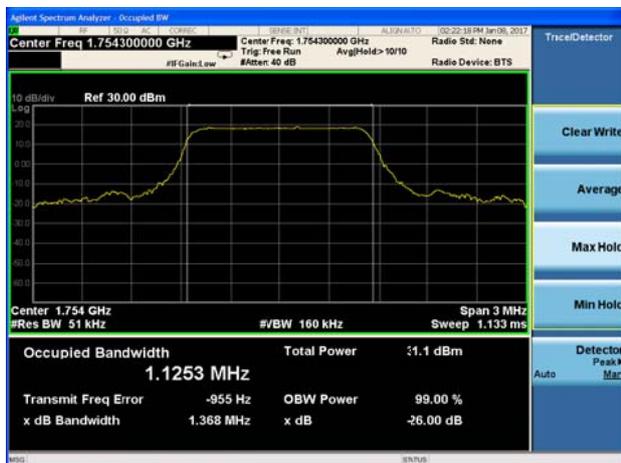
LTE Band 4 QPSK Bandwidth = 1.4MHz
CH20175 Occupied Bandwidth



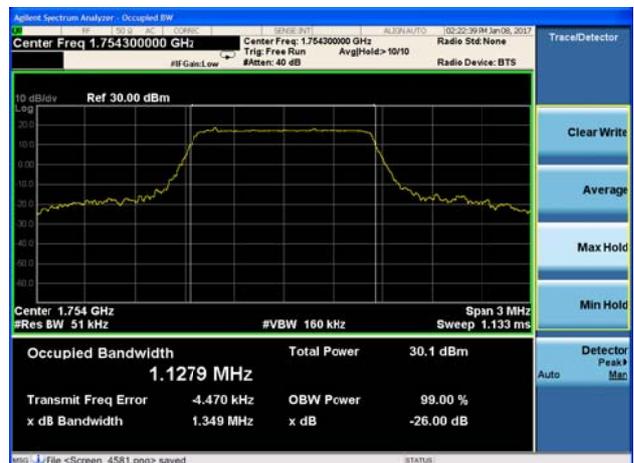
LTE Band 4 16QAM Bandwidth = 1.4MHz
CH20175 Occupied Bandwidth



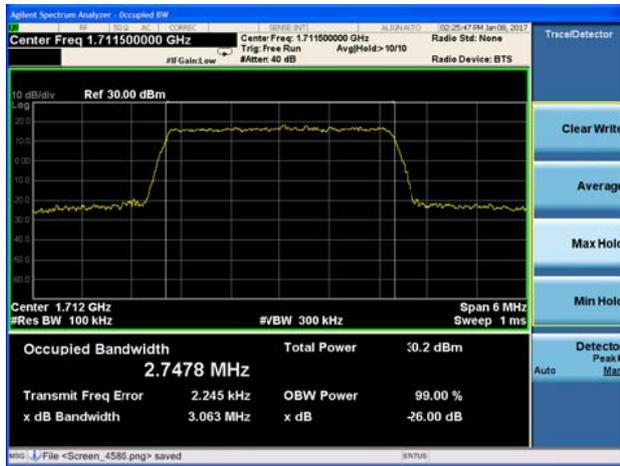
LTE Band 4 QPSK Bandwidth = 1.4MHz
CH20393 Occupied Bandwidth



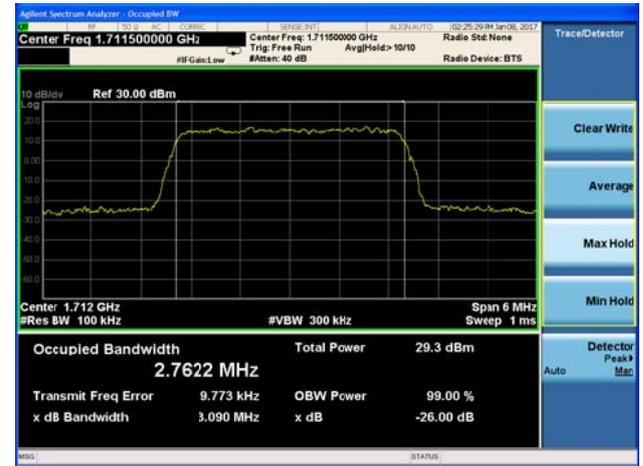
LTE Band 4 16QAM Bandwidth = 1.4MHz
CH20393 Occupied Bandwidth



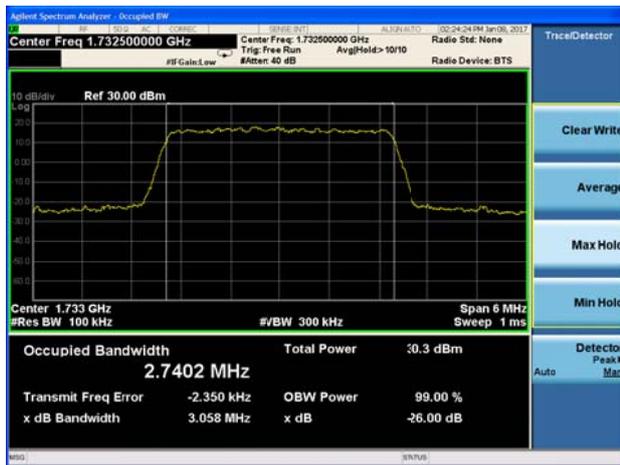
LTE Band 4 QPSK Bandwidth = 3MHz CH19965
Occupied Bandwidth



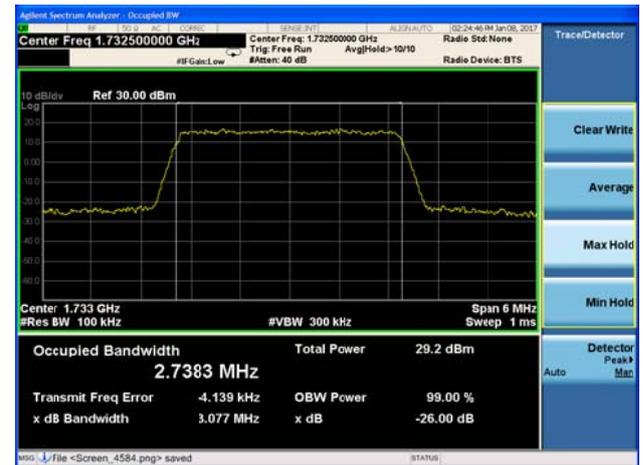
LTE Band 4 16QAM Bandwidth = 3MHz CH19965
Occupied Bandwidth



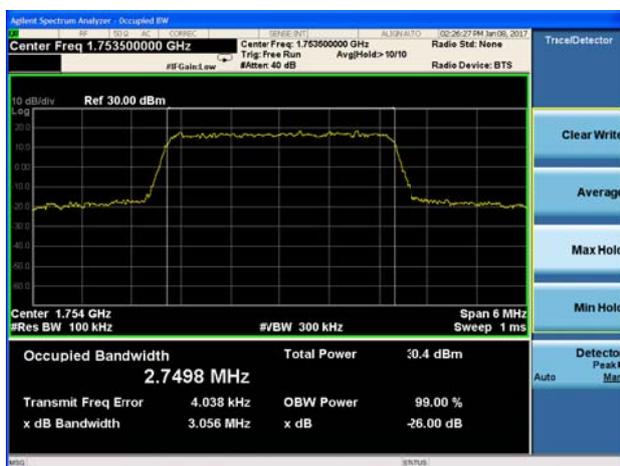
LTE Band 4 QPSK Bandwidth = 3MHz CH20175
Occupied Bandwidth



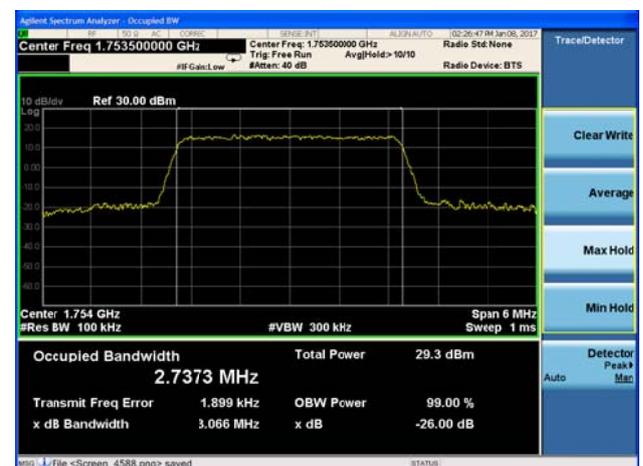
LTE Band 4 16QAM Bandwidth = 3MHz CH20175
Occupied Bandwidth



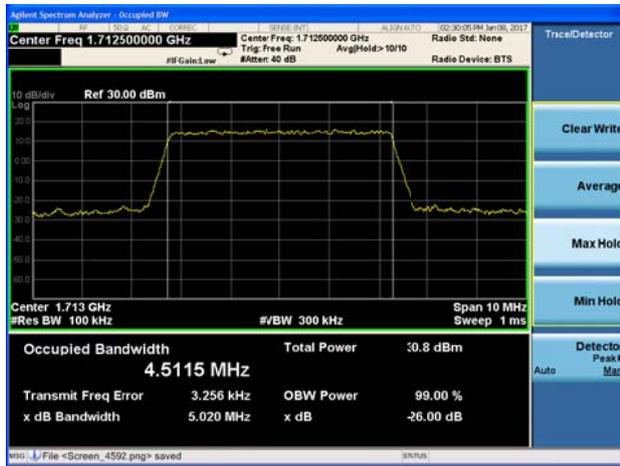
LTE Band 4 QPSK Bandwidth = 3MHz CH20385
Occupied Bandwidth



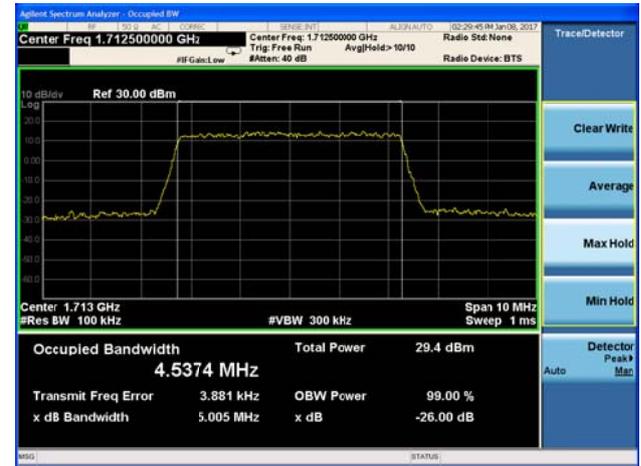
LTE Band 4 16QAM Bandwidth = 3MHz CH20385
Occupied Bandwidth



LTE Band 4 QPSK Bandwidth = 5MHz CH19975
Occupied Bandwidth



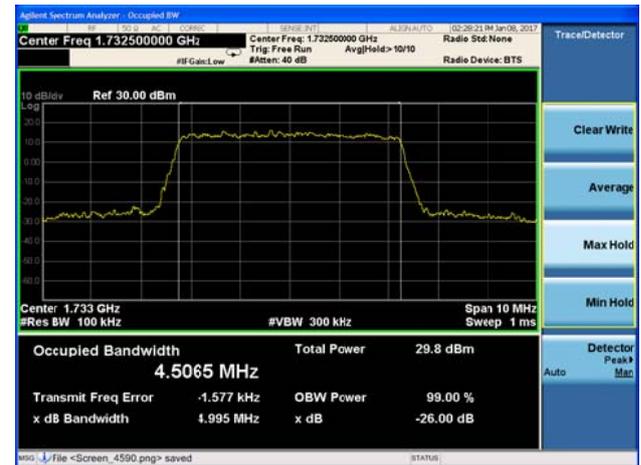
LTE Band 4 16QAM Bandwidth = 5MHz CH19975
Occupied Bandwidth



LTE Band 4 QPSK Bandwidth = 5MHz CH20175
Occupied Bandwidth



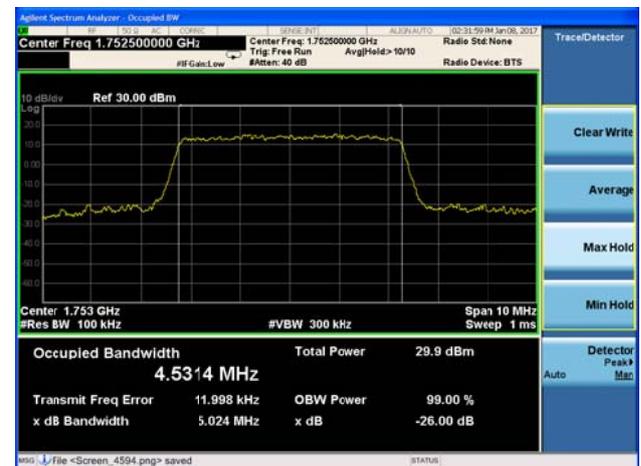
LTE Band 4 16QAM Bandwidth = 5MHz CH20175
Occupied Bandwidth



LTE Band 4 QPSK Bandwidth = 5MHz CH20375
Occupied Bandwidth

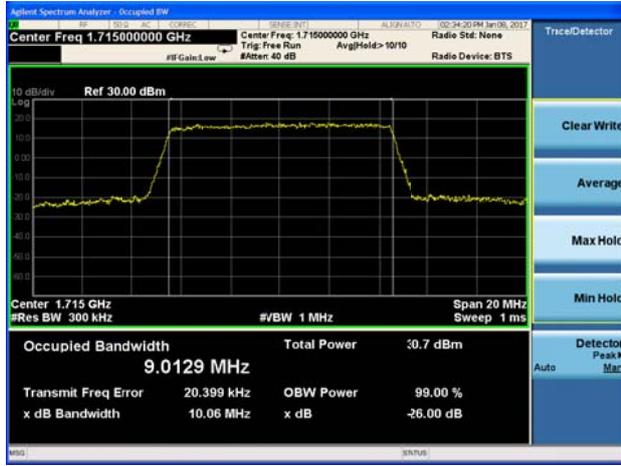


LTE Band 4 16QAM Bandwidth = 5MHz CH20375
Occupied Bandwidth

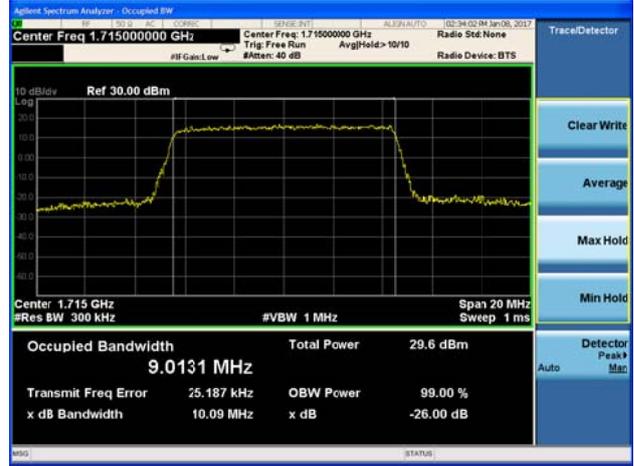




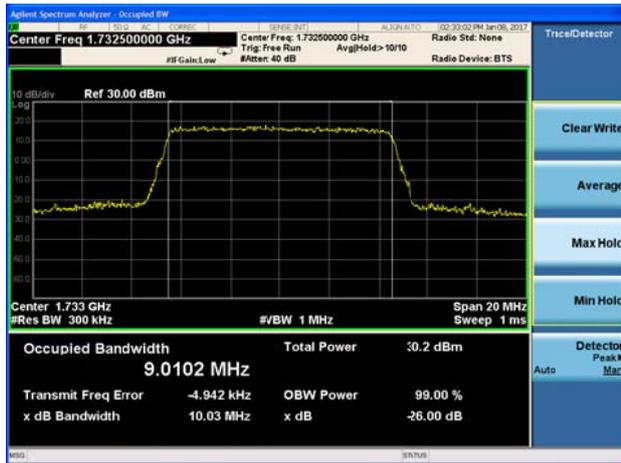
LTE Band 4 QPSK Bandwidth = 10MHz CH20000 Occupied Bandwidth



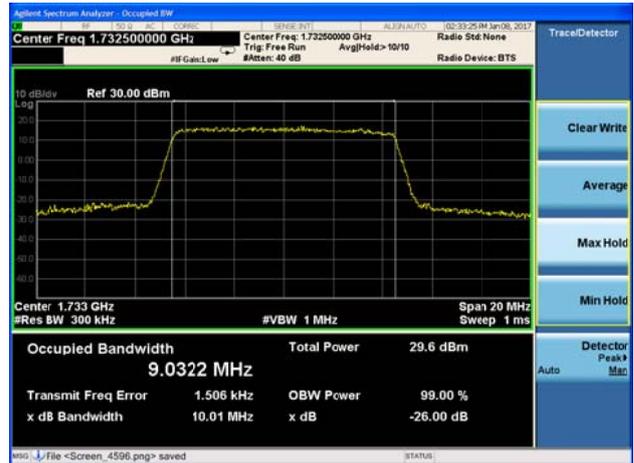
LTE Band 4 16QAM Bandwidth = 10MHz CH20000 Occupied Bandwidth



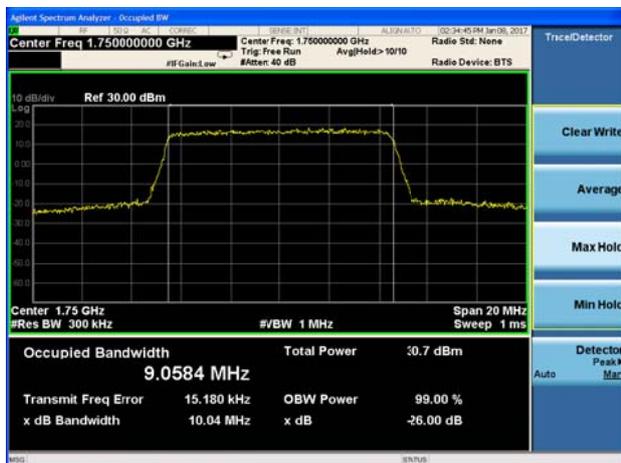
LTE Band 4 QPSK Bandwidth = 10MHz CH20175 Occupied Bandwidth



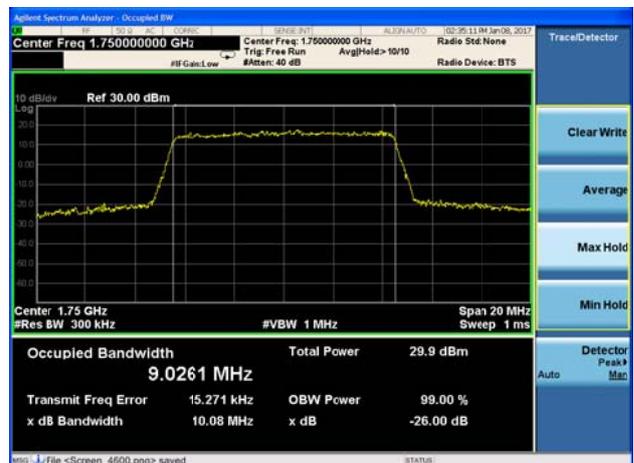
LTE Band 4 16QAM Bandwidth = 10MHz CH20175 Occupied Bandwidth



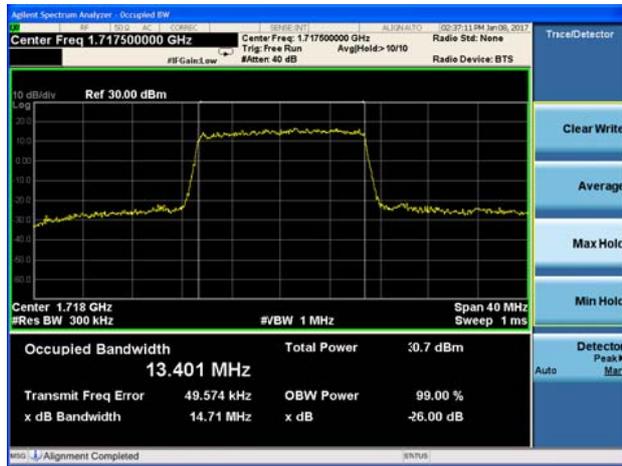
LTE Band 4 QPSK Bandwidth = 10MHz CH20350 Occupied Bandwidth



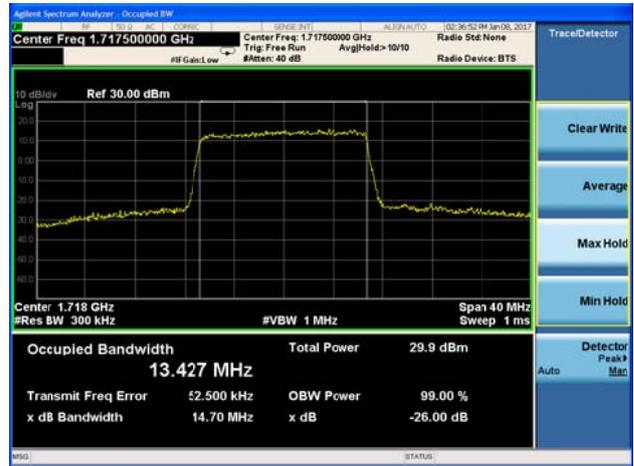
LTE Band 4 16QAM Bandwidth = 10MHz CH20350 Occupied Bandwidth



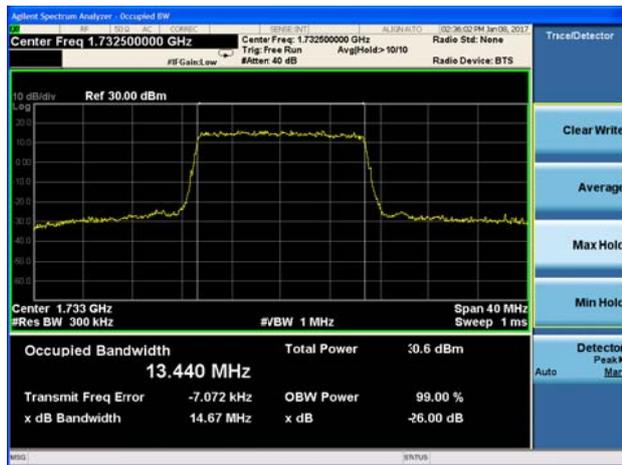
LTE Band 4 QPSK Bandwidth = 15MHz CH20025
Occupied Bandwidth



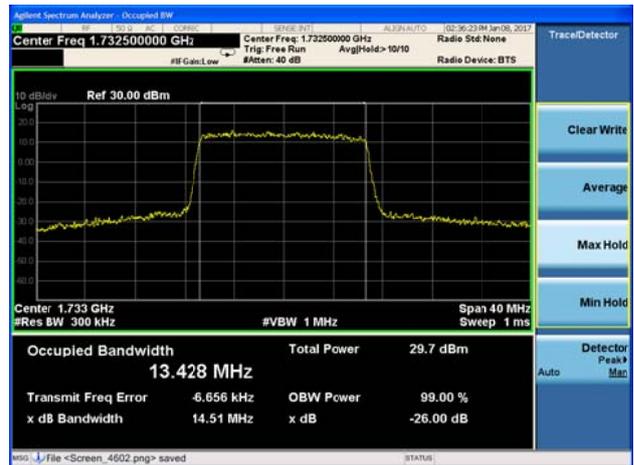
LTE Band 4 16QAM Bandwidth = 15MHz
CH20025 Occupied Bandwidth



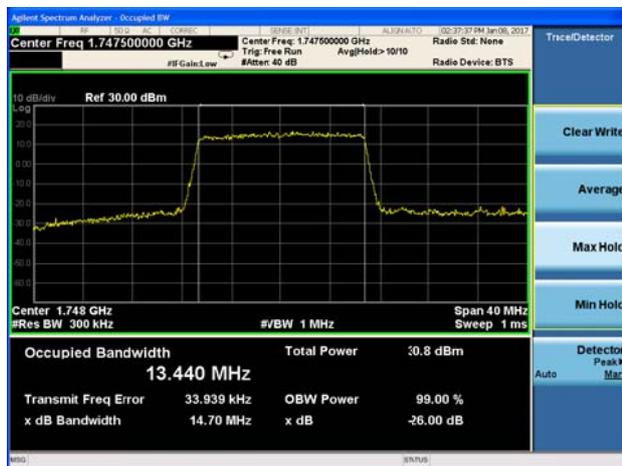
LTE Band 4 QPSK Bandwidth = 15MHz CH20175
Occupied Bandwidth



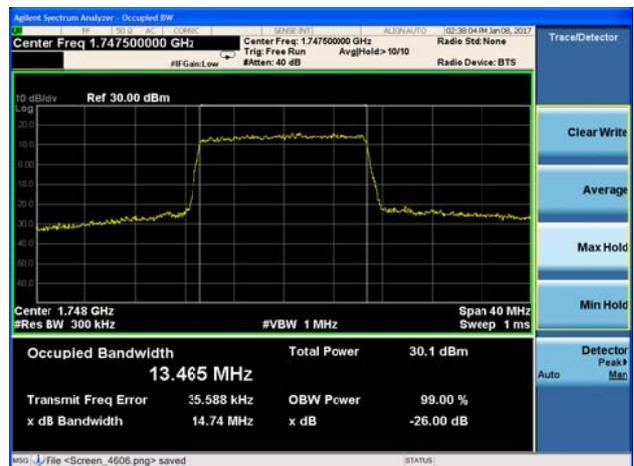
LTE Band 4 16QAM Bandwidth = 15MHz
CH20175 Occupied Bandwidth



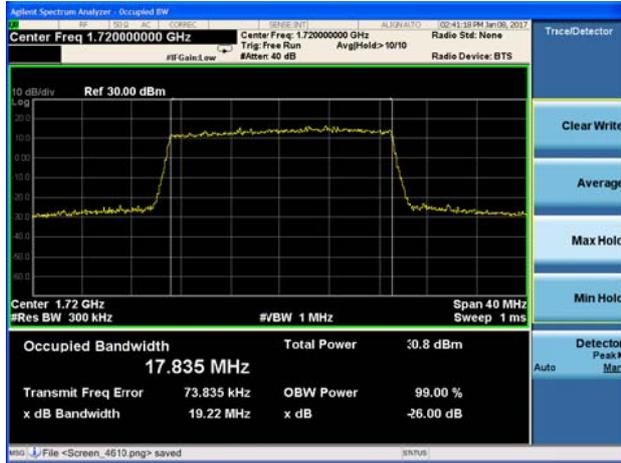
LTE Band 4 QPSK Bandwidth = 15MHz CH20325
Occupied Bandwidth



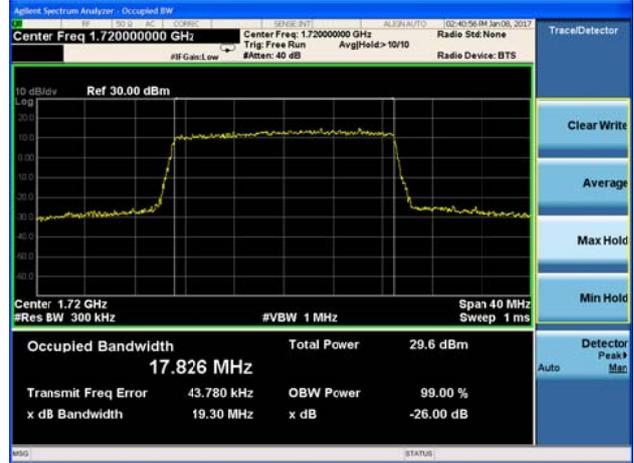
LTE Band 4 16QAM Bandwidth = 15MHz
CH20325 Occupied Bandwidth



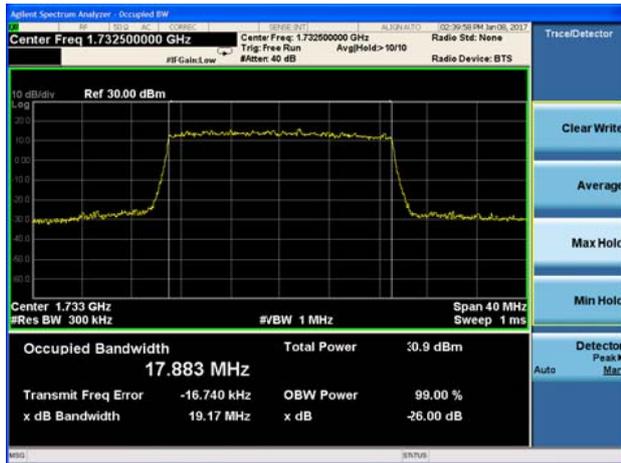
LTE Band 4 QPSK Bandwidth = 20MHz CH20050
Occupied Bandwidth



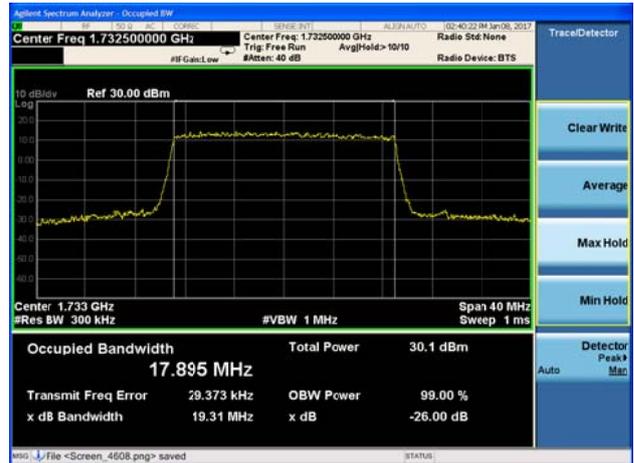
LTE Band 4 16QAM Bandwidth = 20MHz
CH20050 Occupied Bandwidth



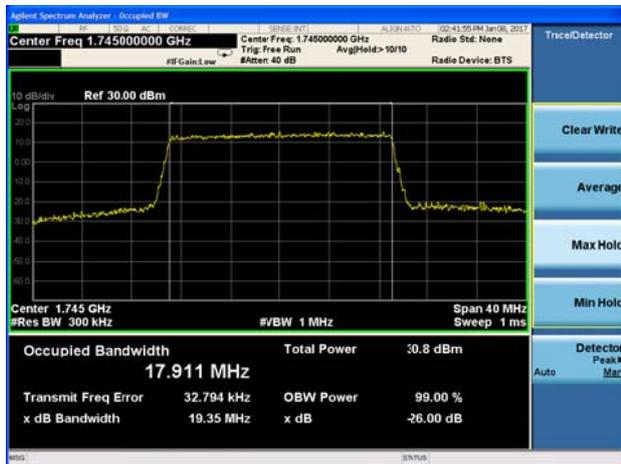
LTE Band 4 QPSK Bandwidth = 20MHz CH20175
Occupied Bandwidth



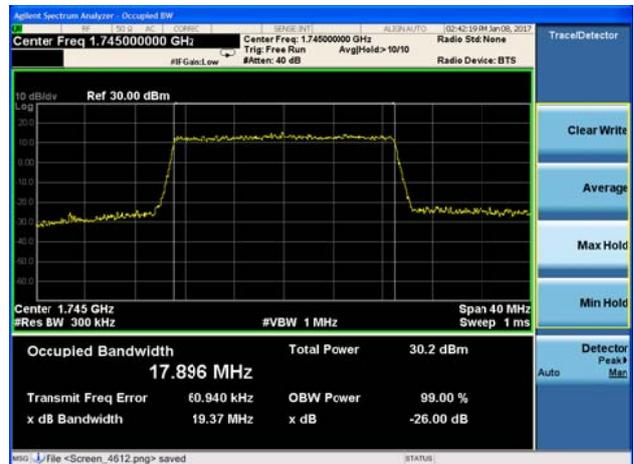
LTE Band 4 16QAM Bandwidth = 20MHz
CH20175 Occupied Bandwidth



LTE Band 4 QPSK Bandwidth = 20MHz CH20300
Occupied Bandwidth

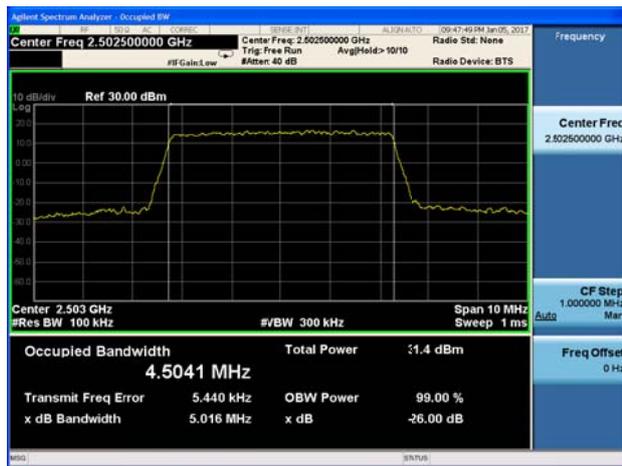


LTE Band 4 16QAM Bandwidth = 20MHz
CH20300 Occupied Bandwidth

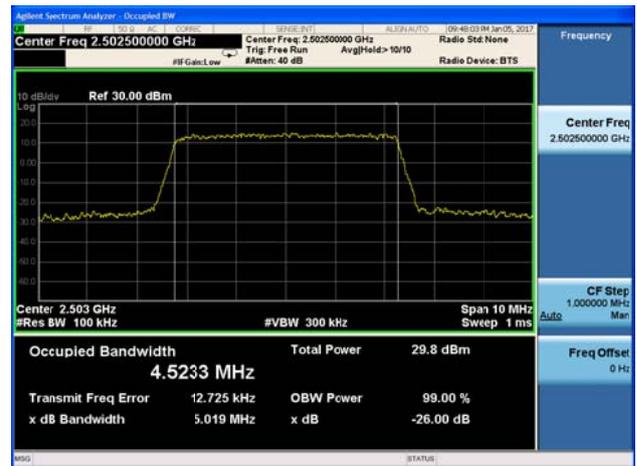




LTE Band 7 QPSK Bandwidth = 5MHz CH20775
Occupied Bandwidth



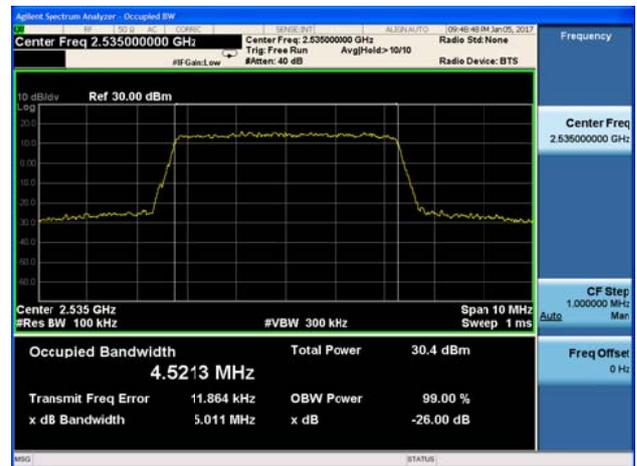
LTE Band 7 16QAM Bandwidth = 5MHz CH20775
Occupied Bandwidth



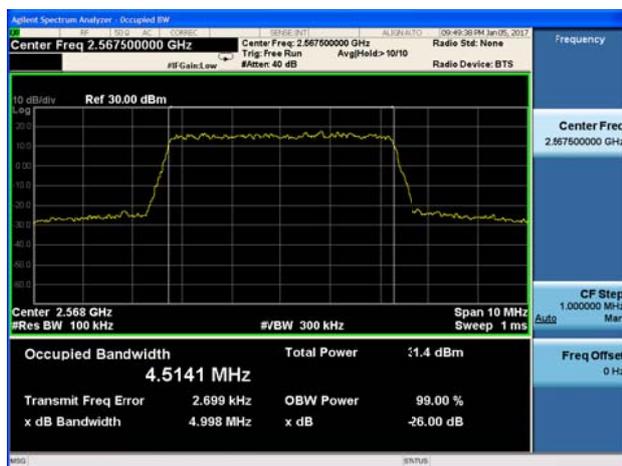
LTE Band 7 QPSK Bandwidth = 5MHz CH21100
Occupied Bandwidth



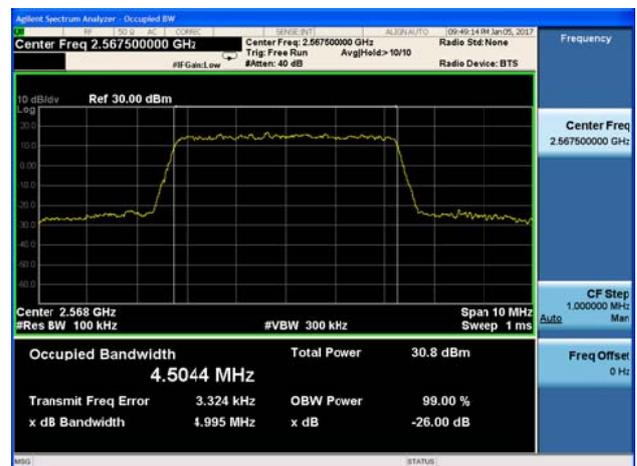
LTE Band 7 16QAM Bandwidth = 5MHz CH21100
Occupied Bandwidth



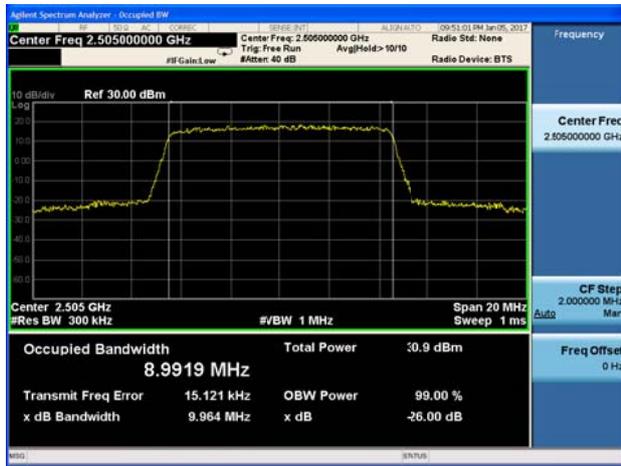
LTE Band 7 QPSK Bandwidth = 5MHz CH21425
Occupied Bandwidth



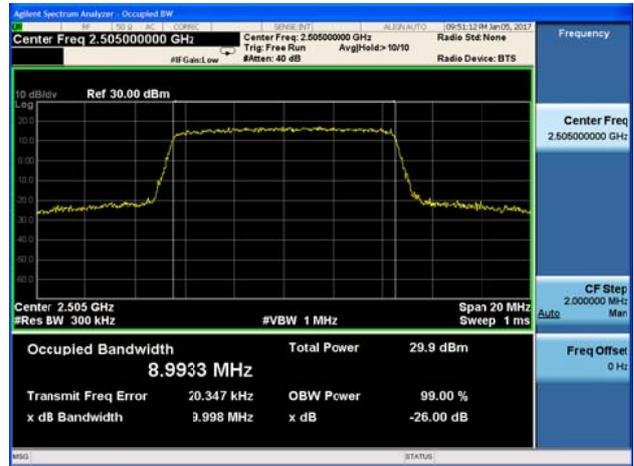
LTE Band 7 16QAM Bandwidth = 5MHz CH21425
Occupied Bandwidth



LTE Band 7 QPSK Bandwidth = 10MHz CH20800
Occupied Bandwidth



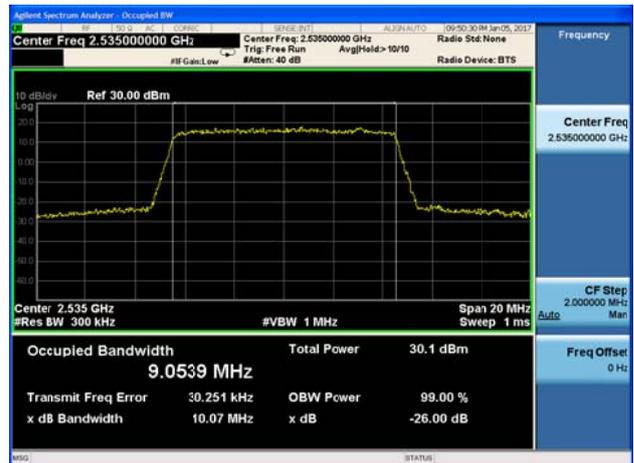
LTE Band 7 16QAM Bandwidth = 10MHz
CH20800 Occupied Bandwidth



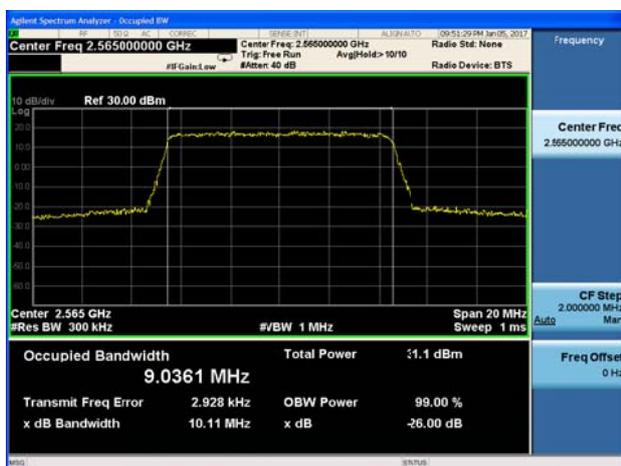
LTE Band 7 QPSK Bandwidth = 10MHz CH21100
Occupied Bandwidth



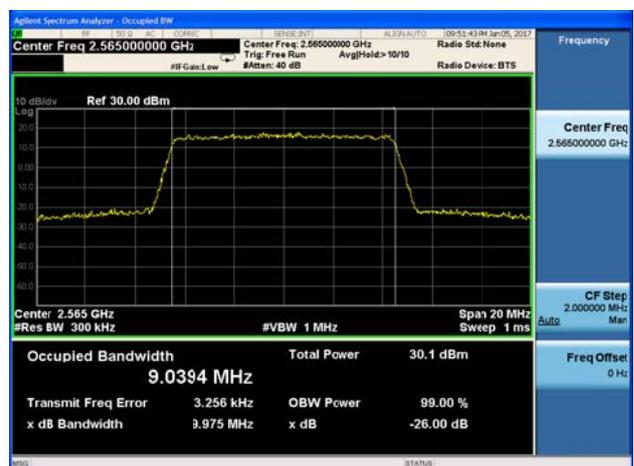
LTE Band 7 16QAM Bandwidth = 10MHz
CH21100 Occupied Bandwidth



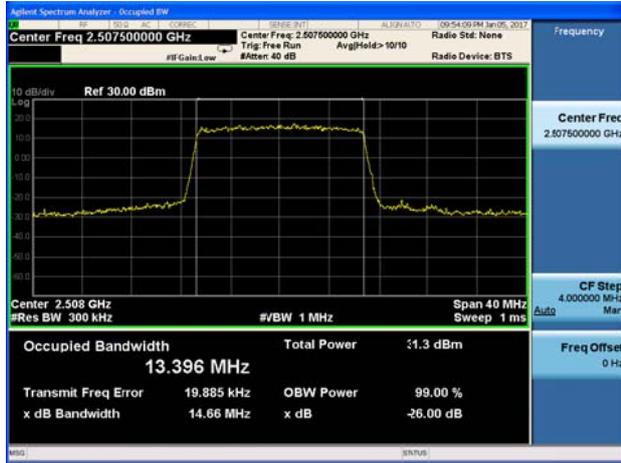
LTE Band 7 QPSK Bandwidth = 10MHz CH21400
Occupied Bandwidth



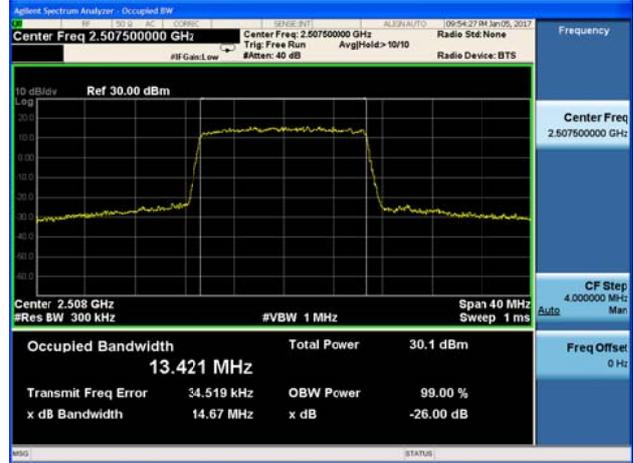
LTE Band 7 16QAM Bandwidth = 10MHz
CH21400 Occupied Bandwidth



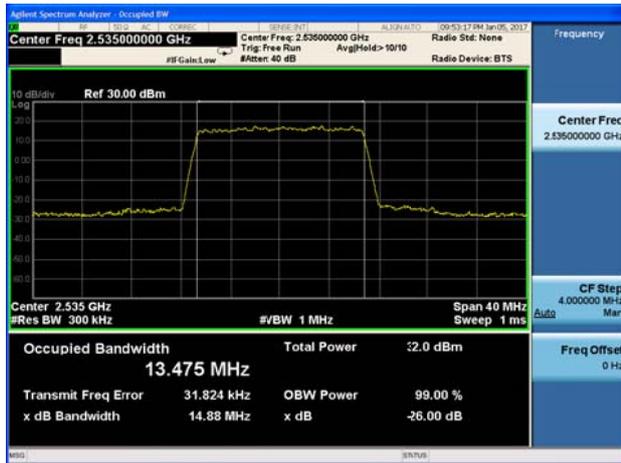
LTE Band 7 QPSK Bandwidth = 15MHz CH20825
Occupied Bandwidth



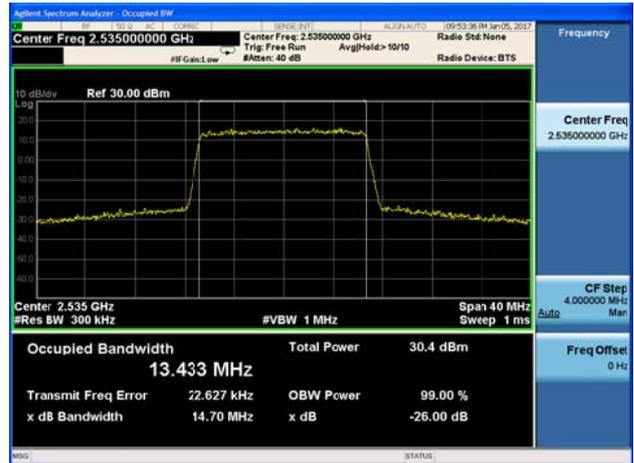
LTE Band 7 16QAM Bandwidth = 15MHz
CH20825 Occupied Bandwidth



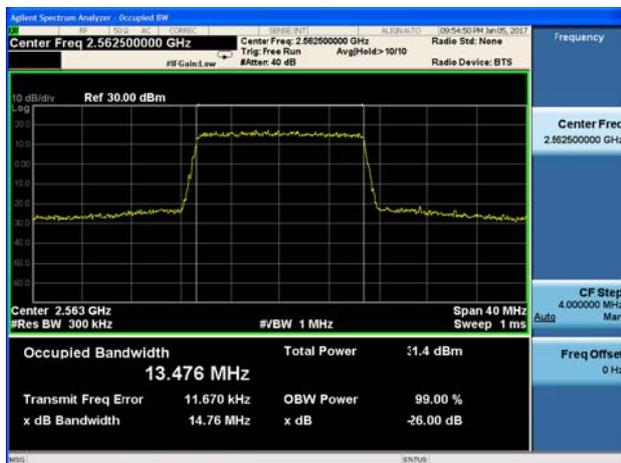
LTE Band 7 QPSK Bandwidth = 15MHz CH21100
Occupied Bandwidth



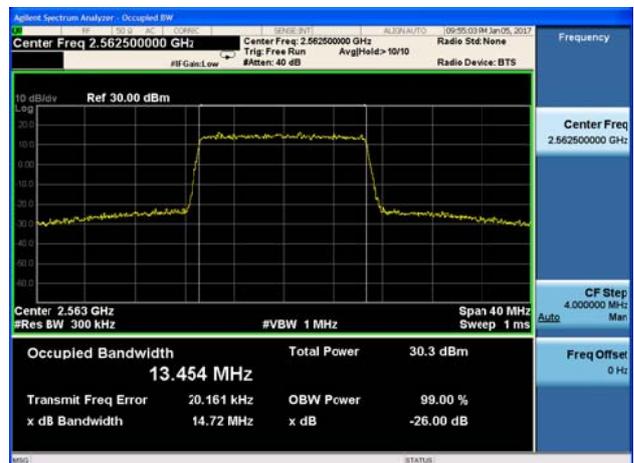
LTE Band 7 16QAM Bandwidth = 15MHz
CH21100 Occupied Bandwidth



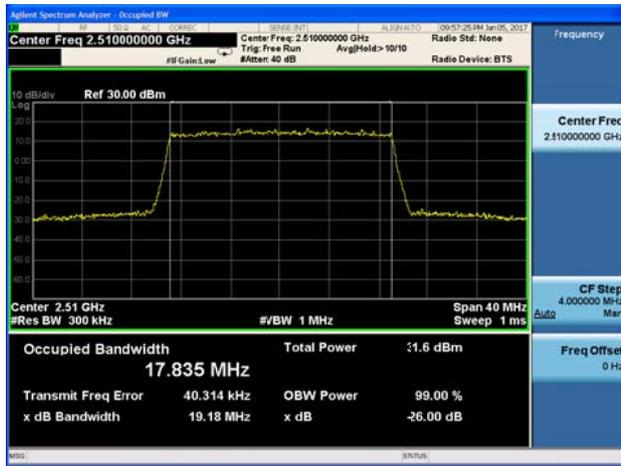
LTE Band 7 QPSK Bandwidth = 15MHz CH21375
Occupied Bandwidth



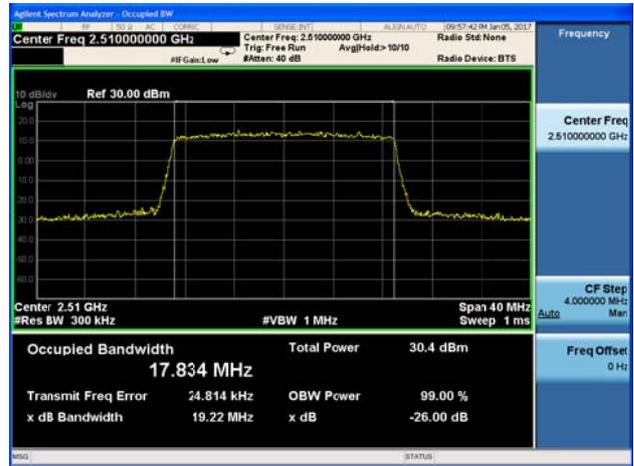
LTE Band 7 16QAM Bandwidth = 15MHz
CH21375 Occupied Bandwidth



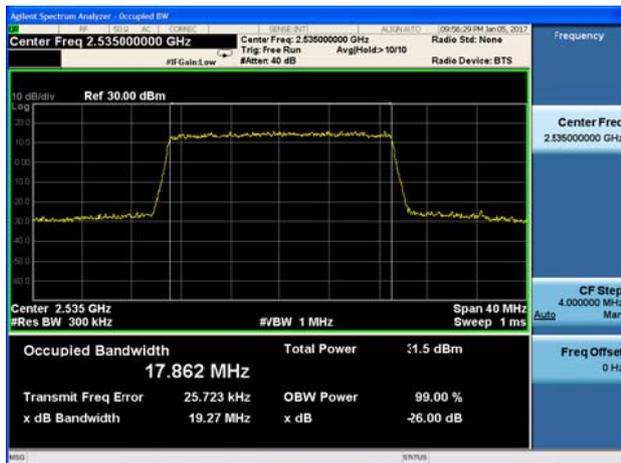
LTE Band 7 QPSK Bandwidth = 20MHz CH20850
Occupied Bandwidth



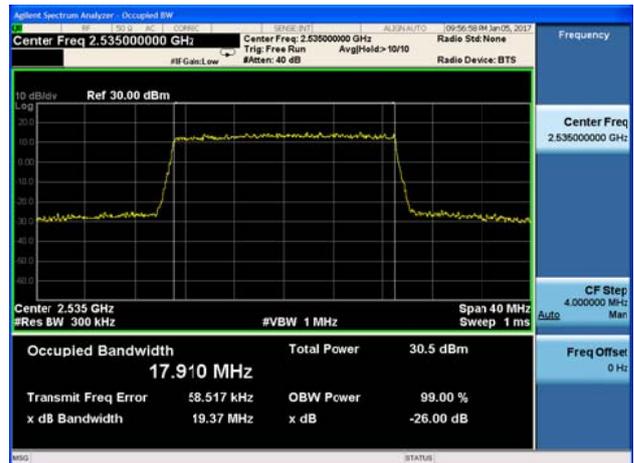
LTE Band 7 16QAM Bandwidth = 20MHz
CH20850 Occupied Bandwidth



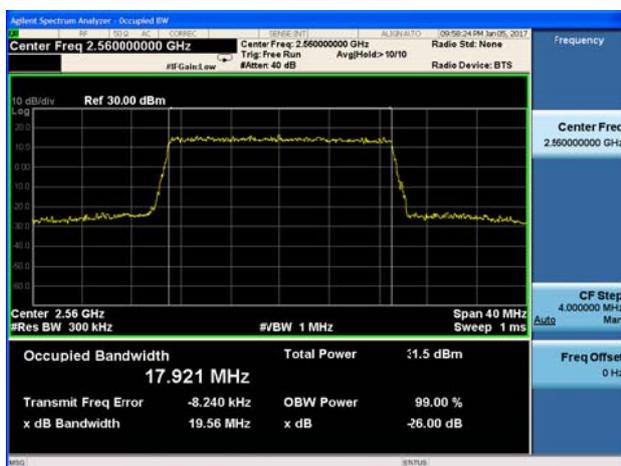
LTE Band 7 QPSK Bandwidth = 20MHz CH21100
Occupied Bandwidth



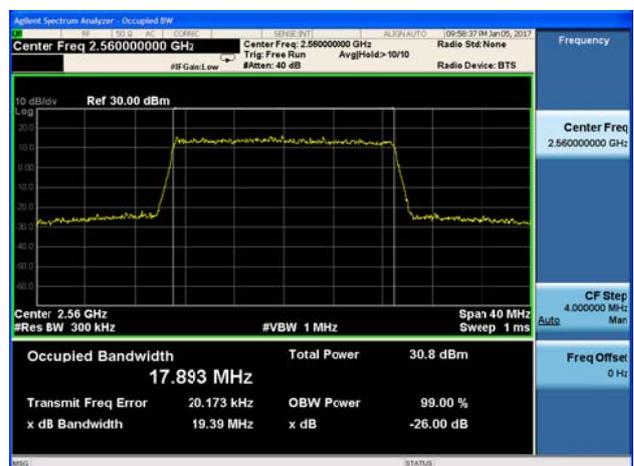
LTE Band 7 16QAM Bandwidth = 20MHz
CH21100 Occupied Bandwidth



LTE Band 7 QPSK Bandwidth = 20MHz CH21350
Occupied Bandwidth

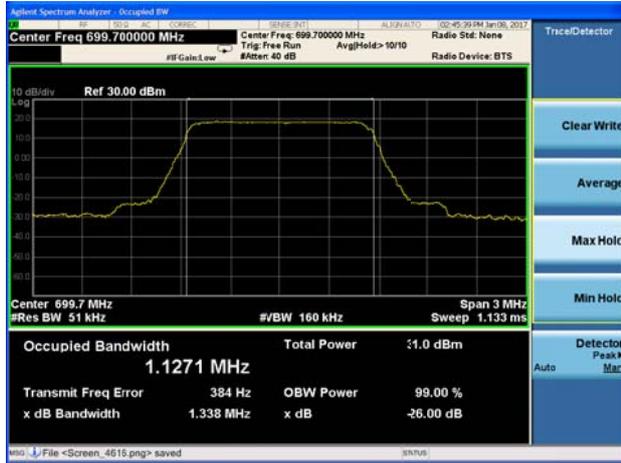


LTE Band 7 16QAM Bandwidth = 20MHz
CH21350 Occupied Bandwidth





LTE Band 12 QPSK Bandwidth = 1.4MHz
CH23017 Occupied Bandwidth



LTE Band 12 16QAM Bandwidth = 1.4MHz
CH23017 Occupied Bandwidth



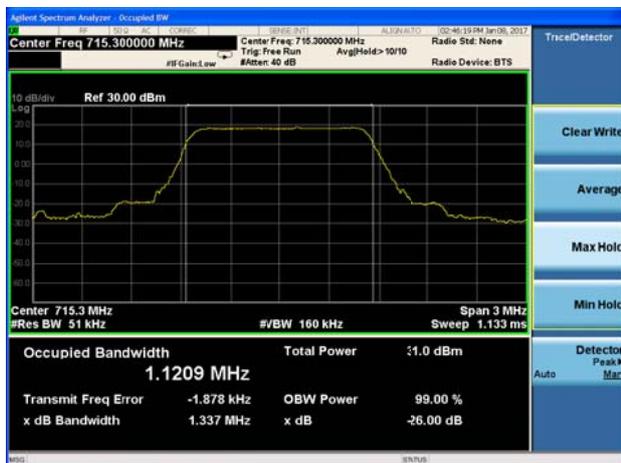
LTE Band 12 QPSK Bandwidth = 1.4MHz
CH23095 Occupied Bandwidth



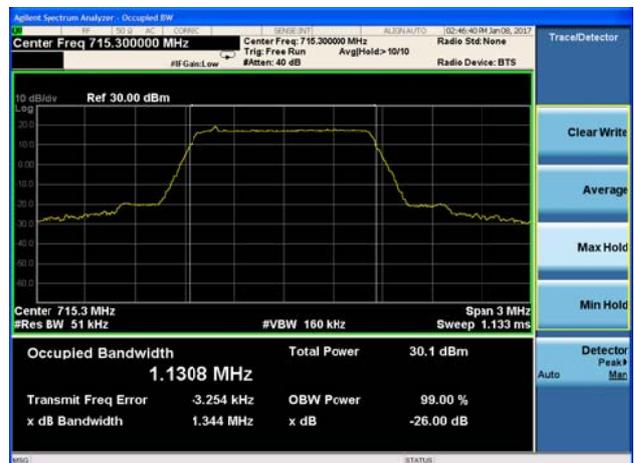
LTE Band 12 16QAM Bandwidth = 1.4MHz
CH23095 Occupied Bandwidth



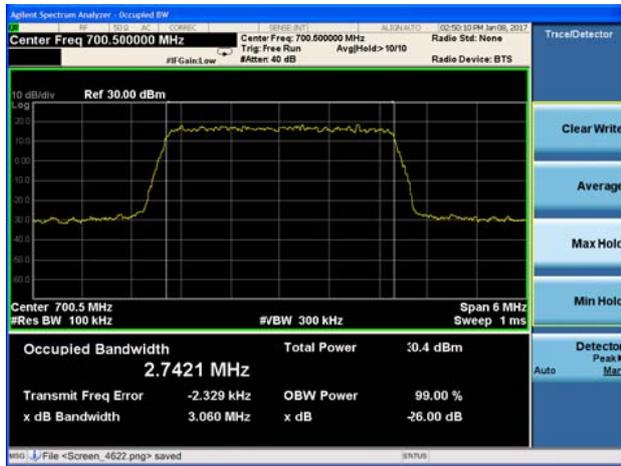
LTE Band 12 QPSK Bandwidth = 1.4MHz
CH23173 Occupied Bandwidth



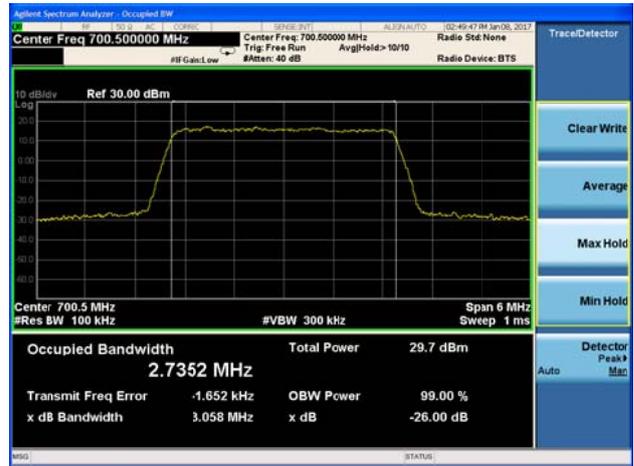
LTE Band 12 16QAM Bandwidth = 1.4MHz
CH23173 Occupied Bandwidth



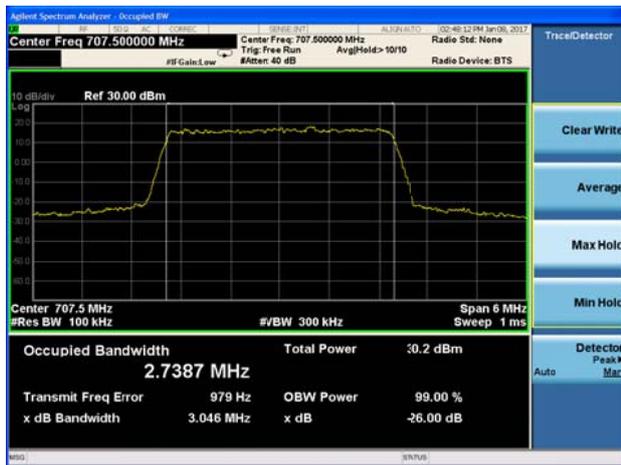
LTE Band 12 QPSK Bandwidth = 3MHz CH23025
Occupied Bandwidth



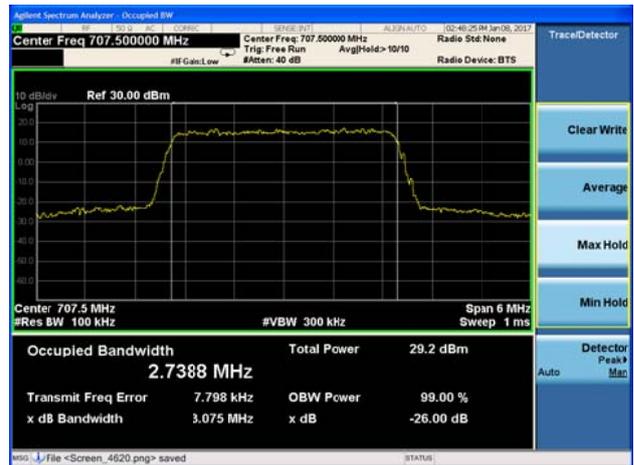
LTE Band 12 16QAM Bandwidth = 3MHz
CH23025 Occupied Bandwidth



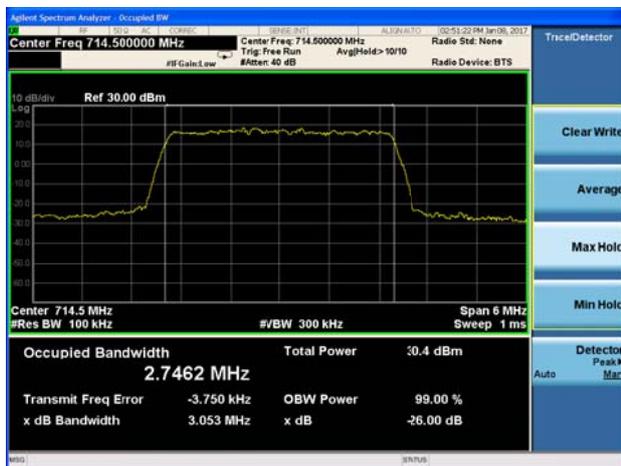
LTE Band 12 QPSK Bandwidth = 3MHz CH23095
Occupied Bandwidth



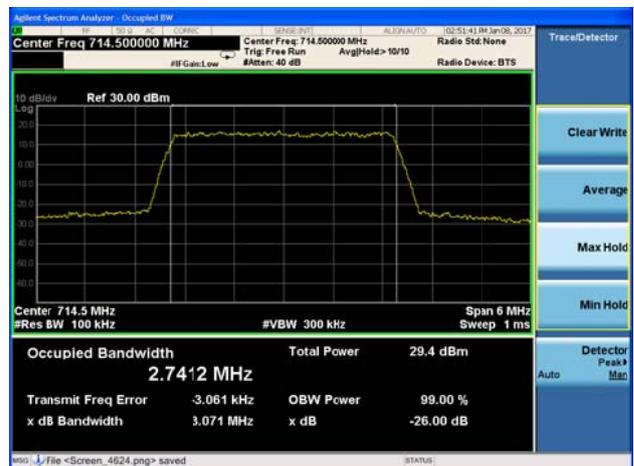
LTE Band 12 16QAM Bandwidth = 3MHz
CH23095 Occupied Bandwidth



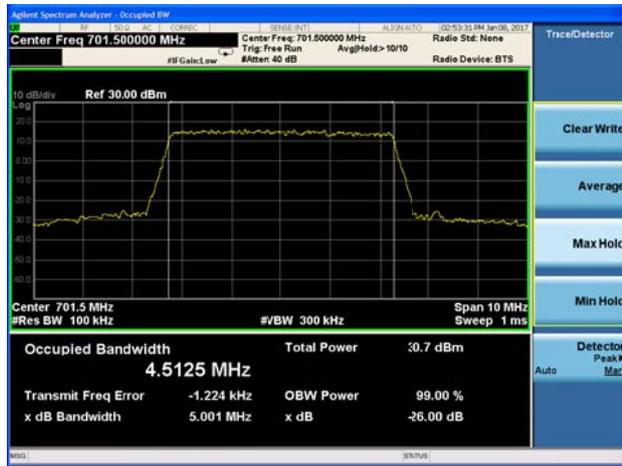
LTE Band 12 QPSK Bandwidth = 3MHz CH23165
Occupied Bandwidth



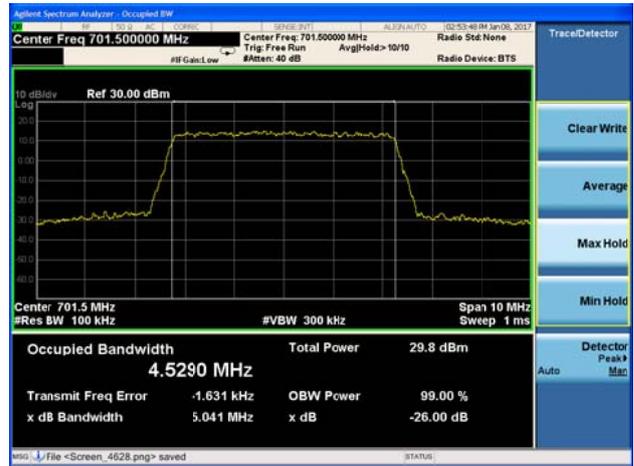
LTE Band 12 16QAM Bandwidth = 3MHz
CH23165 Occupied Bandwidth



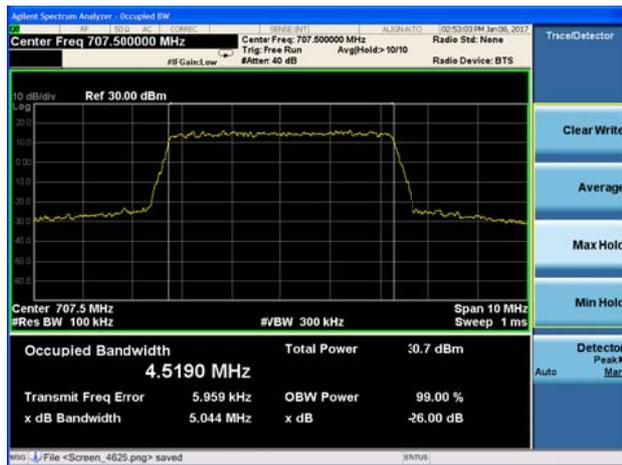
LTE Band 12 QPSK Bandwidth = 5MHz CH23035
Occupied Bandwidth



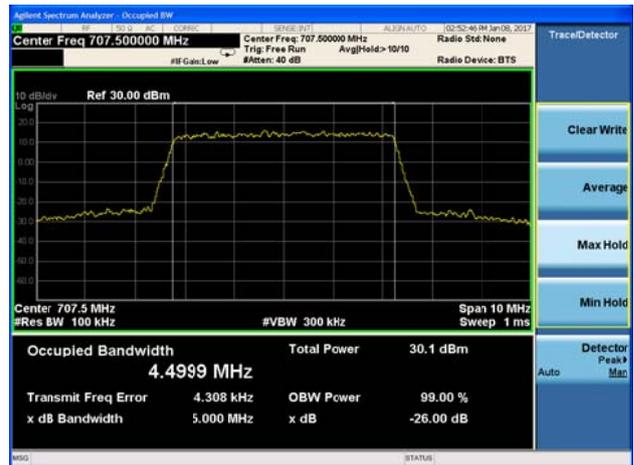
LTE Band 12 16QAM Bandwidth = 5MHz
CH23035 Occupied Bandwidth



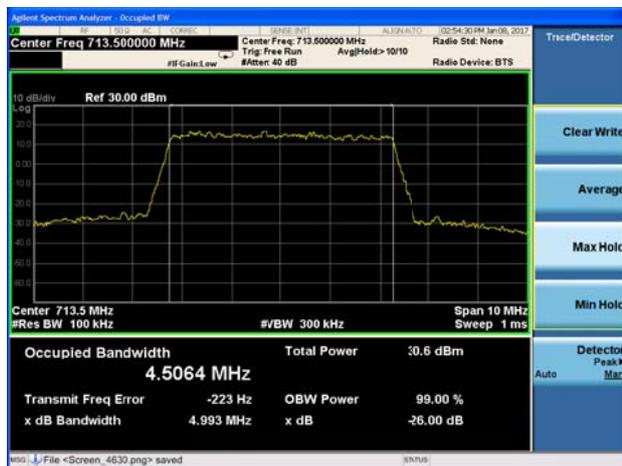
LTE Band 12 QPSK Bandwidth = 5MHz CH23095
Occupied Bandwidth



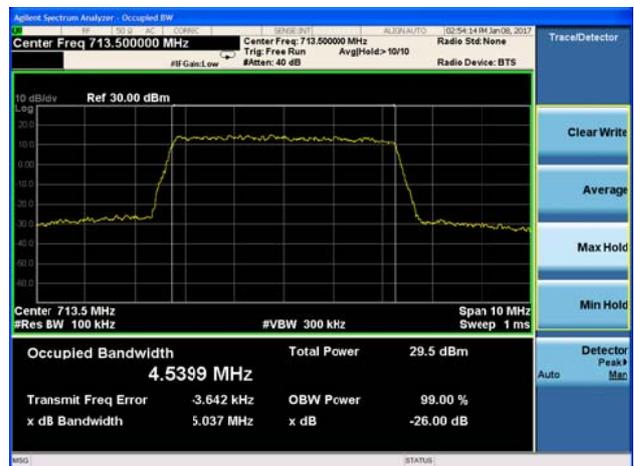
LTE Band 12 16QAM Bandwidth = 5MHz
CH23095 Occupied Bandwidth



LTE Band 12 QPSK Bandwidth = 5MHz CH23155
Occupied Bandwidth



LTE Band 12 16QAM Bandwidth = 5MHz
CH23155 Occupied Bandwidth





LTE Band 12 QPSK Bandwidth = 10MHz
CH23060 Occupied Bandwidth



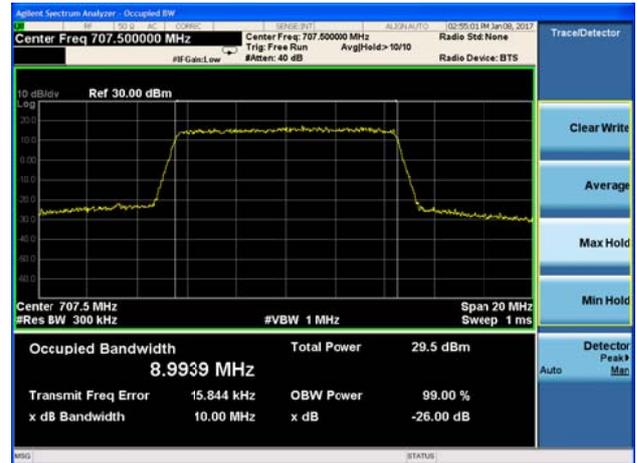
LTE Band 12 16QAM Bandwidth = 10MHz
CH23060 Occupied Bandwidth



LTE Band 12 QPSK Bandwidth = 10MHz
CH23095 Occupied Bandwidth



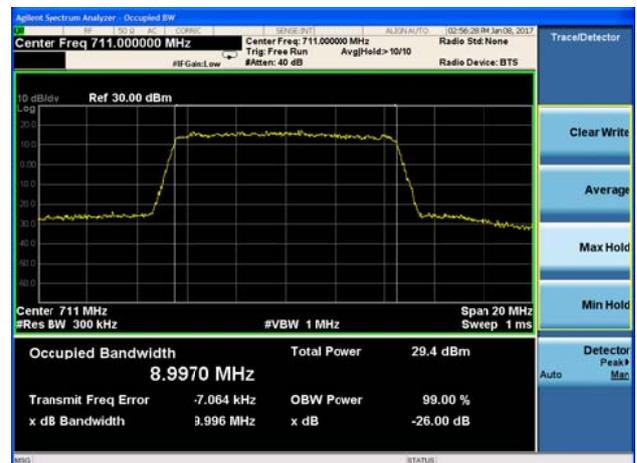
LTE Band 12 16QAM Bandwidth = 10MHz
CH23095 Occupied Bandwidth



LTE Band 12 QPSK Bandwidth = 10MHz
CH23130 Occupied Bandwidth

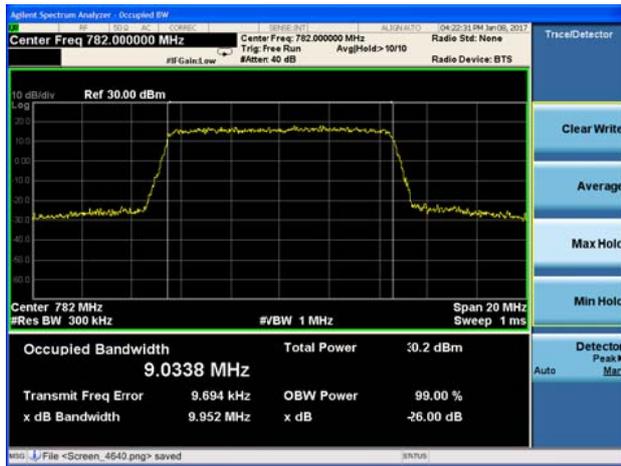


LTE Band 12 16QAM Bandwidth = 10MHz
CH23130 Occupied Bandwidth

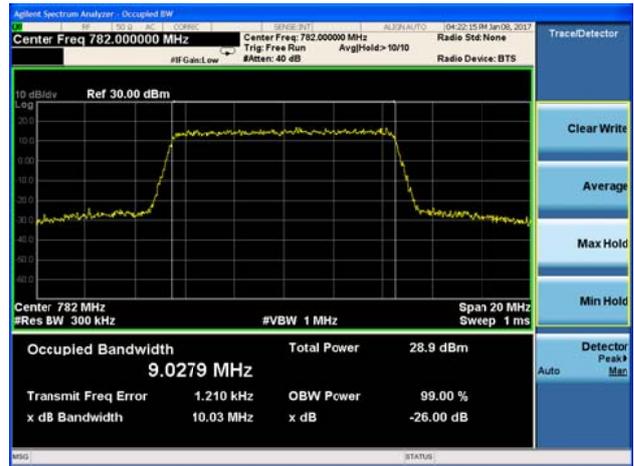




LTE Band 13 QPSK Bandwidth = 5MHz
CH23205 Occupied Bandwidth



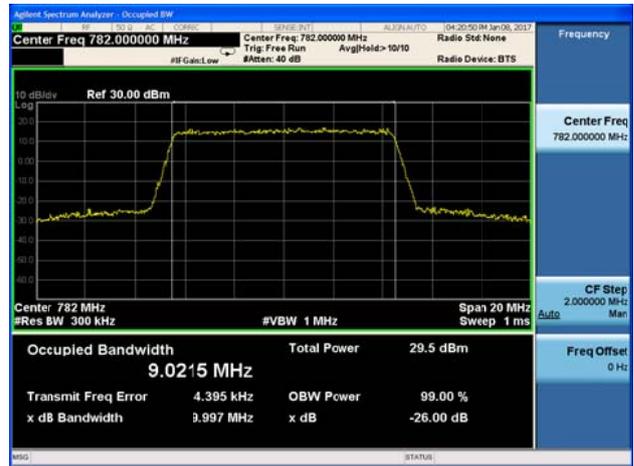
LTE Band 13 16QAM Bandwidth = 5MHz
CH23205 Occupied Bandwidth



LTE Band 13 QPSK Bandwidth = 5MHz
CH23230 Occupied Bandwidth



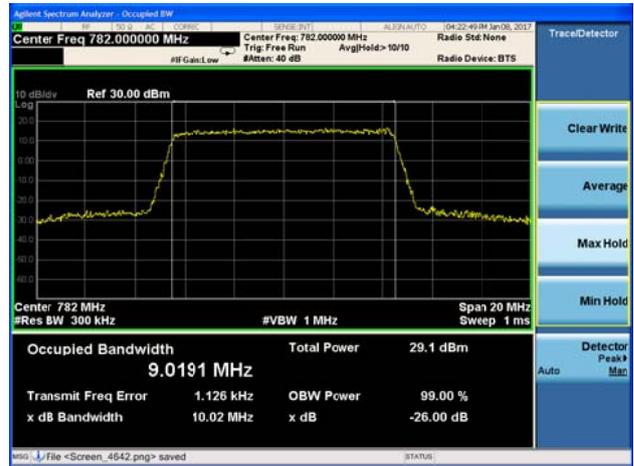
LTE Band 13 16QAM Bandwidth = 5MHz
CH23230 Occupied Bandwidth



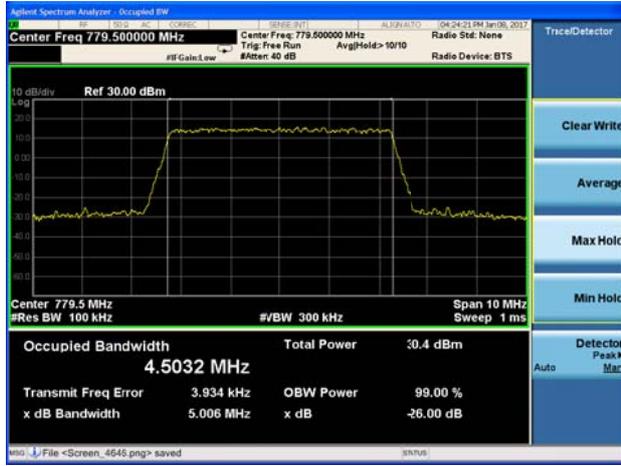
LTE Band 13 QPSK Bandwidth = 5MHz
CH23255 Occupied Bandwidth



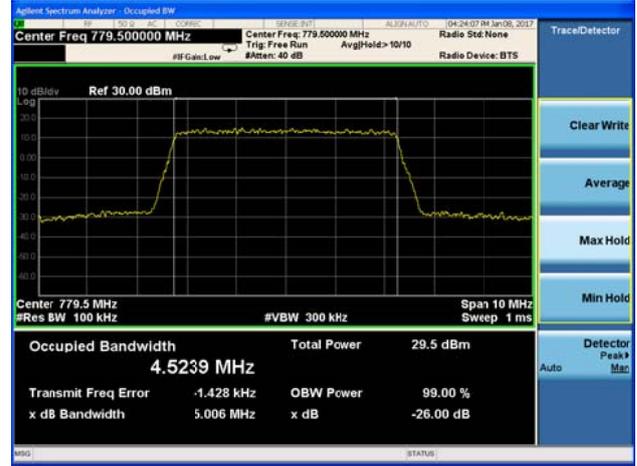
LTE Band 13 16QAM Bandwidth = 5MHz
CH23255 Occupied Bandwidth



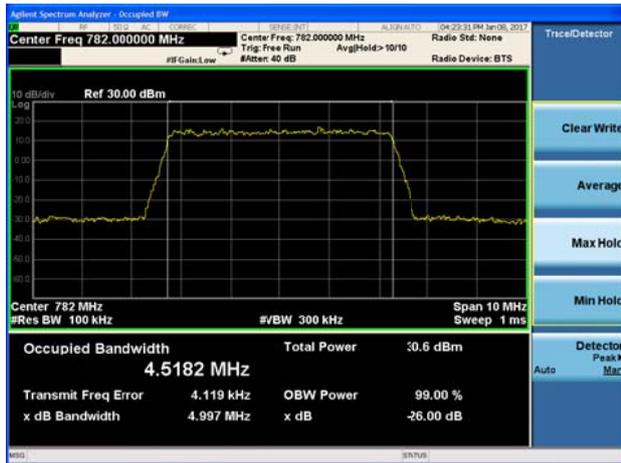
LTE Band 13 QPSK Bandwidth = 10MHz
CH23230 Occupied Bandwidth



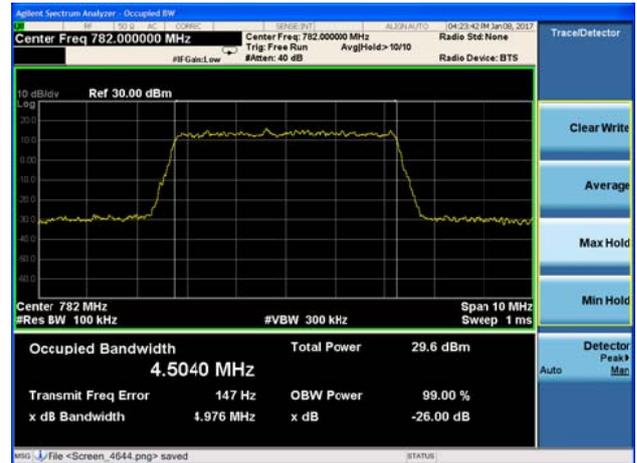
LTE Band 13 16QAM Bandwidth = 10MHz
CH23230 Occupied Bandwidth



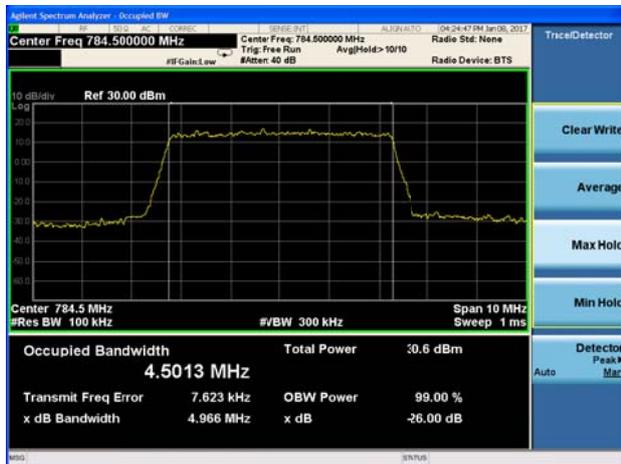
LTE Band 13 QPSK Bandwidth = 10MHz
CH23230 Occupied Bandwidth



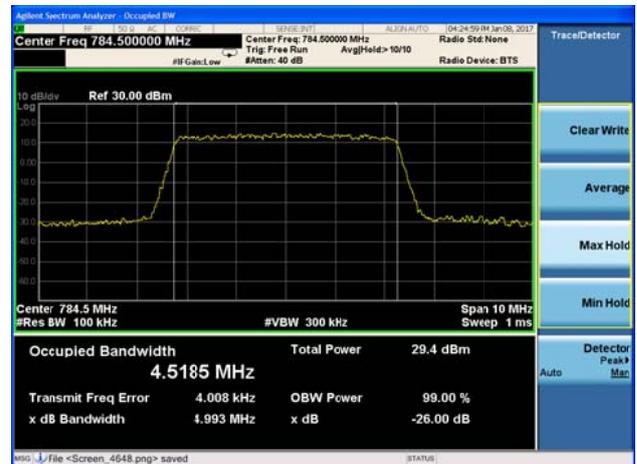
LTE Band 13 16QAM Bandwidth = 10MHz
CH23230 Occupied Bandwidth



LTE Band 13 QPSK Bandwidth = 10MHz
CH23230 Occupied Bandwidth



LTE Band 13 16QAM Bandwidth = 10MHz
CH23230 Occupied Bandwidth



5.4 Band Edge Compliance

Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

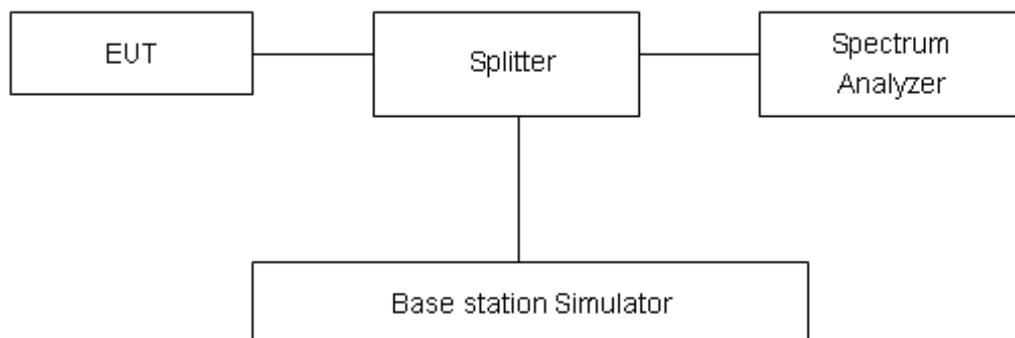
Method of Measurement

The EUT was connected to Spectrum Analyzer and Base Station Simulator via power Splitter. The band edge of the lowest and highest channels were measured.

The testing follows KDB 971168 v02r02 Section 6.0

- 1.The EUT was connected to spectrum analyzer and system simulator via a power divider.
2. The band edges of low and high channels for the highest RF powers were measured.
- 3.RBW is set to 15 kHz, VBW is set to 51 kHz for LTE Band 4/12 (1.4MHz).
RBW is set to 30 kHz, VBW is set to 100 kHz for LTE Band 4/12 (3MHz).
RBW is set to 51 kHz, VBW is set to 160 kHz for LTE Band 4/7/12/13 (5MHz).
RBW is set to 100 kHz, VBW is set to 300kHz for LTE Band 4/7/12/13 (10MHz).
RBW is set to 150 kHz, VBW is set to 510 kHz for LTE Band 4/7 (15MHz).
RBW is set to 200 kHz, VBW is set to 620 kHz for LTE Band 4/7 (20MHz) on spectrum analyzer.
4. Set spectrum analyzer with RMS detector.
5. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
6. Checked that all the results comply with the emission limit line.

Test Setup



Limits

1).Rule Part 27.53(h)/ specifies that “for operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz, 1915-1920 MHz, 1995-2000 MHz, 2000-2020 MHz, 2110-2155 MHz, 2155-2180 MHz, and 2180-2200 bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log_{10} (P)$ dB”

2).Part 27.53(g) specifies that “ For operations in the 600 MHz band and the 698-746 MHz band, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least $43 + 10 \log_{10} (P)$ dB.”

3).Part 27.53(m) (4)/ specifies that “for BRS and EBS stations.

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)(4) 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.

Example:

The limit line is derived from $43 + 10 \log (P)$ dB below the transmitter power P(Watts)

= $P(W) - [43 + 10 \log(P)]$ (dB)

= $[30 + 10 \log (P)]$ (dBm) - $[43 + 10 \log(P)]$ (dB) = -13dBm.

4).Part 27.53(c) (2) On any frequency outside the 776-788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least $43 + 10 \log (P)$ dB;

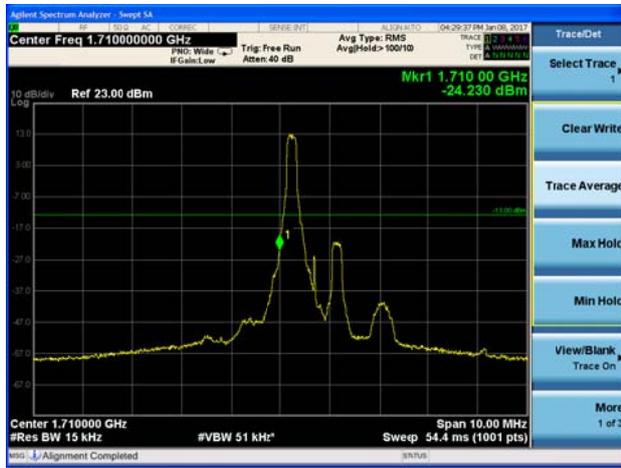
Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 1.96$, $U=0.684$ dB.

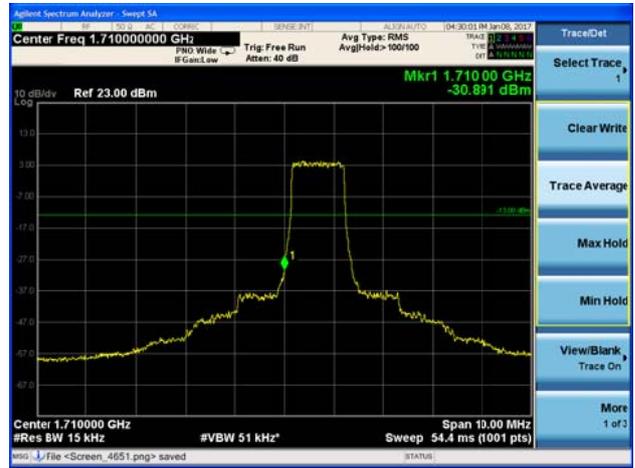
Test Result

All the test traces in the plots shows the test results clearly.

LTE Band 4 QPSK Bandwidth = 1.4MHz
CH19957, RB 1



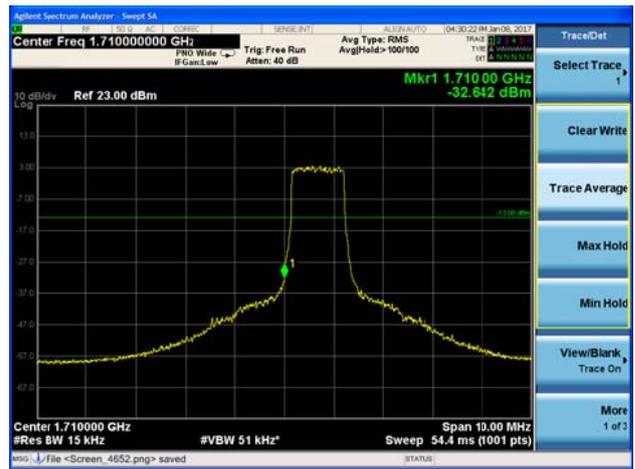
LTE Band 4 QPSK Bandwidth = 1.4MHz
CH19957, RB 6



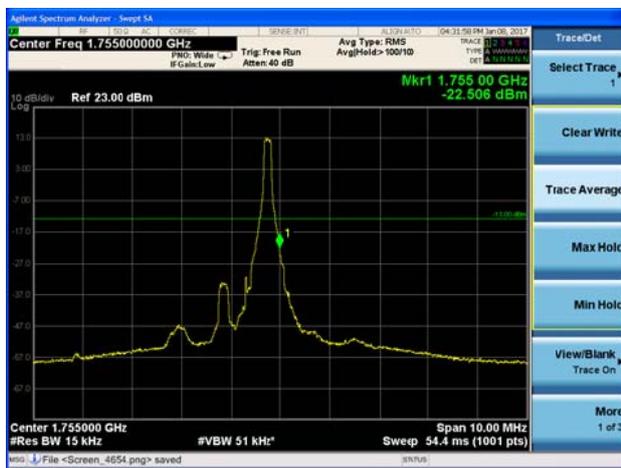
LTE Band 4 16QAM Bandwidth = 1.4MHz
CH19957, RB 1



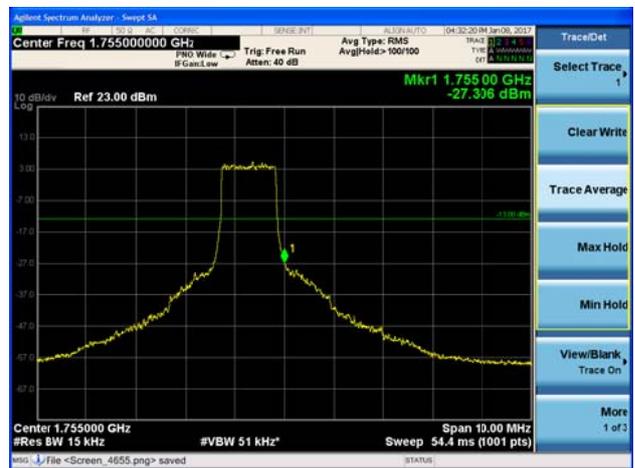
LTE Band 4 16QAM Bandwidth = 1.4MHz
CH19957, RB 6



LTE Band 4 QPSK Bandwidth = 1.4MHz
CH20393, RB 1

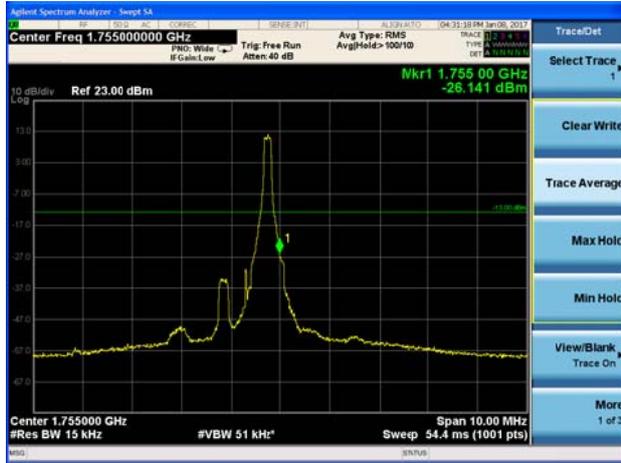


LTE Band 4 QPSK Bandwidth = 1.4MHz
CH20393, RB 6

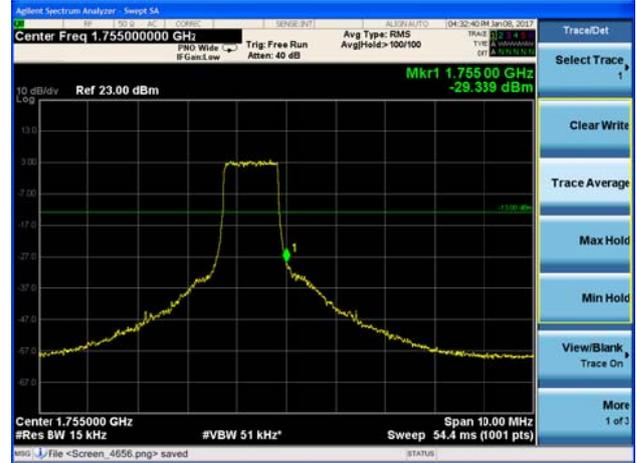




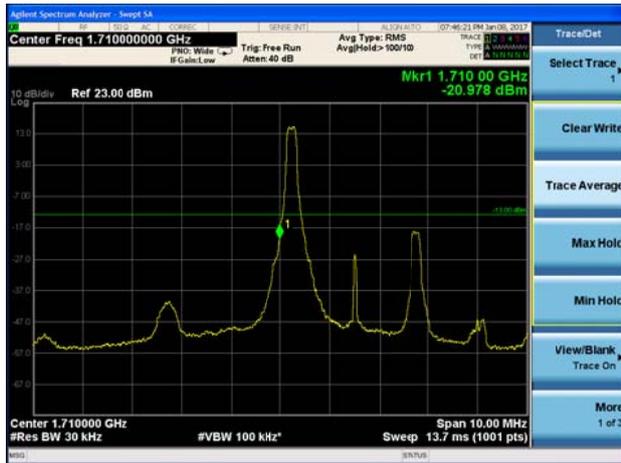
LTE Band 4 16QAM Bandwidth = 1.4MHz
CH20393, RB 1



LTE Band 4 16QAM Bandwidth = 1.4MHz
CH20393, RB 6



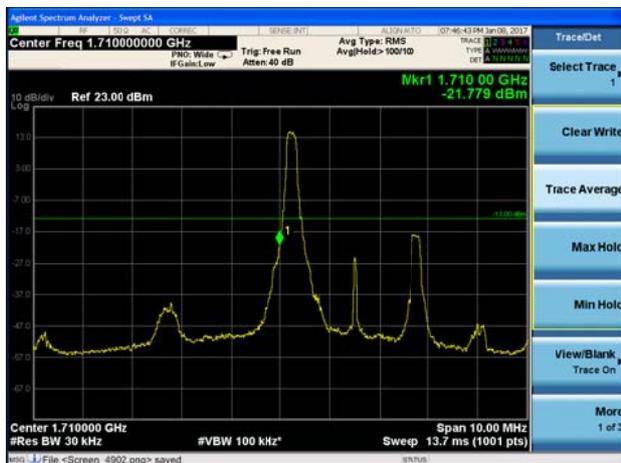
LTE Band 4 QPSK Bandwidth = 3MHz CH19965,
RB 1



LTE Band 4 QPSK Bandwidth = 3MHz CH19965,
RB 15



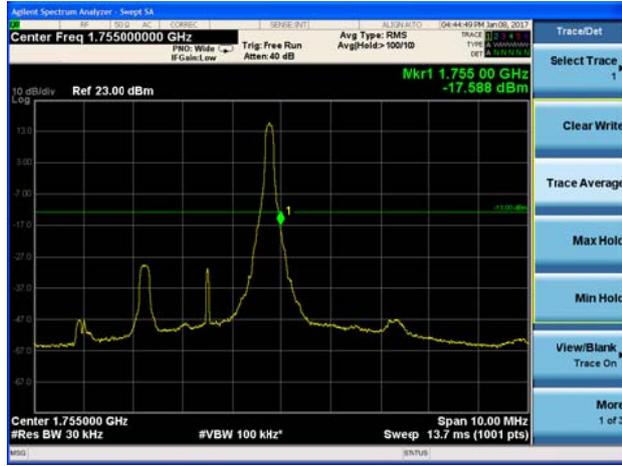
LTE Band 4 16QAM Bandwidth = 3MHz
CH19965, RB 1



LTE Band 4 16QAM Bandwidth = 3MHz
CH19965, RB 15



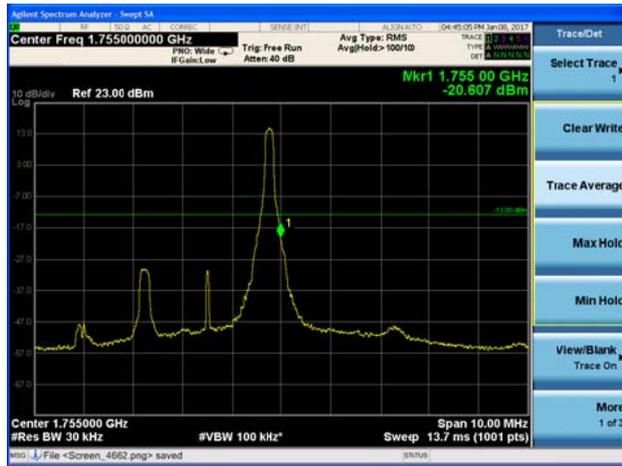
LTE Band 4 QPSK Bandwidth = 3MHz CH20385,
RB 1



LTE Band 4 QPSK Bandwidth = 3MHz CH20385,
RB 15



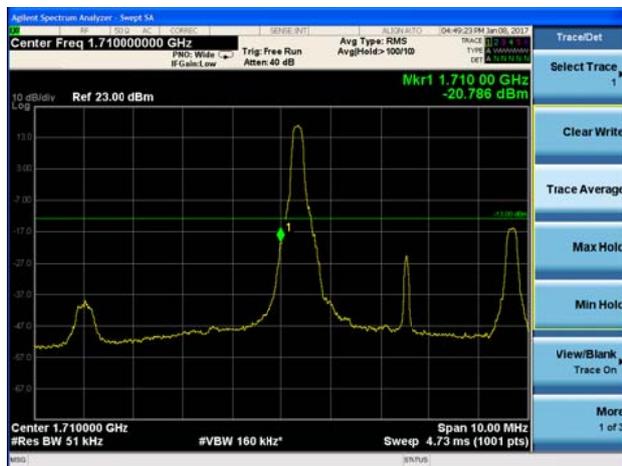
LTE Band 4 16QAM Bandwidth = 3MHz
CH20385, RB 1



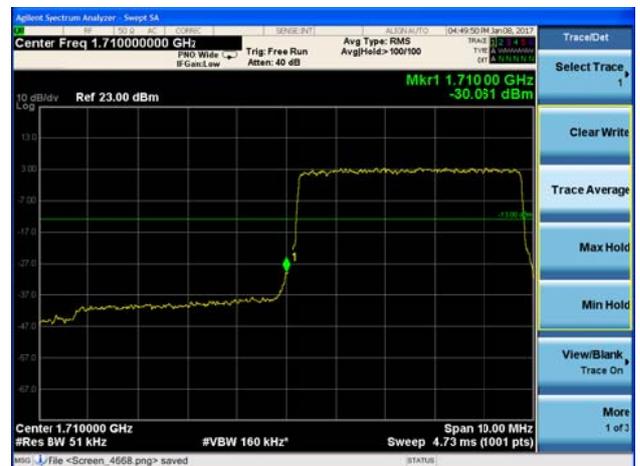
LTE Band 4 16QAM Bandwidth = 3MHz
CH20385, RB 15



LTE Band 4 QPSK Bandwidth = 5MHz CH19975,
RB 1

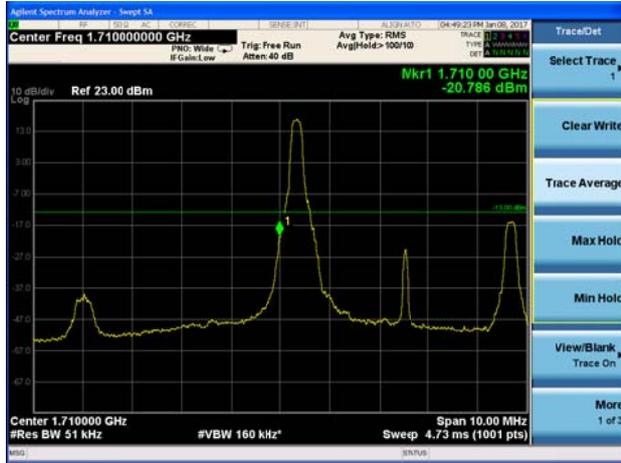


LTE Band 4 QPSK Bandwidth = 5MHz CH19975,
RB 25





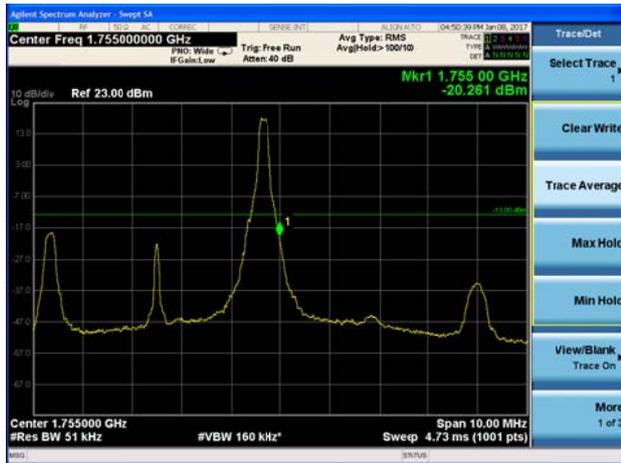
LTE Band 4 16QAM Bandwidth = 5MHz
CH19975, RB 1



LTE Band 4 16QAM Bandwidth = 5MHz
CH19975, RB 25



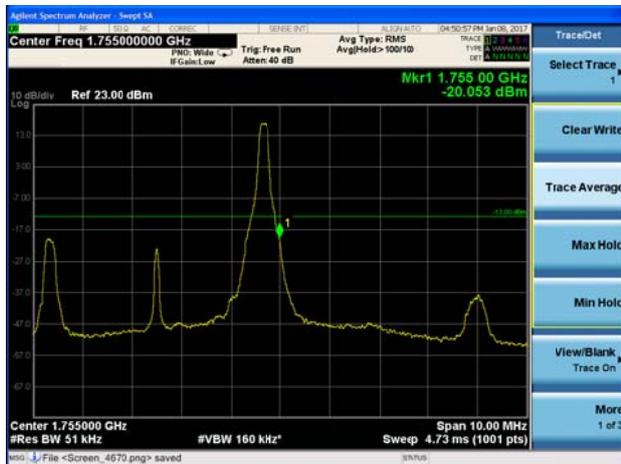
LTE Band 4 QPSK Bandwidth = 5MHz CH20375,
RB 1



LTE Band 4 QPSK Bandwidth = 5MHz CH20375,
RB 25



LTE Band 4 16QAM Bandwidth = 5MHz
CH20375, RB 1

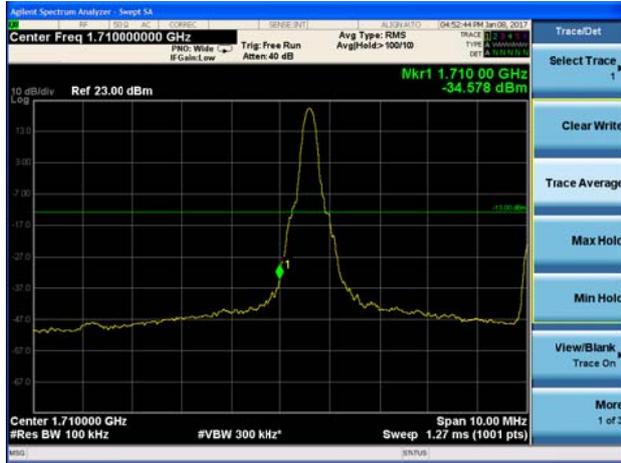


LTE Band 4 16QAM Bandwidth = 5MHz
CH20375, RB 25

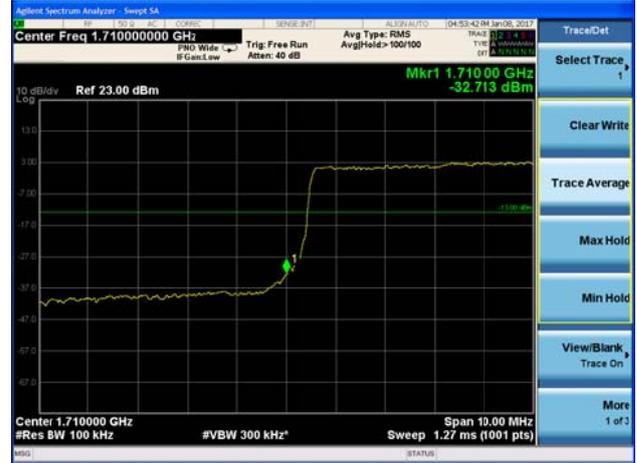




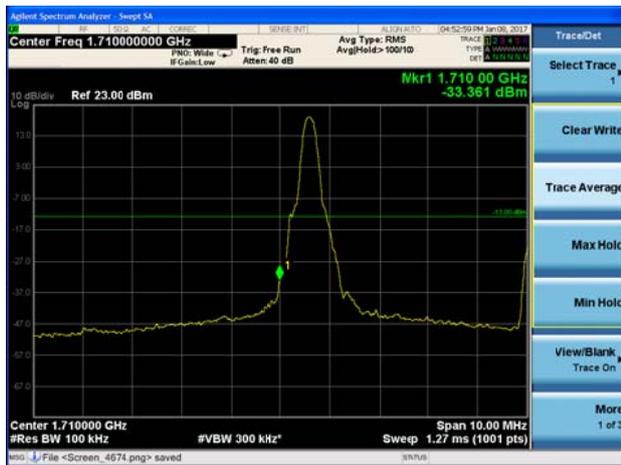
LTE Band 4 QPSK Bandwidth = 10MHz
CH20000, RB 1



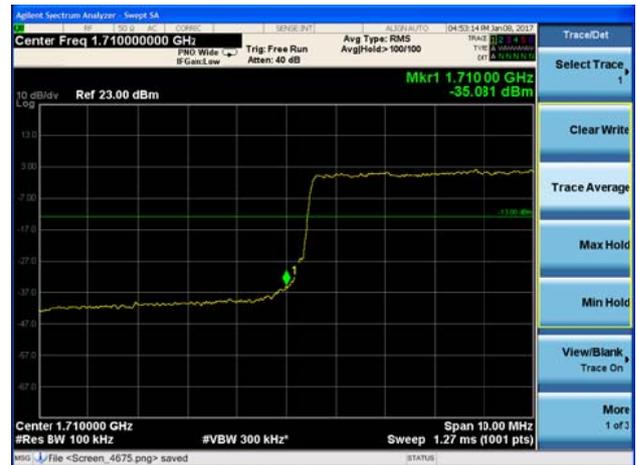
LTE Band 4 QPSK Bandwidth = 10MHz
CH20000, RB 50



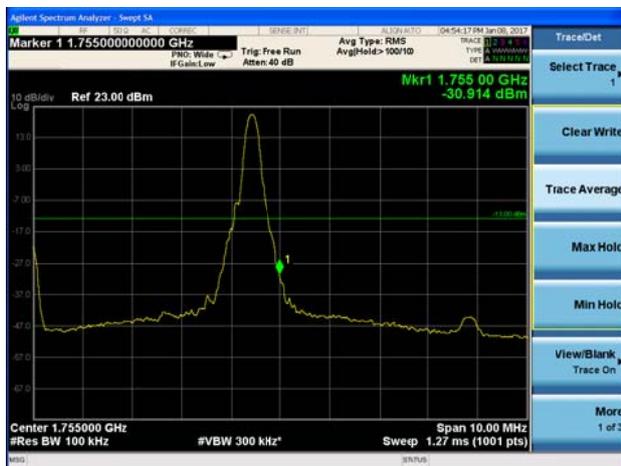
LTE Band 4 16QAM Bandwidth = 10MHz
CH20000, RB 1



LTE Band 4 16QAM Bandwidth = 10MHz
CH20000, RB 50



LTE Band 4 QPSK Bandwidth = 10MHz
CH20350, RB 1

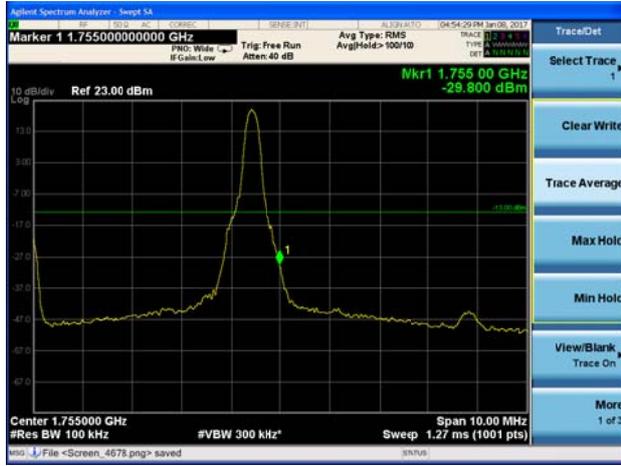


LTE Band 4 QPSK Bandwidth = 10MHz
CH20350, RB 50





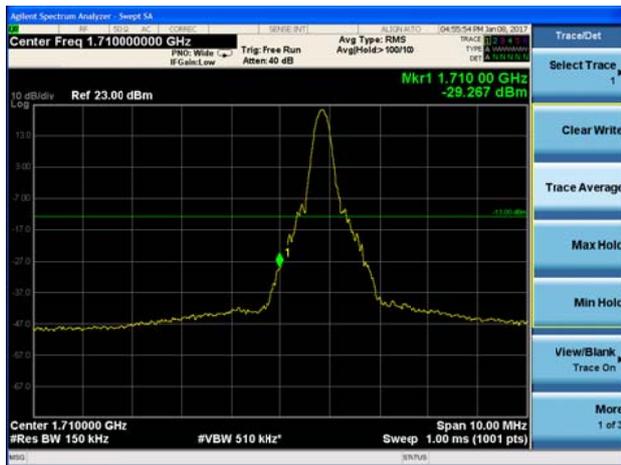
LTE Band 4 16QAM Bandwidth = 10MHz
CH20350, RB 1



LTE Band 4 16QAM Bandwidth = 10MHz
CH20350, RB 50



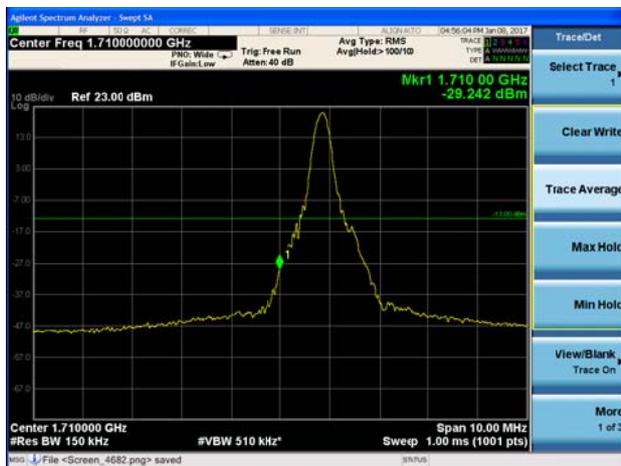
LTE Band 4 QPSK Bandwidth = 15MHz
CH20025, RB 1



LTE Band 4 QPSK Bandwidth = 15MHz
CH20025, RB 75



LTE Band 4 16QAM Bandwidth = 15MHz
CH20025, RB 1

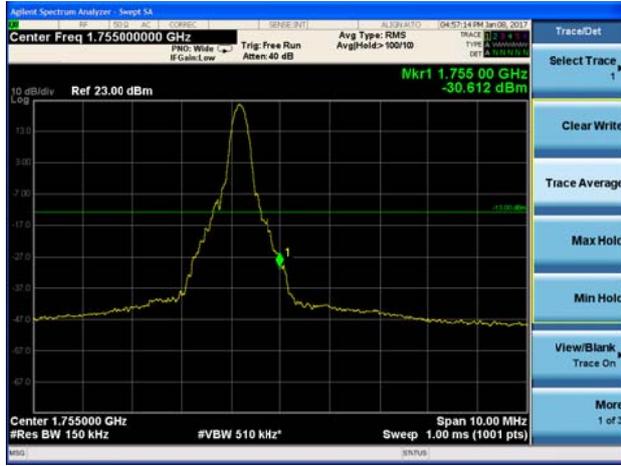


LTE Band 4 16QAM Bandwidth = 15MHz
CH20025, RB 75





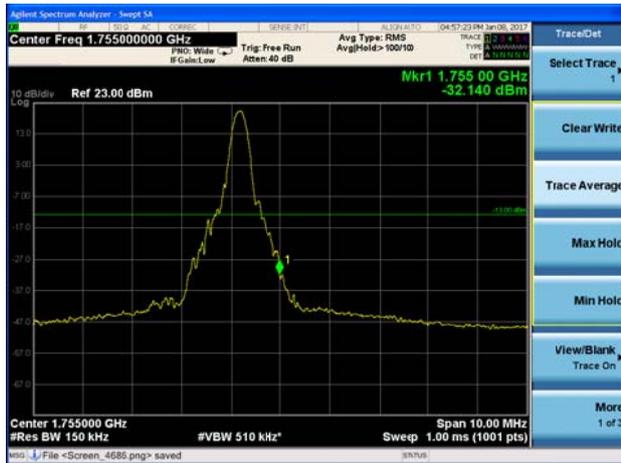
LTE Band 4 QPSK Bandwidth = 15MHz
CH20325, RB 1



LTE Band 4 QPSK Bandwidth = 15MHz
CH20325, RB 75



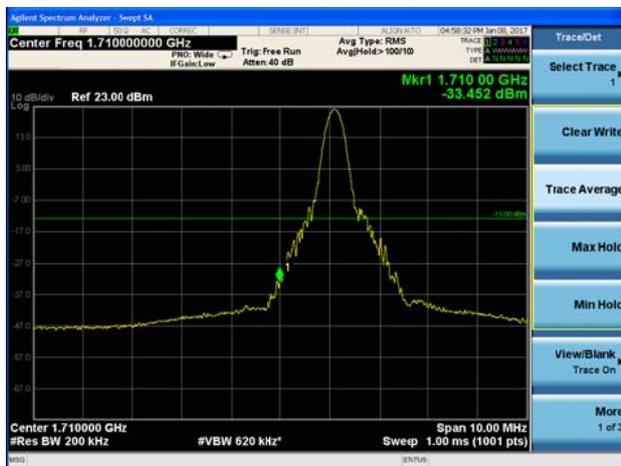
LTE Band 4 16QAM Bandwidth = 15MHz
CH20325, RB 1



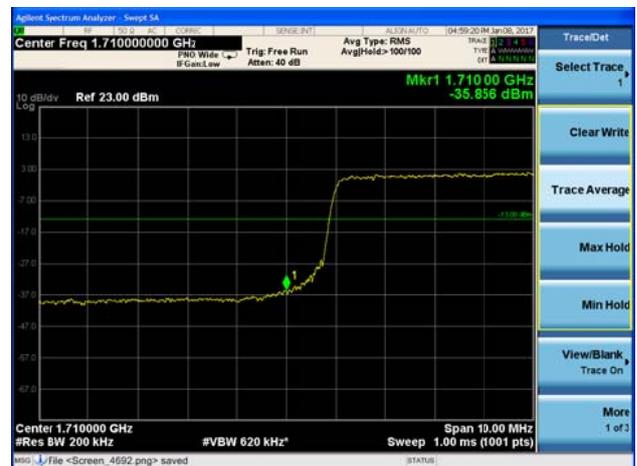
LTE Band 4 16QAM Bandwidth = 15MHz
CH20325, RB 75



LTE Band 4 QPSK Bandwidth = 20MHz
CH20050, RB 1



LTE Band 4 QPSK Bandwidth = 20MHz
CH20050, RB 100





LTE Band 4 16QAM Bandwidth = 20MHz
CH20050, RB 1



LTE Band 4 16QAM Bandwidth = 20MHz
CH20050, RB 100



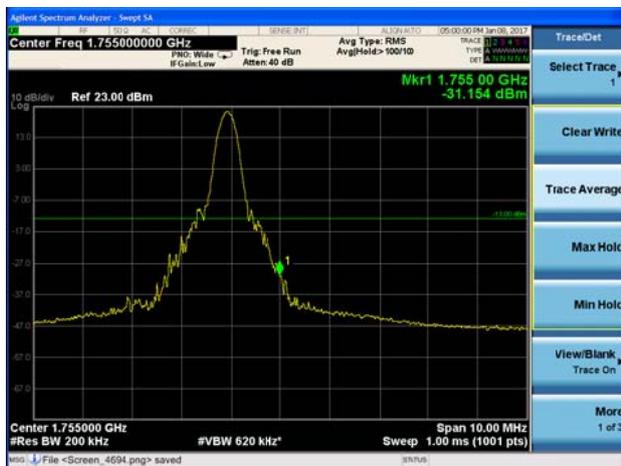
LTE Band 4 QPSK Bandwidth = 20MHz
CH20300, RB 1



LTE Band 4 QPSK Bandwidth = 20MHz
CH20300, RB 100



LTE Band 4 16QAM Bandwidth = 20MHz
CH20300, RB 1



LTE Band 4 16QAM Bandwidth = 20MHz
CH20300, RB 100

