FCC Report (LTE)

Applicant:	M-Labs Technologies, LLC
Address of Applicant:	4740 Von Karman,Suite150, Newport Beach, California 92660, United States
Manufacturer:	Asiatelco Technologies Co.
Address of Manufacturer:	#289 Bisheng Road, Building-8, 3F, Zhangjiang Hi-Tech Park, Pudong, Shanghai, 201204 China

Equipment Under Test (EUT)

Product Name:	GPS Tracker
Model No.:	LN-L
Marketing Name:	LN-L 001
FCC ID:	2AAQ6LN01A
Applicable standards:	FCC CFR Title 47 Part 2 FCC CFR Title 47 Part 24 FCC CFR Title 47 Part 27
Date of sample receipt:	May 17, 2018
Date of Test:	May 18-29, 2018
Date of report issued:	May 30, 2018
Test Result :	PASS *

* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:

Robinson Lo
Laboratory Manager

2 Version

Version No.	Date	Description
00	*May 30, 2018*	*Original*

Prepared By: Bill. Yuan ***Date:*** *May 30, 2018*

Project Engineer

Check By: Andy. Wu ***Date:*** *May 30, 2018*

Reviewer

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4 Test Summary

Test Item	Section in CFR 47	Result
RF Exposure (SAR)	Part 1.1307 Part 2.1093	Passed (Please refer to MPE)
Conducted Output Power	Part 2.1046 Part 24.232 (c) Part 27.50(c)(10)/(d)(4)	Pass
Modulation Characteristics	Part 2.1047	N/A
99% & -26 dB Occupied Bandwidth	Part 2.1049 Part 24.238 Part 27.53(h)/(g)	Pass
Spurious Emissions at Antenna Terminal	Part 2.1051 Part 24.238 (a) Part 27.53(h)/(g)	Pass
Field Strength of Spurious Radiation	Part 2.1053 Part 24.238 (a) Part 27.53(h)/(g)	Pass
Out of band emission, Band Edge	Part 24.238 (a) Part 27.53(h)/(g)	Pass
Frequency stability vs. temperature	Part 2.1055(a)(1)(b)	Pass
Frequency stability vs. voltage	Part 2.1055(d)(1)(2)	Pass

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

N/A: Not applicable.

5 General Information

5.1 General Description of EUT

Product Name:	GPS Tracker
Model No.:	LN-L
S/N:	AS2050019160
Tested Sample(s) ID:	GTS201805000089-1
Hardware Version:	P1.3
Software Version:	1.0.1
Support Networks:	LTE
Support Bands:	LTE Band 2, LTE Band 4, LTE Band 12
Channel Bandwidth:	LTE Band 2: 1.4MHz; 3MHz; 5MHz; 10MHz; 15MHz; 20MHz LTE Band 4: 1.4MHz; 3MHz; 5MHz; 10MHz; 15MHz; 20MHz LTE Band 12: 1.4MHz; 3MHz; 5MHz; 10MHz
TX Frequency:	LTE Band 2: 1850.70MHz-1909.30MHz LTE Band 4: 1710.70MHz-1754.30MHz LTE Band 12: 699.70MHz-715.30MHz
Modulation type:	LTE Band 2/4/12: QPSK, 16QAM
Antenna type:	Integral antenna
Antenna gain:	LTE Band 2/4/12: 1.0dBi(max)
Power supply:	Input: DC 10V to 14V (nominal: DC 12V) Polymer Li-ion Battery: DC 3.7V, 80mAh

Operation Frequency List:

Band 2					
Bandwidth	Channel	Frequency（MHz）	Bandwidth	Channel	Frequency（MHz）
1.4MHz	18607	1850.7	3MHz	18615	1851.5
	:	:		:	:
	18900	1880.0		18900	1880.0
	:	:		:	:
	19193	1909.3		19185	1908.5
5MHz	18625	1852.5	10MHz	18650	1855
	:	:		:	:
	18900	1880.0		18900	1880.0
	:	:		:	:
	19175	1907.5		19150	1905.0
15MHz	18675	1857.5	20MHz	18700	1860.0
	:	:		:	:
	18900	1880.0		18900	1880.0
	:	:		:	:
	19125	1902.5		19100	1900.0

Band 4					
Bandwidth	Channel	Frequency（MHz）	Bandwidth	Channel	Frequency（MHz）
1.4MHz	19957	1710.7	3MHz	19965	1711.5
	:	:		:	:
	20175	1732.5		20175	1732.5
	:	:		:	:
	20393	1754.3		20385	1753.5
5MHz	19975	1712.5	10MHz	20000	1715.0
	:	:		:	:
	20175	1732.5		20175	1732.5
	:	:		:	:
	20375	1752.5		20350	1750.0
15MHz	20025	1717.5	20MHz	20050	1720.0
	:	:		:	:
	20175	1732.5		20175	1732.5
	:	:		:	:
	20325	1747.5		20300	1745.0

Band 12					
Bandwidth	Channel	Frequency（MHz）	Bandwidth	Channel	Frequency（MHz）
1.4MHz	23017	699.7	3MHz	23025	700.5
	⋮	⋮		⋮	⋮
	23095	707.5		23095	707.5
	⋮	⋮		⋮	⋮
	23173	715.3		23165	714.5
5MHz	23035	701.5	10MHz	23060	704.0
	⋮	⋮		⋮	⋮
	23095	707.5		23095	707.5
	⋮	⋮		⋮	⋮
	23155	713.5		23130	711.0

5.2 Related Submittal(s) / Grant (s)

This submittal(s) (test report) is filing to comply with Section Part 27 of the FCC CFR 47 Rules.

5.3 Test Methodology

Both conducted and radiated testing were performed according to the procedures document on ANSI C63.26:2015 and FCC CFR 47.1046, 2.1047, 2.1049, 2.1051, 2.1053, 2.1055 and 2.1057

5.4 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

● **FCC —Registration No.: 381383**

Global United Technology Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fuly described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in files. Registration 381383, January 08, 2018.

● **Industry Canada (IC) —Registration No.: 9079A-2**

The 3m Semi-anechoic chamber of Global United Technology Services Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 9079A-2, August 15, 2016.

5.5 Test Location

All tests were performed at:

Global United Technology Services Co., Ltd.

Address: No. 301-309, 3/F., Jinyuan Business Building, No.2, Laodong Industrial Zone, Xixiang Road, Baoan District, Shenzhen, Guangdong, China 518102

Tel: 0755-27798480

Fax: 0755-27798960

6 Test Instruments list

Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	3m Semi- Anechoic Chamber	ZhongYu Electron	9.0(L)*6.0(W)* 6.0(H)	GTS250	July 03 2015	July 02 2020
2	Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	GTS251	N/A	N/A
3	EMI Test Receiver	Rohde & Schwarz	ESU26	GTS203	June 28 2017	June 27 2018
4	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	GTS214	June 28 2017	June 27 2018
5	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	9120D-829	GTS208	June 28 2017	June 27 2018
6	Horn Antenna	ETS-LINDGREN	3160	GTS217	June 28 2017	June 27 2018
7	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
8	Coaxial Cable	GTS	N/A	GTS213	June 28 2017	June 27 2018
9	Coaxial Cable	GTS	N/A	GTS211	June 28 2017	June 27 2018
10	Coaxial cable	GTS	N/A	GTS210	June 28 2017	June 27 2018
11	Coaxial Cable	GTS	N/A	GTS212	June 28 2017	June 27 2018
12	Amplifier(100kHz-3GHz)	HP	8347A	GTS204	June 28 2017	June 27 2018
13	Amplifier(2GHz-20GHz)	HP	8349B	GTS206	June 28 2017	June 27 2018
14	Amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	June 28 2017	June 27 2018
15	Band filter	Amindeon	82346	GTS219	June 28 2017	June 27 2018
16	Universal radio communication tester	Rohde & Schwarz	CMU200	GTS235	June 28 2017	June 27 2018
17	Signal Generator	Rohde & Schwarz	SML03	GTS236	June 28 2017	June 27 2018
18	Temp. Humidity/ Barometer	Oregon Scientific	BA-888	GTS248	June 28 2017	June 27 2018
19	D.C. Power Supply	Instek	PS-3030	GTS232	June 28 2017	June 27 2018
20	Splitter	Agilent	11636B	GTS237	June 28 2017	June 27 2018
21	Power meter	Anritsu	ML2495A	GTS540	June 28 2017	June 27 2018
22	Power Sensor	Anritsu	MA2411B	GTS541	June 28 2017	June 27 2018
23	Spectrum Analyzer	Agilent	E4440A	GTS533	June 28 2017	June 27 2018
24	Temp.&Humidity chamber	Chuang wei	GDS-225	GTS005-1	June 28 2017	June 27 2018
25	Highpass filter	Micro-Tronics	HPM50108	GTS549	June 28 2017	June 27 2018
26	Highpass filter	Micro-Tronics	HPM50111	GTS550	June 28 2017	June 27 2018

General used equipment:						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	Barometer	ChangChun	DYM3	GTS257	Jun. 28 2017	Jun. 27 2018

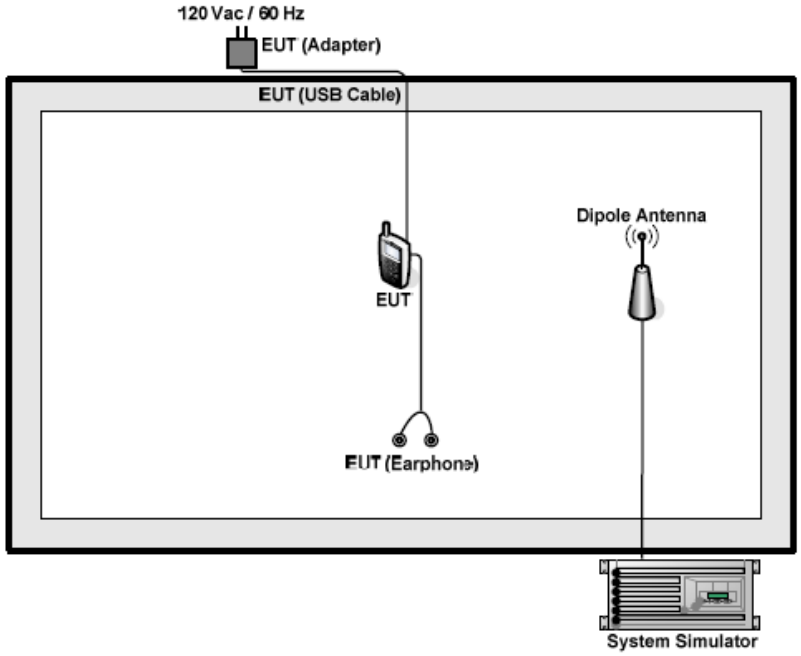
7 System test configuration

7.1 Test mode

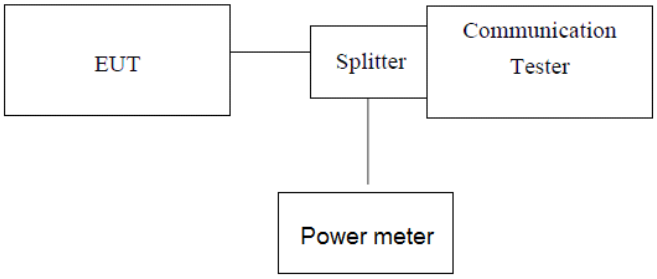
During all testing, EUT is in link mode with base station emulator at maximum power level. The spurious emission measurements were carried out in semi-anechoic chamber with 3-meter test range, and EUT is rotated on three test planes to find out the worst emission.

Test modes		
Band	Radiated	Conducted
LTE Band 2	■ QPSK and 16QAM link	■ QPSK and 16QAM link
LTE Band 4	■ QPSK and 16QAM link	■ QPSK and 16QAM link
LTE Band 12	■ QPSK and 16QAM link	■ QPSK and 16QAM link

7.2 Configuration of Tested System



7.3 Conducted Output Power

Test Requirement:	Part 24.232 (c); Part 27.50(c)(10)/(d)(4)
Test Method:	FCC part2.1046
Limit:	LTE Band 2: 2W LTE Band 4: 1W LTE Band 12: 3W
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 6.0 for details
Test mode:	Refer to section 7.1 for details
Test results:	Pass

Measurement Data

Band 2						
Bandwidth	Mode	RB Size	RB Offset	Actual output power(dBm)		
				Channel 18607 1850.7MHz	Channel 18900 1880.0MHz	Channel 19193 1909.3MHz
1.4MHz	QPSK	1	0	21.17	21.10	21.25
		1	2	21.49	21.34	21.45
		1	5	21.65	21.71	21.86
		3	0	21.44	21.29	21.67
		3	1	21.26	21.15	21.36
		3	2	20.79	20.94	21.23
		6	0	21.54	21.77	21.51
	16QAM	1	0	21.07	20.94	21.13
		1	2	20.72	20.56	20.78
		1	5	21.48	21.40	21.30
		3	0	21.41	21.28	21.33
		3	1	21.24	21.29	21.18
		3	2	21.41	21.48	21.74
		6	0	21.04	21.05	20.88
Bandwidth	Mode	RB Size	RB Offset	Actual output power(dBm)		
				Channel 18615 1851.5MHz	Channel 18900 1880.0MHz	Channel 19185 1908.5MHz
3MHz	QPSK	1	0	22.09	21.70	21.38
		1	8	20.55	20.66	21.20
		1	14	21.38	20.56	20.89
		8	0	20.88	20.68	20.57
		8	4	21.02	21.14	21.24
		8	7	20.79	21.08	20.32
		15	0	20.73	21.03	20.74
	16QAM	1	0	20.97	20.75	21.08
		1	8	21.26	21.02	20.78
		1	14	21.73	21.45	21.46
		8	0	21.28	21.08	20.78
		8	4	20.85	20.38	20.54
		8	7	20.76	20.98	21.14
		15	0	21.48	21.46	21.58

Bandwidth	Mode	RB Size	RB Offset	Actual output power(dBm)		
				Channel 18625 1852.5MHz	Channel 18900 1880.0MHz	Channel 19175 1907.5MHz
5MHz	QPSK	1	0	21.25	21.18	21.06
		1	13	21.19	20.75	21.06
		1	24	21.22	20.87	21.31
		12	0	20.69	21.00	20.97
		12	6	20.87	21.03	20.55
		12	13	21.11	20.96	21.08
		25	0	21.09	20.95	21.19
	16QAM	1	0	20.49	21.13	20.31
		1	13	20.50	21.06	21.17
		1	24	20.85	21.48	21.51
		12	0	20.52	20.46	20.67
		12	6	20.68	20.87	21.15
		12	13	21.05	21.25	20.43
		25	0	21.28	21.29	21.41
Bandwidth	Mode	RB Size	RB Offset	Actual output power(dBm)		
				Channel 18650 1855.0MHz	Channel 18900 1880.0MHz	Channel 19150 1905.0MHz
10MHz	QPSK	1	0	21.47	21.40	21.45
		1	25	21.21	21.11	21.35
		1	49	21.26	21.10	21.22
		25	0	20.61	21.49	20.64
		25	13	21.48	21.35	21.55
		25	25	21.41	21.36	21.57
		50	0	21.61	21.35	21.62
	16QAM	1	0	20.44	20.83	20.85
		1	25	20.92	20.47	20.42
		1	49	20.98	21.40	20.54
		25	0	20.40	21.27	20.46
		25	13	21.17	20.95	21.08
		25	25	21.16	20.93	21.02
		50	0	21.18	21.03	21.05

Bandwidth	Mode	RB Size	RB Offset	Actual output power(dBm)		
				Channel 18675 1857.5MHz	Channel 18900 1880.0MHz	Channel 19125 1902.5MHz
15MHz	QPSK	1	0	21.74	21.69	21.73
		1	38	21.48	21.33	21.55
		1	74	21.19	20.87	21.03
		36	0	20.62	20.47	20.58
		36	18	21.33	21.20	20.45
		36	39	21.24	21.27	20.46
		75	0	20.47	21.34	20.45
	16QAM	1	0	20.78	21.10	20.97
		1	38	21.28	20.67	20.67
		1	74	21.32	20.74	20.61
		36	0	20.48	20.46	20.59
		36	18	20.42	21.18	20.44
		36	39	21.33	21.17	20.75
		75	0	21.26	21.08	20.49
Bandwidth	Mode	RB Size	RB Offset	Actual output power(dBm)		
				Channel 18700 1860.0MHz	Channel 18900 1880.0MHz	Channel 19100 1900.0MHz
20MHz	QPSK	1	0	21.59	21.37	21.63
		1	50	21.28	21.00	21.29
		1	99	20.94	21.14	21.39
		50	0	20.81	21.56	20.79
		50	25	21.52	21.37	21.50
		50	50	20.98	21.11	20.94
		100	0	21.39	21.20	20.47
	16QAM	1	0	21.79	21.43	21.97
		1	50	21.03	21.04	21.31
		1	99	21.08	21.29	21.15
		50	0	20.62	20.61	20.83
		50	25	21.45	21.29	21.38
		50	50	21.18	21.34	21.29
		100	0	20.45	21.23	21.41

Band 4						
Bandwidth	Mode	RB Size	RB Offset	Actual output power(dBm)		
				Channel 19957 1710.7MHz	Channel 20175 1732.5MHz	Channel 20393 1754.3MHz
1.4MHz	QPSK	1	0	21.62	22.13	21.48
		1	2	21.78	21.72	21.62
		1	5	21.99	21.71	21.87
		3	0	21.27	21.29	21.49
		3	1	21.59	21.58	21.53
		3	2	21.57	21.47	21.32
		6	0	21.67	22.02	22.06
	16QAM	1	0	21.69	21.77	21.86
		1	2	21.32	21.45	21.38
		1	5	21.12	21.20	21.27
		3	0	20.86	20.85	20.48
		3	1	20.93	20.94	20.77
		3	2	20.89	20.99	20.60
		6	0	21.13	21.09	20.90
Bandwidth	Mode	RB Size	RB Offset	Actual output power(dBm)		
				Channel 19965 1711.5MHz	Channel 20175 1732.5MHz	Channel 20385 753.5MHz
3MHz	QPSK	1	0	21.50	21.35	20.97
		1	8	21.19	21.02	21.08
		1	14	21.28	21.10	21.29
		8	0	21.38	21.24	21.12
		8	4	21.23	21.18	21.22
		8	7	21.29	21.02	21.15
		15	0	21.37	21.40	21.39
	16QAM	1	0	21.18	20.93	20.75
		1	8	20.98	20.67	21.18
		1	14	20.84	20.86	21.20
		8	0	20.41	20.99	21.12
		8	4	21.06	20.45	21.03
		8	7	21.11	21.06	20.29
		15	0	20.27	21.02	21.15

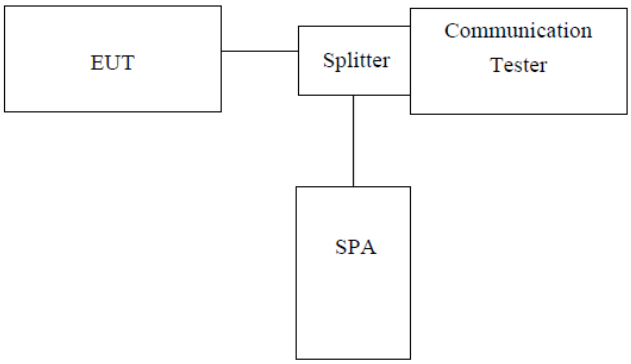
Bandwidth	Mode	RB Size	RB Offset	Actual output power(dBm)		
				Channel 19975 1712.5MHz	Channel 20175 1732.5MHz	Channel 20375 1752.5MHz
5MHz	QPSK	1	0	21.47	21.58	21.65
		1	13	21.65	21.51	21.37
		1	24	20.93	20.99	21.37
		12	0	21.29	21.15	21.30
		12	6	21.34	21.19	21.24
		12	13	21.23	21.12	21.11
		25	0	21.33	21.18	21.27
	16QAM	1	0	21.55	21.39	21.28
		1	13	21.13	20.89	21.01
		1	24	20.60	20.55	20.63
		12	0	20.43	21.30	20.45
		12	6	21.16	21.09	21.16
		12	13	21.62	21.56	21.59
		25	0	21.38	21.18	21.36
Bandwidth	Mode	RB Size	RB Offset	Actual output power(dBm)		
				Channel 20000 1715.0MHz	Channel 20175 1732.5MHz	Channel 20350 1750.0MHz
10MHz	QPSK	1	0	21.44	21.39	21.63
		1	25	20.74	20.40	21.10
		1	49	20.59	20.48	20.53
		25	0	20.42	21.29	21.26
		25	13	20.21	21.07	21.05
		25	25	21.33	21.28	21.24
		50	0	21.18	21.06	21.02
	16QAM	1	0	20.75	20.81	21.15
		1	25	21.20	20.66	21.20
		1	49	20.45	21.35	20.51
		25	0	20.24	21.19	21.06
		25	13	21.29	21.05	21.25
		25	25	20.23	20.35	20.54
		50	0	21.05	21.24	20.87

Bandwidth	Mode	RB Size	RB Offset	Actual output power(dBm)		
				Channel 20025 1717.5MHz	Channel 20175 1732.5MHz	Channel 20325 1747.5MHz
15MHz	QPSK	1	0	21.50	21.57	21.59
		1	38	21.19	20.88	21.12
		1	74	21.03	20.84	20.58
		36	0	20.73	20.54	20.68
		36	18	20.59	20.78	21.03
		36	39	21.17	20.57	20.36
		75	0	21.40	21.03	20.52
	16QAM	1	0	21.25	21.34	21.20
		1	38	20.56	20.75	20.86
		1	74	20.85	20.89	21.12
		36	0	21.45	21.57	21.48
		36	18	20.89	20.54	21.01
		36	39	21.08	21.24	21.33
		75	0	21.20	20.33	20.31
Bandwidth	Mode	RB Size	RB Offset	Actual output power(dBm)		
				Channel 20050 1720.0MHz	Channel 20175 1732.5MHz	Channel 20300 1745.0MHz
20MHz	QPSK	1	0	21.07	21.00	21.12
		1	50	21.05	20.78	20.70
		1	99	21.33	21.35	21.30
		50	0	21.52	21.58	21.44
		50	25	20.54	20.36	20.66
		50	50	20.92	20.79	21.01
		100	0	20.90	20.94	20.69
	16QAM	1	0	21.09	21.33	21.20
		1	50	20.94	20.58	21.12
		1	99	21.44	21.55	21.48
		50	0	20.80	20.91	20.83
		50	25	21.05	21.19	21.13
		50	50	21.33	21.48	20.51
		100	0	21.52	21.70	20.82

Band 12						
Bandwidth	Mode	RB Size	RB Offset	Actual output power(dBm)		
				Channel 23017 699.7MHz	Channel 23095 707.5MHz	Channel 23173 715.3MHz
1.4MHz	QPSK	1	0	21.38	21.44	21.86
		1	2	20.83	21.04	20.78
		1	5	20.75	20.99	20.68
		3	0	20.78	20.93	20.50
		3	1	20.77	20.88	20.75
		3	2	20.83	21.05	20.61
		6	0	20.91	21.03	20.49
	16QAM	1	0	20.74	20.97	20.35
		1	2	20.89	21.04	20.78
		1	5	20.82	21.00	20.64
		3	0	20.90	21.19	20.68
		3	1	20.74	21.08	20.65
		3	2	20.89	21.42	21.07
		6	0	20.76	20.89	20.53
Bandwidth	Mode	RB Size	RB Offset	Actual output power(dBm)		
				Channel 23025 700.5MHz	Channel 23095 707.5MHz	Channel 23165 714.5MHz
3MHz	QPSK	1	0	21.08	21.10	20.85
		1	8	21.38	21.73	21.20
		1	14	20.66	20.92	20.30
		8	0	20.97	21.27	20.44
		8	4	20.58	20.86	20.43
		8	7	21.08	21.46	21.10
		15	0	21.02	21.31	21.07
	16QAM	1	0	21.31	21.84	20.99
		1	8	20.80	21.14	20.98
		1	15	20.89	21.13	20.59
		8	0	20.82	21.08	20.84
		8	4	21.25	21.59	21.25
		8	7	20.97	21.02	20.67
		15	0	20.98	21.33	20.80

Bandwidth	Mode	RB Size	RB Offset	Actual output power(dBm)		
				Channel 23035 701.5MHz	Channel 23095 707.5MHz	Channel 23155 713.5MHz
5MHz	QPSK	1	0	21.18	21.30	21.39
		1	13	20.88	21.08	20.45
		1	24	20.79	20.92	20.49
		12	0	20.88	21.12	20.50
		12	6	21.34	21.49	20.95
		12	13	20.83	20.99	20.43
		25	0	20.99	21.22	20.86
	16QAM	1	0	20.80	20.82	20.39
		1	13	21.05	21.08	20.73
		1	24	20.83	20.98	20.63
		12	0	20.75	21.38	21.23
		12	6	20.74	20.79	20.42
		12	13	20.74	21.18	20.95
		25	0	20.85	21.20	20.83
Bandwidth	Mode	RB Size	RB Offset	Actual output power(dBm)		
				Channel 23060 704.0MHz	Channel 23095 707.5MHz	Channel 23130 711.0MHz
10MHz	QPSK	1	0	21.18	21.04	20.96
		1	25	21.28	21.41	21.07
		1	49	20.63	20.65	20.44
		25	0	21.09	21.24	20.92
		25	13	20.78	20.94	20.79
		25	25	21.07	21.20	20.96
		50	0	20.76	20.96	20.61
	16QAM	1	0	21.07	21.23	21.00
		1	25	20.66	20.79	20.47
		1	49	20.98	21.14	20.99
		25	0	20.79	20.94	20.78
		25	13	21.23	21.35	21.03
		25	25	21.00	21.25	21.03
		50	0	20.89	21.11	20.87

7.4 Peak-to-Average Ratio

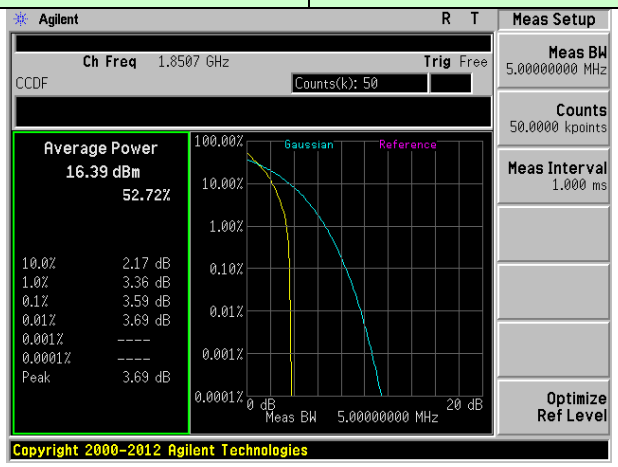
Test Requirement:	Part 27.50(d)(5)
Test Method:	FCC part2.1046
Limit:	13db
Test setup:	 *Note: Measurement setup for testing on Antenna connector*
Test Procedure:	1. The transmitter output port was connected to base station. 2. The RF output of EUT was connected to the power meter by RF cable and attenuator, 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. 6. Record the maximum peak-to-average ratio value.
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 7.1 for details
Test results:	Pass

Remark: Both modulation modes have been tested, showing only the worst QPSK test data.

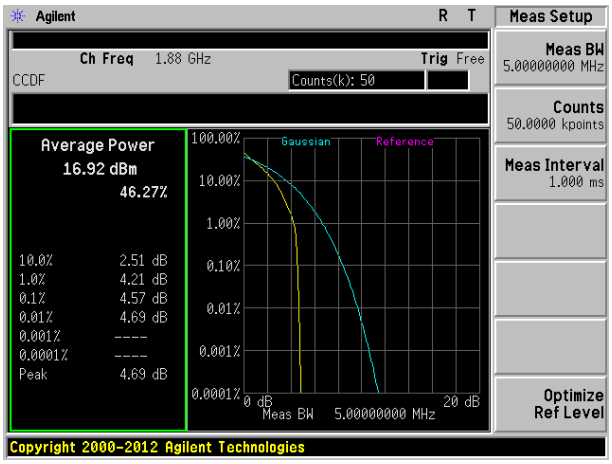
Measurement Data

Test Band	Test mode	Peak to Average Ratio (dB)			Limit (dB)	Result
		Low Ch.	Middle Ch.	High Ch.		
LTE Band 2	LTE 1.4MHz Bandwidth	3.59	4.57	4.19	13	PASS
	LTE 3MHz Bandwidth	3.68	4.65	4.85	13	PASS
	LTE 5MHz Bandwidth	3.58	4.47	4.49	13	PASS
	LTE 10MHz Bandwidth	4.61	4.59	4.61	13	PASS
	LTE 15MHz Bandwidth	5.77	5.77	5.78	13	PASS
	LTE 20MHz Bandwidth	6.60	6.58	6.61	13	PASS
LTE Band 4	LTE 1.4MHz Bandwidth	4.38	5.00	4.99	13	PASS
	LTE 3MHz Bandwidth	4.67	5.00	5.13	13	PASS
	LTE 5MHz Bandwidth	4.85	5.07	5.04	13	PASS
	LTE 10MHz Bandwidth	4.62	4.58	4.59	13	PASS
	LTE 15MHz Bandwidth	5.79	5.77	5.75	13	PASS
	LTE 20MHz Bandwidth	6.56	6.53	6.54	13	PASS
LTE Band 12	LTE 1.4MHz Bandwidth	5.18	5.47	5.11	13	PASS
	LTE 3MHz Bandwidth	5.27	5.59	5.32	13	PASS
	LTE 5MHz Bandwidth	5.18	5.41	5.25	13	PASS
	LTE 10MHz Bandwidth	4.58	4.63	4.68	13	PASS

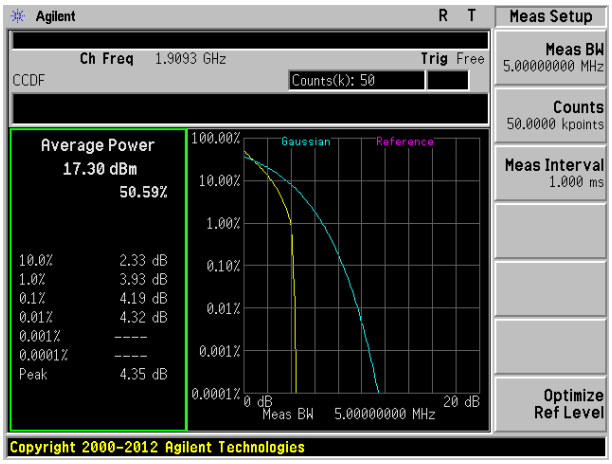
Test band: LTE Band 2	Channel Bandwidth: 1.4MHz



Lowest channel

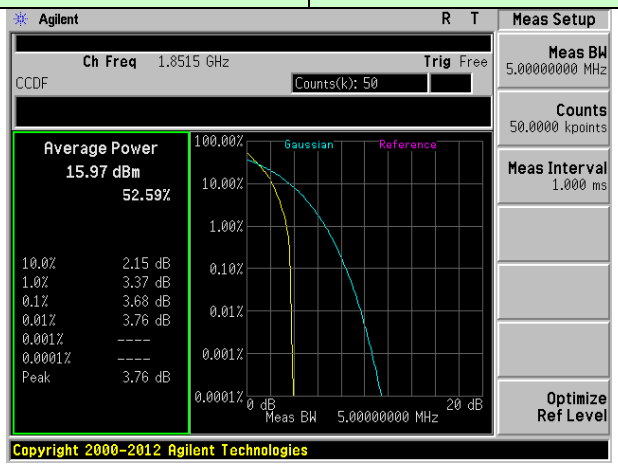


Middle channel

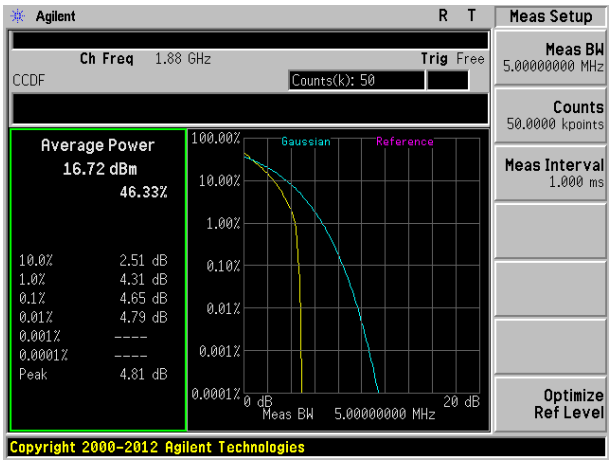


Highest channel

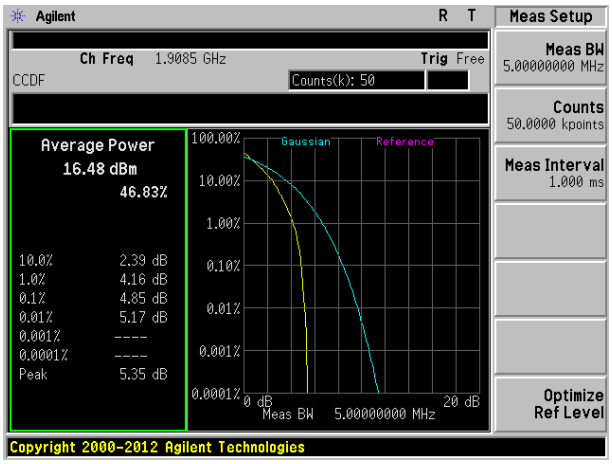
Test band: LTE Band 2	Channel Bandwidth: 3MHz



Lowest channel

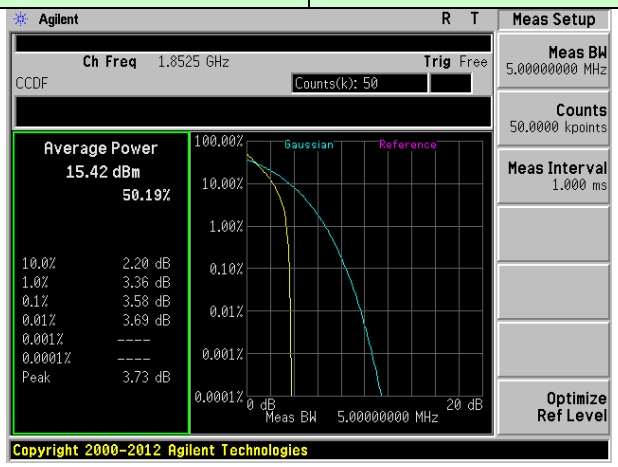


Middle channel

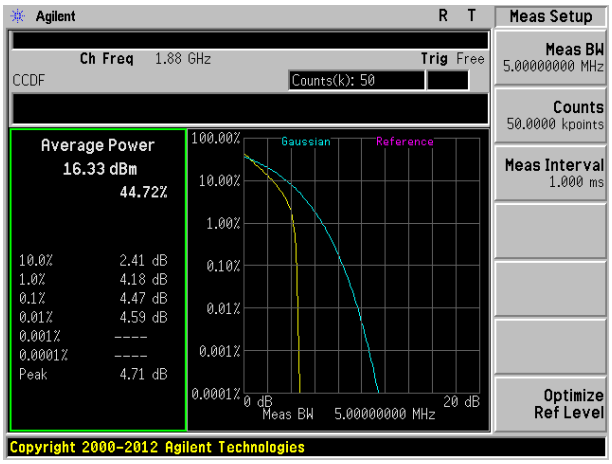


Highest channel

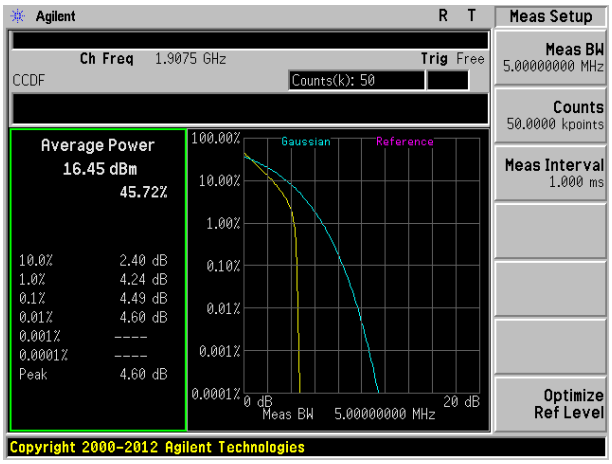
Test band: LTE Band 2	Channel Bandwidth: 5MHz



Lowest channel

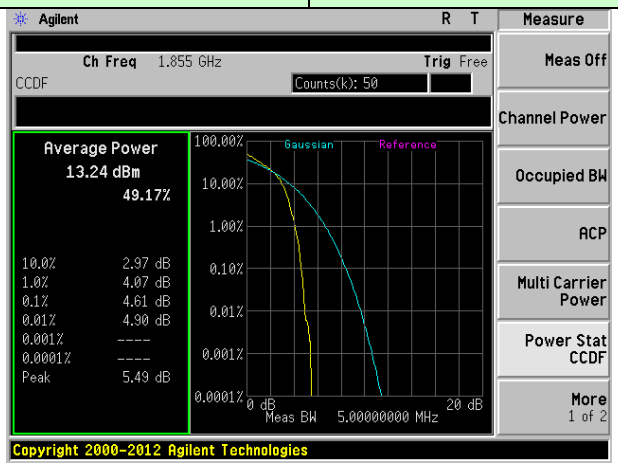


Middle channel

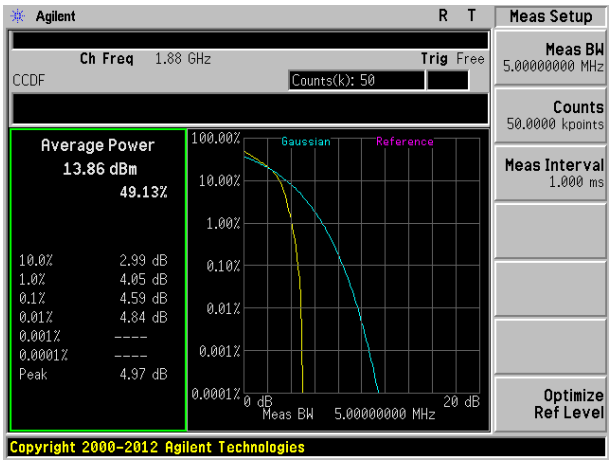


Highest channel

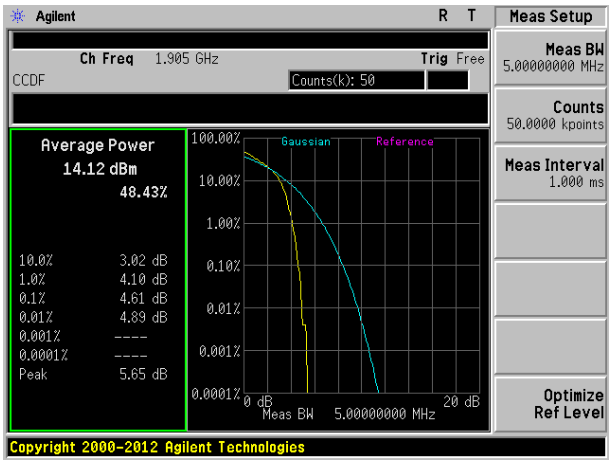
Test band: LTE Band 2	Channel Bandwidth: 10MHz



Lowest channel

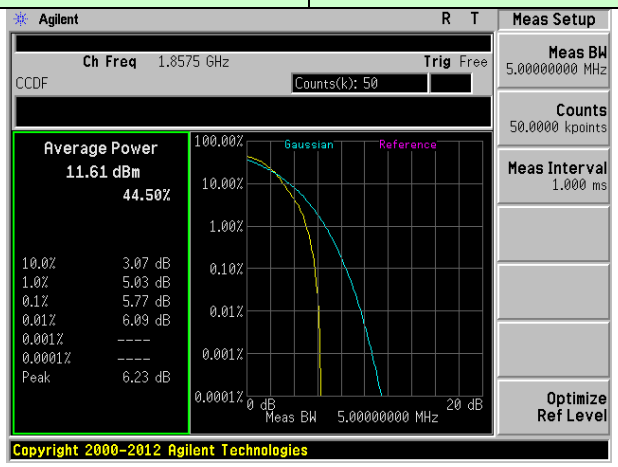


Middle channel

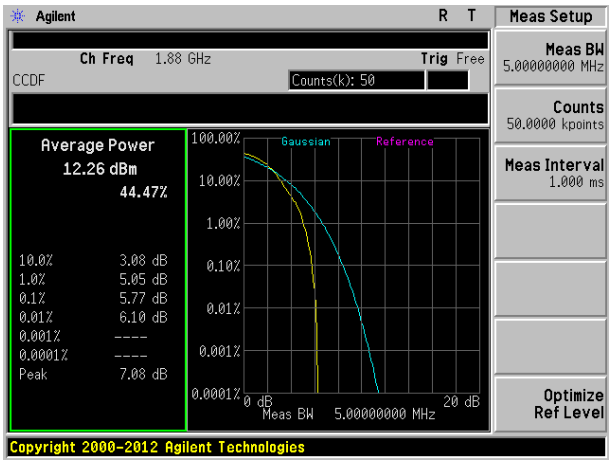


Highest channel

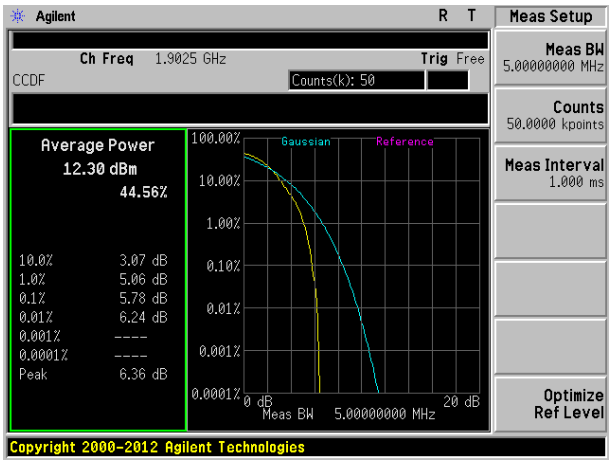
Test band: LTE Band 2	Channel Bandwidth: 15MHz



Lowest channel

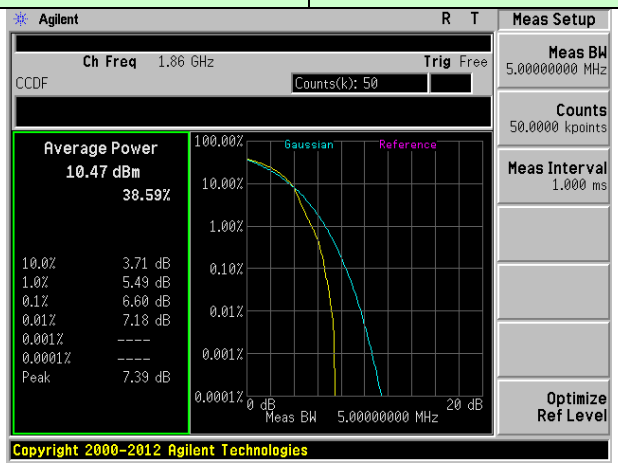


Middle channel

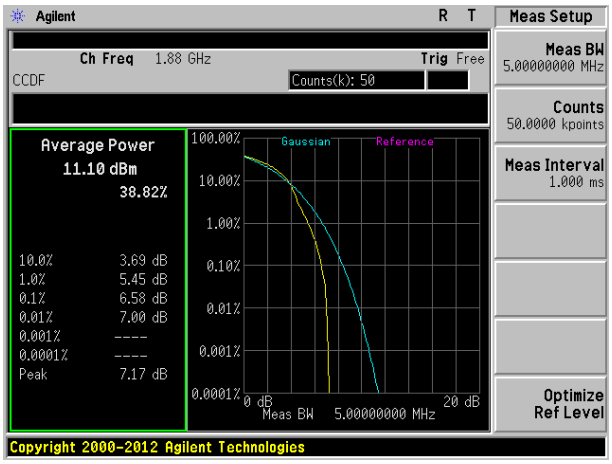


Highest channel

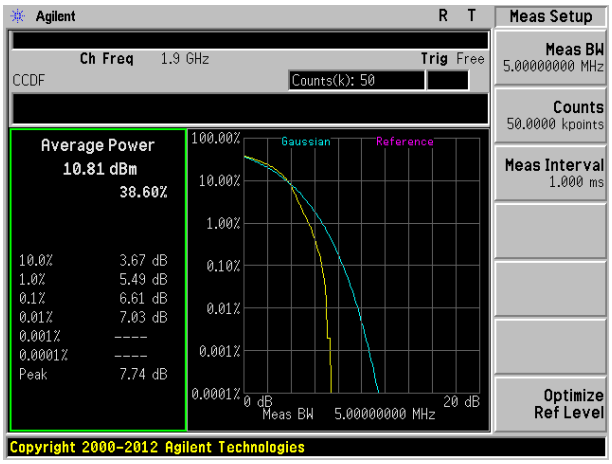
Test band: LTE Band 2	Channel Bandwidth: 20MHz



Lowest channel

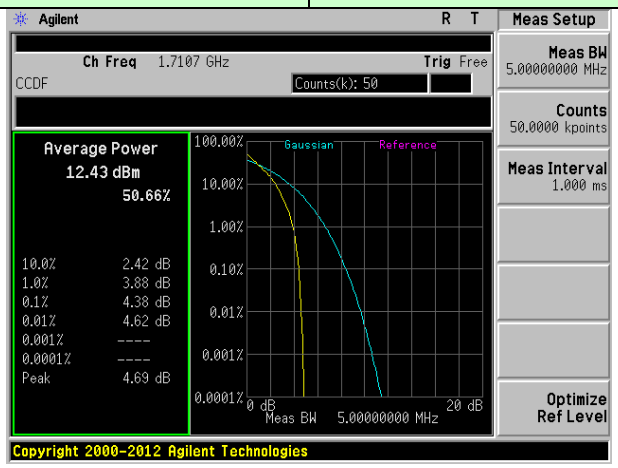


Middle channel

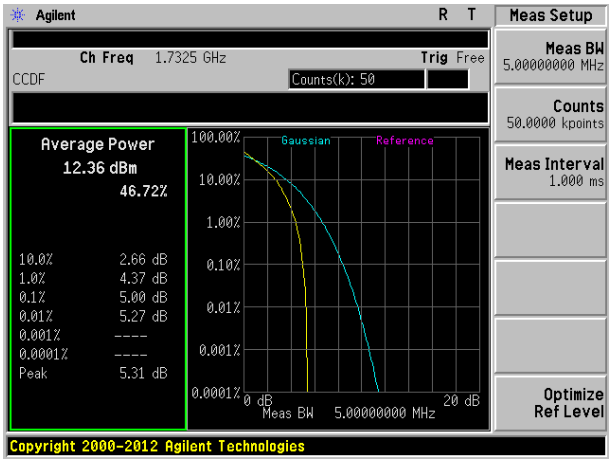


Highest channel

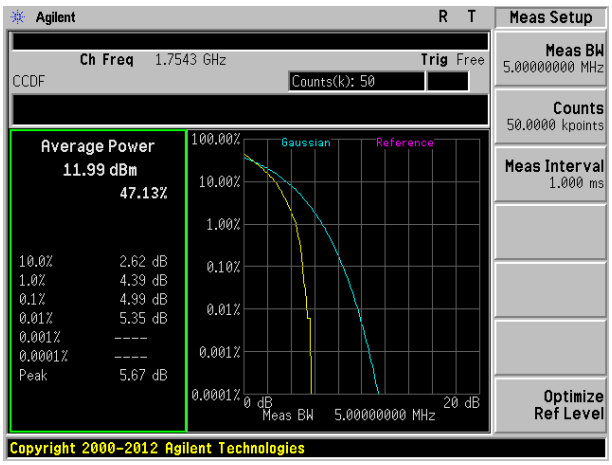
Test band: LTE Band 4	Channel Bandwidth: 1.4MHz



Lowest channel

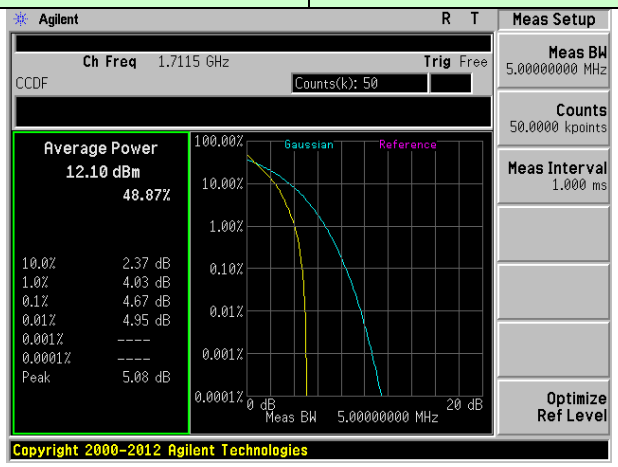


Middle channel

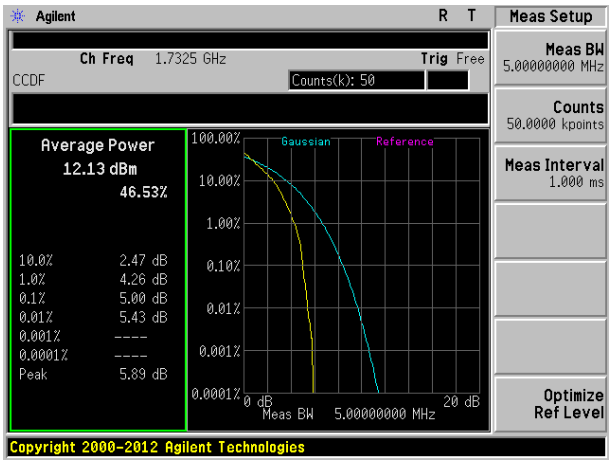


Highest channel

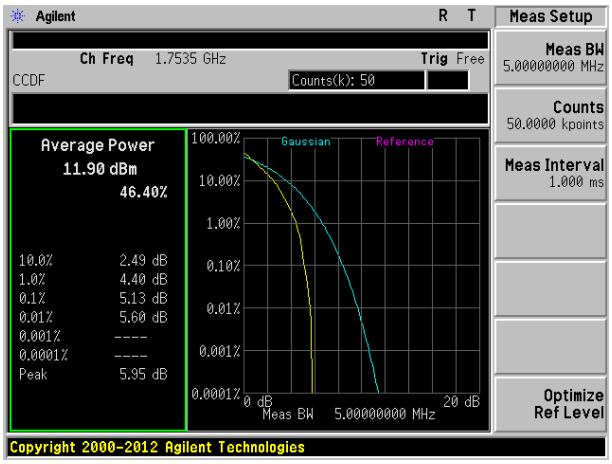
Test band: LTE Band 4	Channel Bandwidth: 3MHz



Lowest channel

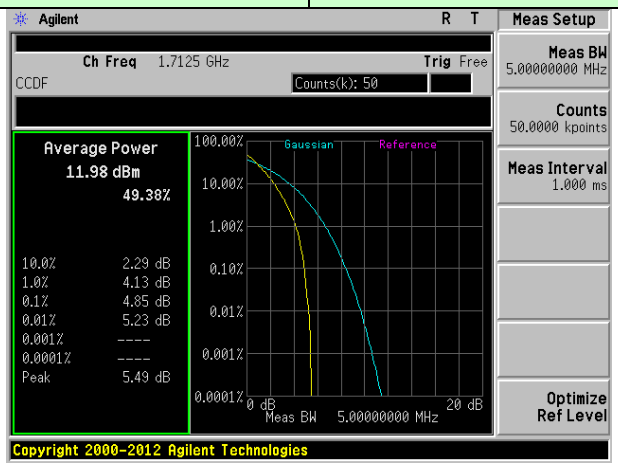


Middle channel

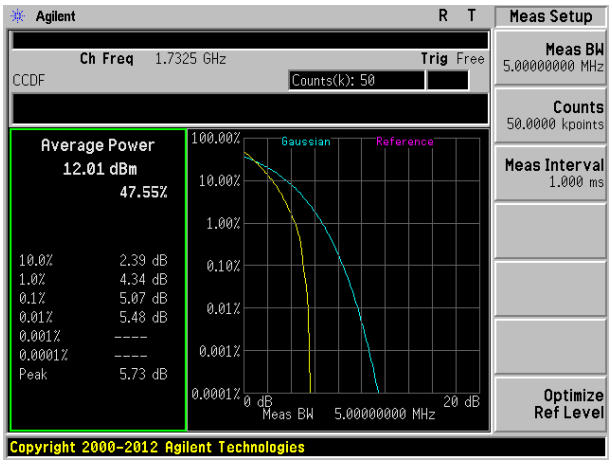


Highest channel

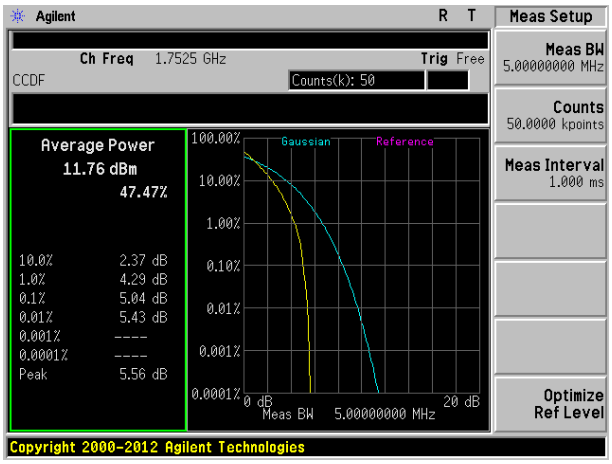
Test band: LTE Band 4	Channel Bandwidth: 5MHz



Lowest channel

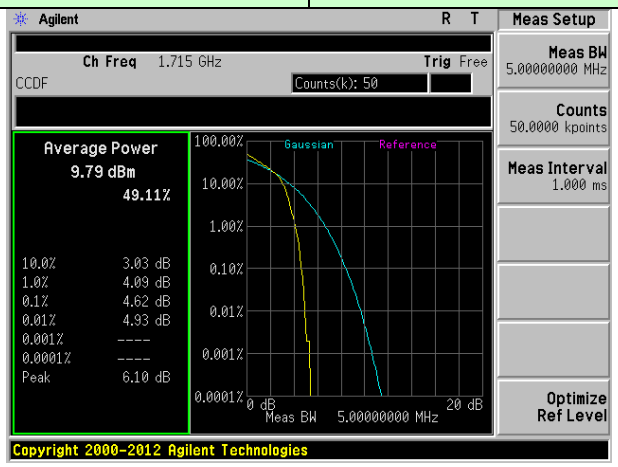


Middle channel

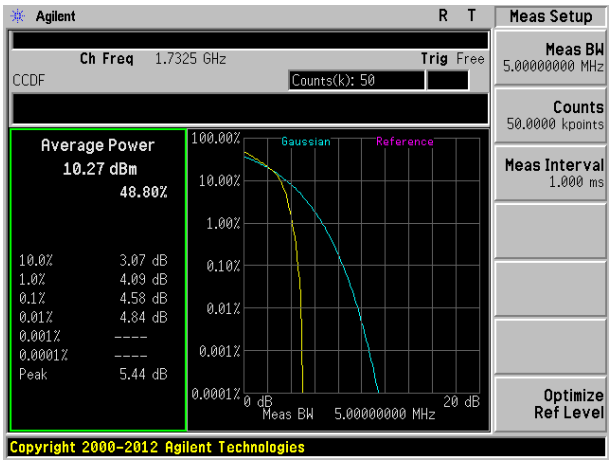


Highest channel

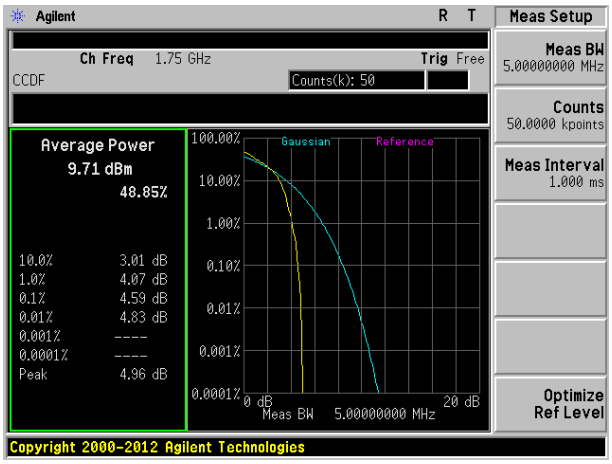
Test band: LTE Band 4	Channel Bandwidth: 10MHz



Lowest channel

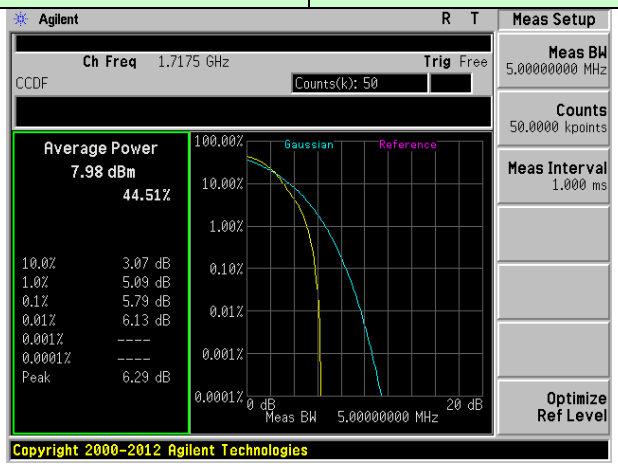


Middle channel

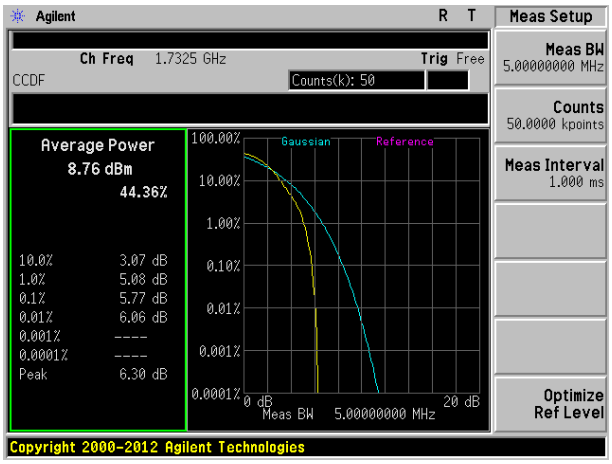


Highest channel

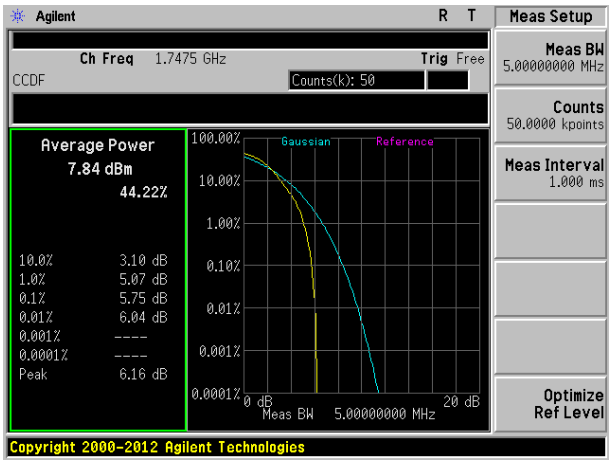
Test band: LTE Band 4	Channel Bandwidth: 15MHz



Lowest channel

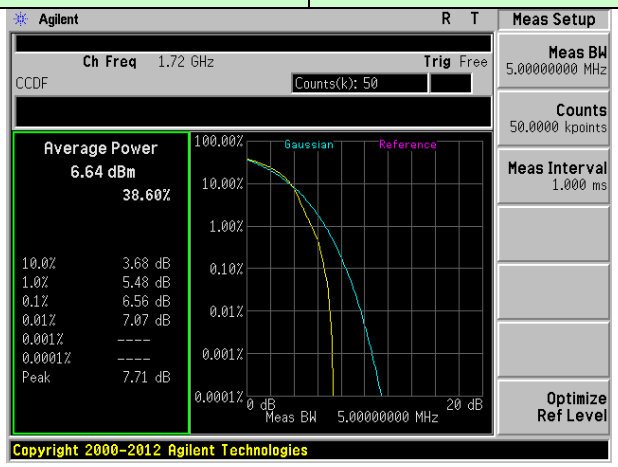


Middle channel

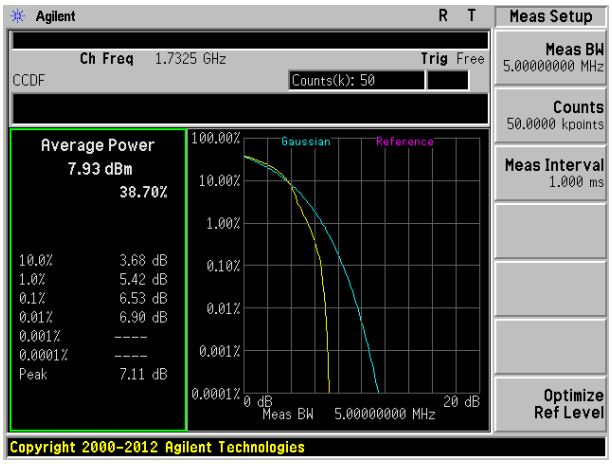


Highest channel

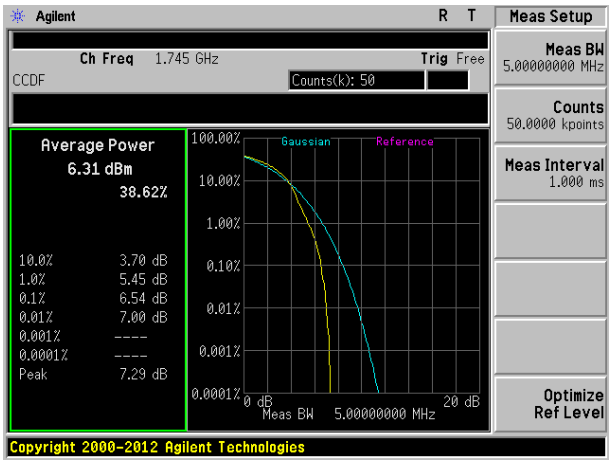
Test band: LTE Band 4	Channel Bandwidth: 20MHz



Lowest channel

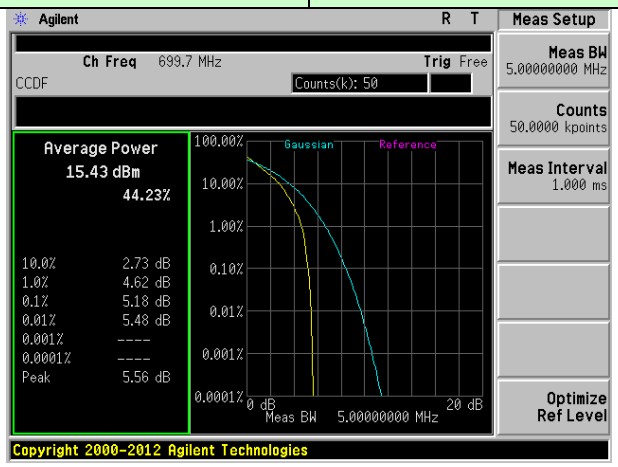


Middle channel

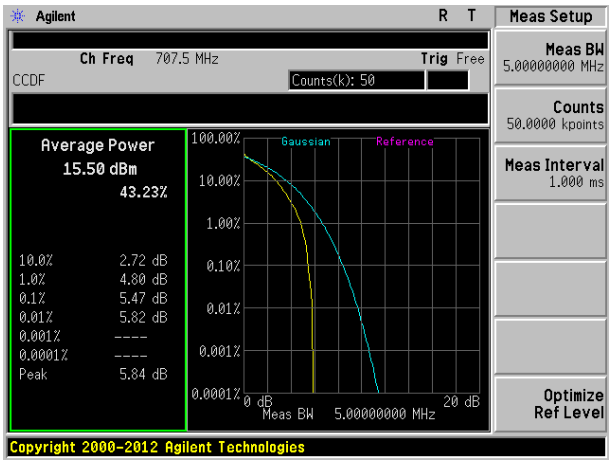


Highest channel

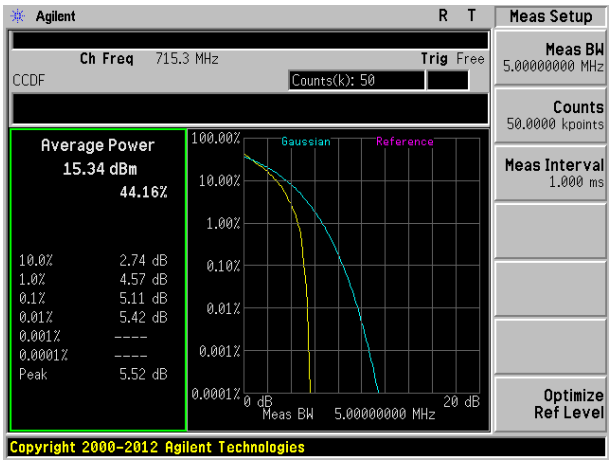
Test band: LTE Band 12	Channel Bandwidth:1.4MHz



Lowest channel

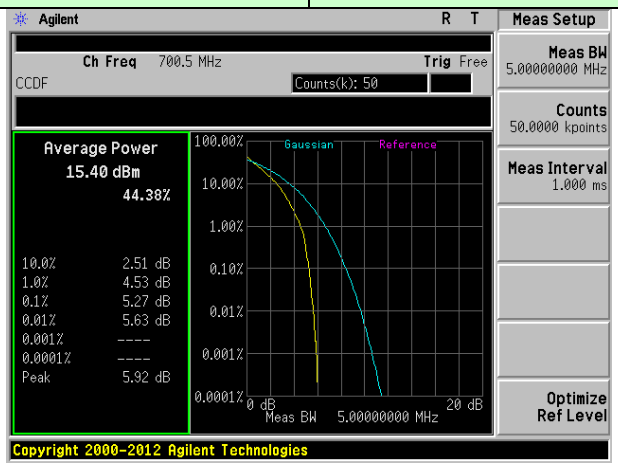


Middle channel

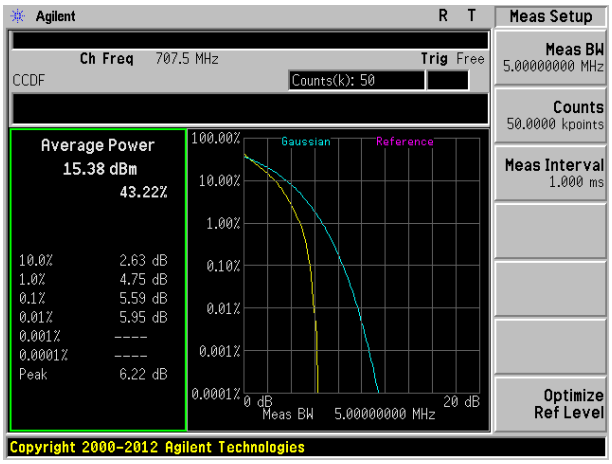


Highest channel

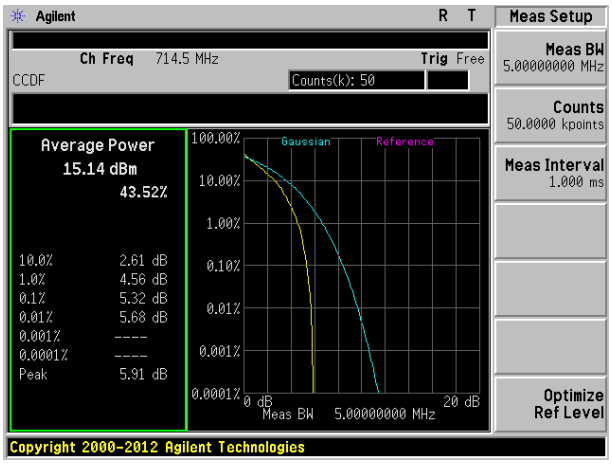
Test band: LTE Band 12	Channel Bandwidth:3MHz



Lowest channel

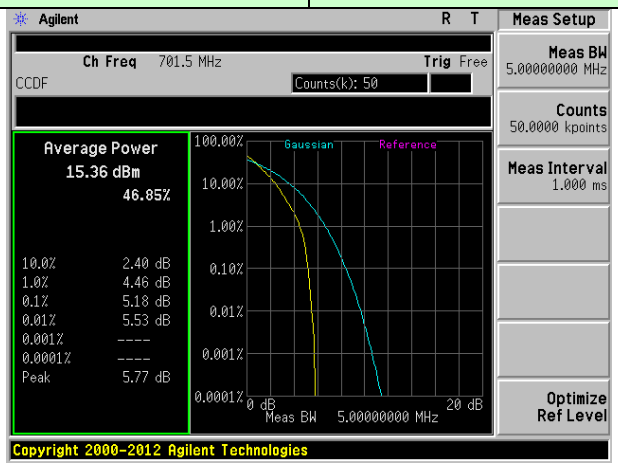


Middle channel

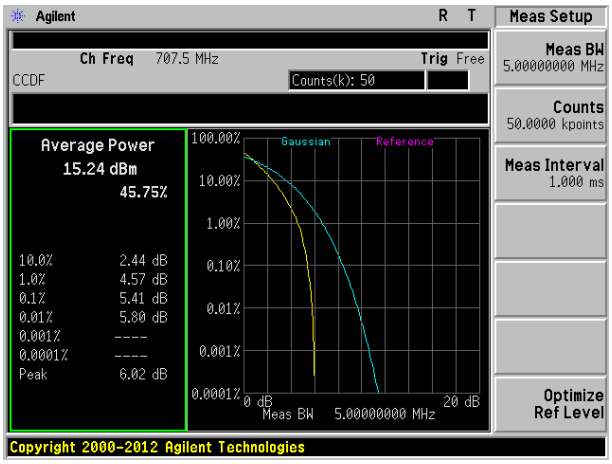


Highest channel

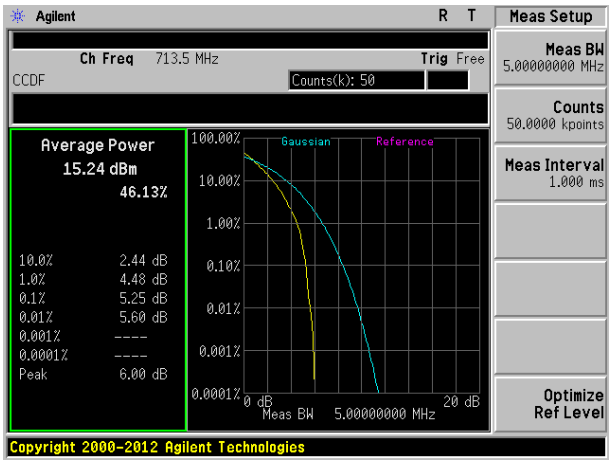
Test band: LTE Band 12	Channel Bandwidth:5MHz



Lowest channel

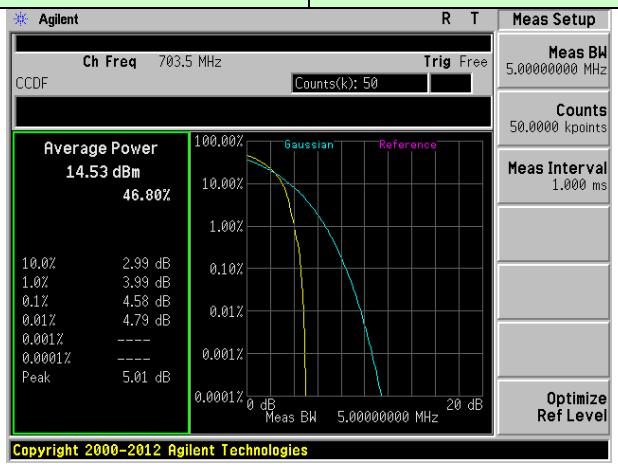


Middle channel

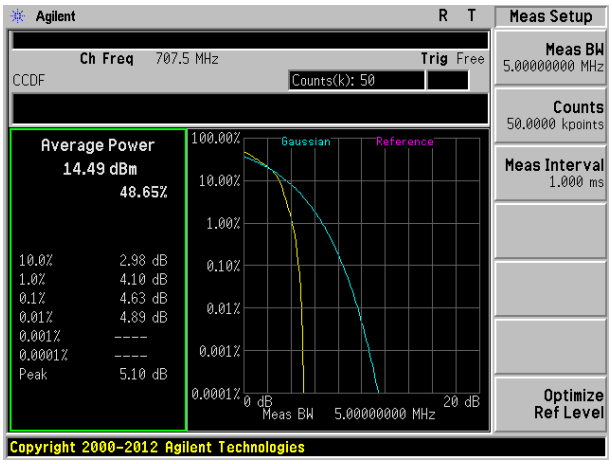


Highest channel

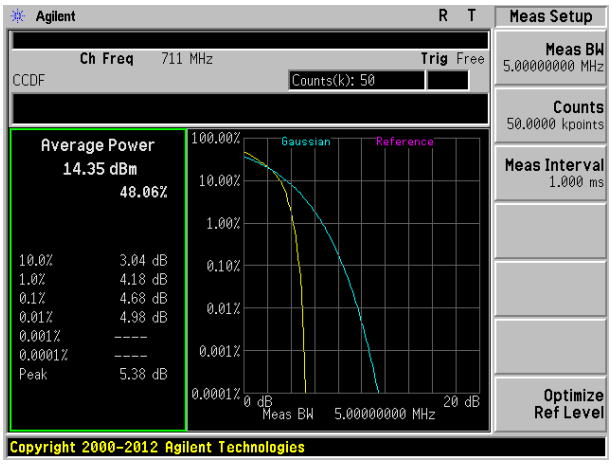
Test band: LTE Band 12	Channel Bandwidth:10MHz



Lowest channel

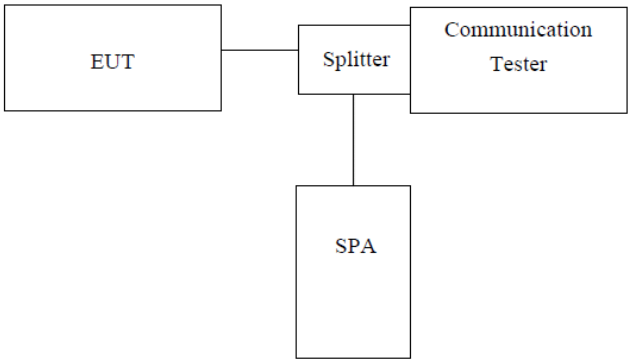


Middle channel



Highest channel

7.5 Occupy Bandwidth

Test Requirement:	Part 24.238; FCC Part 27.53(h)/(g)
Test Method:	FCC part2.1049
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 2. RBW was set to about 1% of emission BW, VBW= 3 times RBW. 3. -26dBc display line was placed on the screen (or 99% bandwidth), the occupied bandwidth is the delta frequency between the two points where the display line intersects the signal trace.
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 7.1 for details
Test results:	Pass

Measurement Data

QPSK mode：

EUT Mode	Channel Bandwidth	Channel	RB Configure		99% Occupy bandwidth (KHz)	-26dB bandwidth (KHz)
			RB Size	RB Offset		
LTE Band 2	1.4MHz	Low range	6	0	1097.70	1281.00
		Mid range	6	0	1095.00	1307.00
		High range	6	0	1101.20	1314.00
	3MHz	Low range	15	0	2686.90	2952.00
		Mid range	15	0	2744.00	3084.00
		High range	15	0	2746.40	3071.00
	5MHz	Low range	25	0	4513.30	4999.00
		Mid range	25	0	4512.80	4993.00
		High range	25	0	4504.90	4966.00
	10MHz	Low range	50	0	8948.80	9819.00
		Mid range	50	0	8967.60	10034.00
		High range	50	0	8982.40	9977.00
	15MHz	Low range	75	0	13382.60	14395.00
		Mid range	75	0	13415.30	14714.00
		High range	75	0	13405.40	14832.00
	20MHz	Low range	100	0	17839.00	19125.00
		Mid range	100	0	17861.70	19343.00
		High range	100	0	17817.30	19566.00

EUT Mode	Channel Bandwidth	Channel	RB Configure		99% Occupy bandwidth (KHz)	-26dB bandwidth (KHz)
			RB Size	RB Offset		
LTE Band 4	1.4MHz	Low range	6	0	1101.50	1329.00
		Mid range	6	0	1090.10	1291.00
		High range	6	0	1097.30	1301.00
	3MHz	Low range	15	0	2681.40	2936.00
		Mid range	15	0	2687.60	2932.00
		High range	15	0	2681.60	2939.00
	5MHz	Low range	25	0	4517.30	4995.00
		Mid range	25	0	4518.70	4959.00
		High range	25	0	4555.10	4974.00
	10MHz	Low range	50	0	8938.80	9849.00
		Mid range	50	0	8965.90	10101.00
		High range	50	0	8949.00	10103.00
	15MHz	Low range	75	0	13377.20	14825.00
		Mid range	75	0	13402.80	14923.00
		High range	75	0	13373.50	14802.00
	20MHz	Low range	100	0	17821.10	19044.00
		Mid range	100	0	17869.70	19259.00
		High range	100	0	17770.50	19100.00

EUT Mode	Channel Bandwidth	Channel	RB Configure		99% Occupy bandwidth (KHz)	-26dB bandwidth (KHz)
			RB Size	RB Offset		
LTE Band 12	1.4MHz	Low range	6	0	1097.80	1262.00
		Mid range	6	0	1103.80	1291.00
		High range	6	0	1095.90	1273.00
	3MHz	Low range	15	0	2684.30	2927.00
		Mid range	15	0	2690.90	2938.00
		High range	15	0	2685.10	2947.00
	5MHz	Low range	25	0	4506.10	5096.00
		Mid range	25	0	4538.00	5055.00
		High range	25	0	4509.60	5079.00
	10MHz	Low range	50	0	8941.90	9949.00
		Mid range	50	0	8957.90	9928.00
		High range	50	0	8953.50	9932.00

16QAM mode：

EUT Mode	Channel Bandwidth	Channel	RB Configure		99% Occupy bandwidth (KHz)	-26dB bandwidth (KHz)
			RB Size	RB Offset		
LTE Band 2	1.4MHz	Low range	6	0	1097.70	1311.00
		Mid range	6	0	1097.60	1287.00
		High range	6	0	1096.80	1288.00
	3MHz	Low range	15	0	2683.60	2962.00
		Mid range	15	0	2742.40	3061.00
		High range	15	0	2746.20	3041.00
	5MHz	Low range	25	0	4516.30	5005.00
		Mid range	25	0	4506.20	4954.00
		High range	25	0	4503.90	5043.00
	10MHz	Low range	50	0	8936.20	9800.00
		Mid range	50	0	8962.70	10089.00
		High range	50	0	8967.80	9742.00
	15MHz	Low range	75	0	13390.40	14260.00
		Mid range	75	0	13393.40	14788.00
		High range	75	0	13399.70	14900.00
	20MHz	Low range	100	0	17824.20	18969.00
		Mid range	100	0	17873.70	18985.00
		High range	100	0	17806.00	19247.00

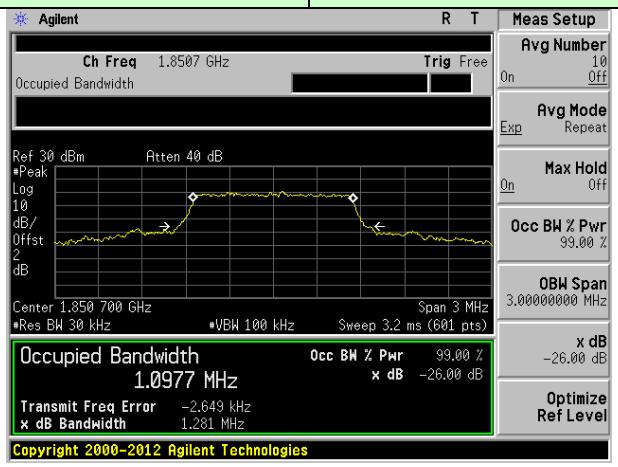
EUT Mode	Channel Bandwidth	Channel	RB Configure		99% Occupy bandwidth (KHz)	-26dB bandwidth (KHz)
			RB Size	RB Offset		
LTE Band 4	1.4MHz	Low range	6	0	1101.80	1341.00
		Mid range	6	0	1090.90	1293.00
		High range	6	0	1099.60	1308.00
	3MHz	Low range	15	0	2690.00	2947.00
		Mid range	15	0	2679.80	2934.00
		High range	15	0	2678.80	2950.00
	5MHz	Low range	25	0	4510.90	5054.00
		Mid range	25	0	4524.60	4935.00
		High range	25	0	4556.30	4996.00
	10MHz	Low range	50	0	8944.40	9843.00
		Mid range	50	0	8940.80	10017.00
		High range	50	0	8968.20	9942.00
	15MHz	Low range	75	0	13387.80	14789.00
		Mid range	75	0	13410.30	14894.00
		High range	75	0	13357.30	14629.00
	20MHz	Low range	100	0	17815.60	19034.00
		Mid range	100	0	17863.70	19326.00
		High range	100	0	17798.40	19213.00

EUT Mode	Channel Bandwidth	Channel	RB Configure		99% Occupy bandwidth (KHz)	-26dB bandwidth (KHz)
			RB Size	RB Offset		
LTE Band 12	1.4MHz	Low range	6	0	1095.40	1288.00
		Mid range	6	0	1102.40	1311.00
		High range	6	0	1094.70	1282.00
	3MHz	Low range	15	0	2678.20	2923.00
		Mid range	15	0	2692.80	2955.00
		High range	15	0	2682.50	2905.00
	5MHz	Low range	25	0	4508.40	5103.00
		Mid range	25	0	4526.90	5174.00
		High range	25	0	4516.70	5108.00
	10MHz	Low range	50	0	8941.70	9894.00
		Mid range	50	0	8965.20	9952.00
		High range	50	0	8967.50	9948.00

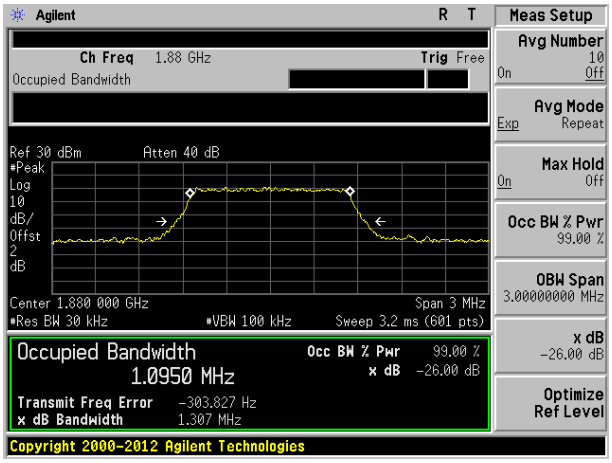
Test plot as follows:

QPSK mode:

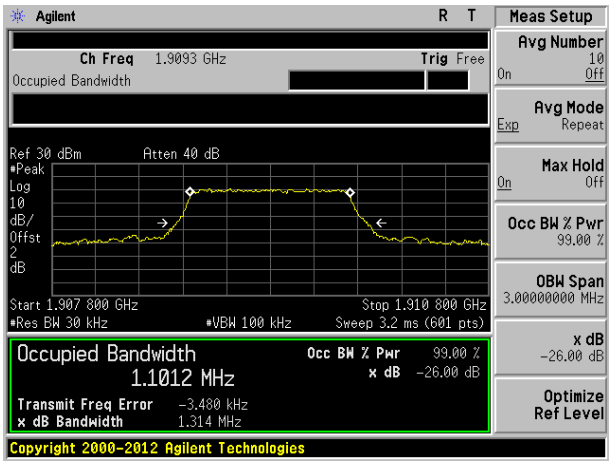
Test band: LTE Band 2	Channel Bandwidth: 1.4MHz



Lowest channel

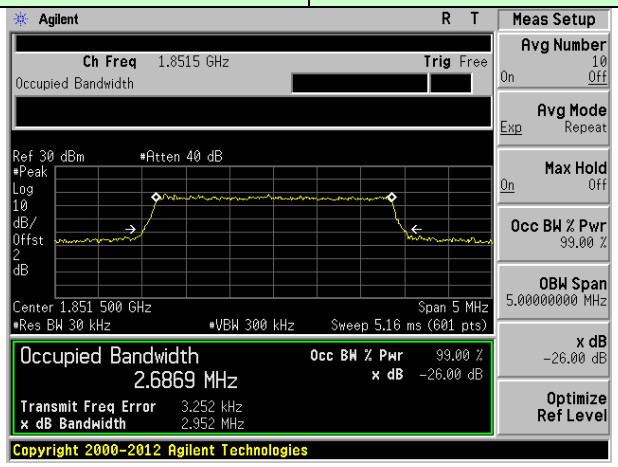


Middle channel

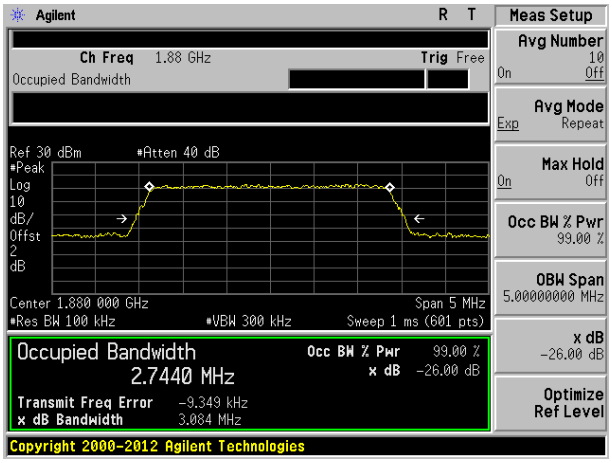


Highest channel

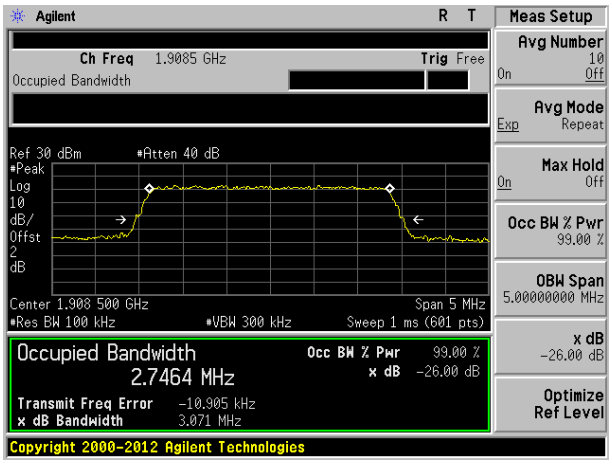
Test band: LTE Band 2	Channel Bandwidth:3MHz



Lowest channel

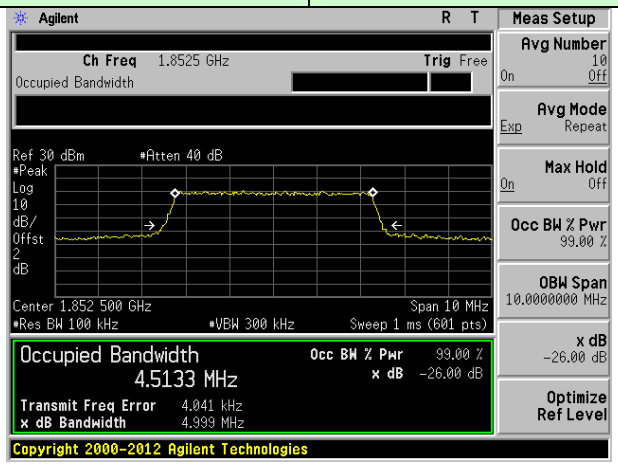


Middle channel

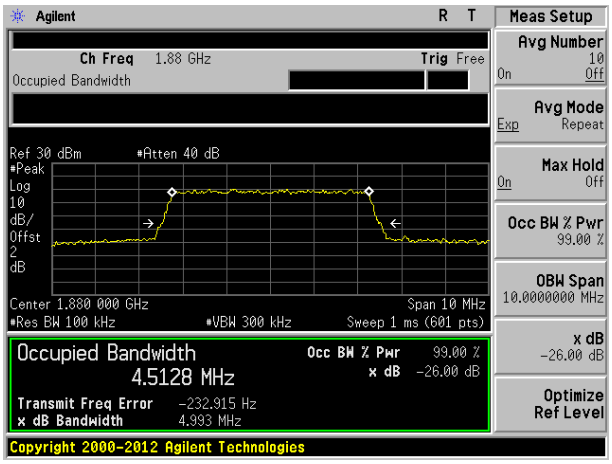


Highest channel

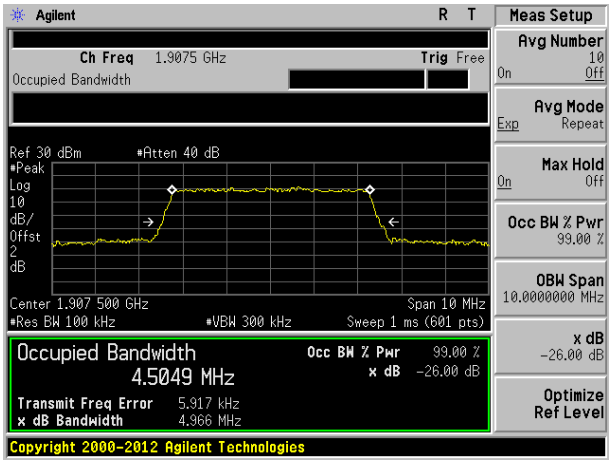
Test band: LTE Band 2	Channel Bandwidth: 5MHz



Lowest channel

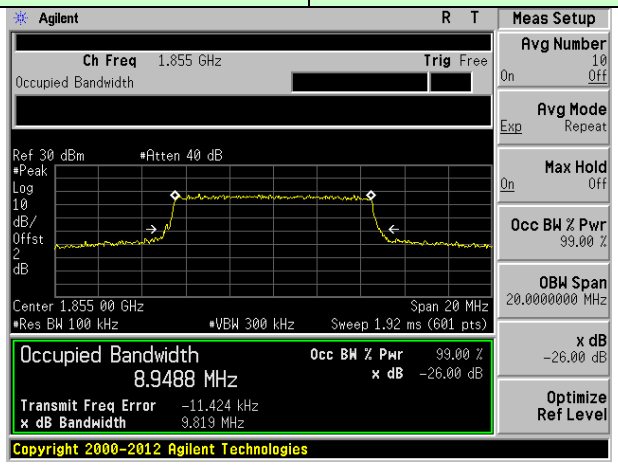


Middle channel

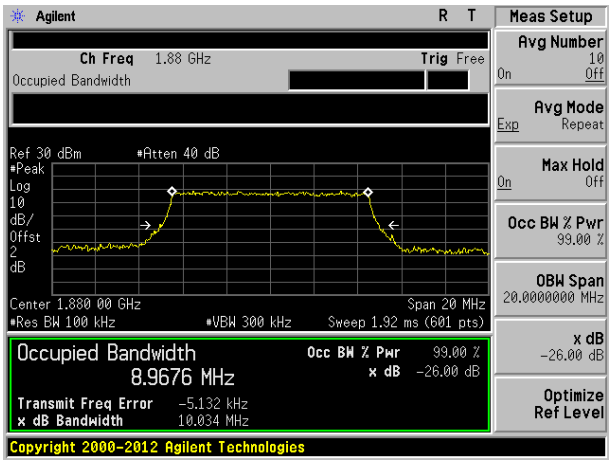


Highest channel

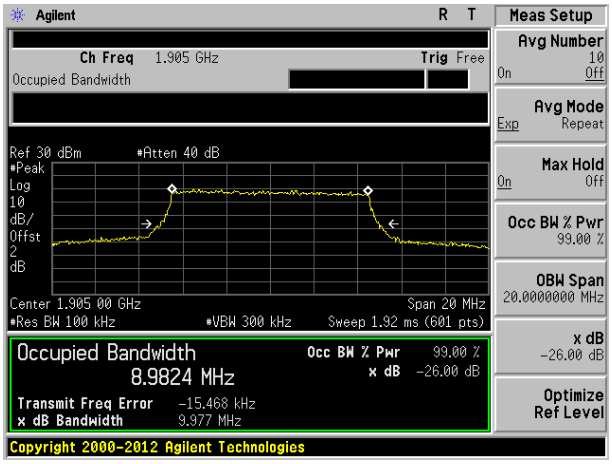
Test band: LTE Band 2	Channel Bandwidth:10MHz



Lowest channel

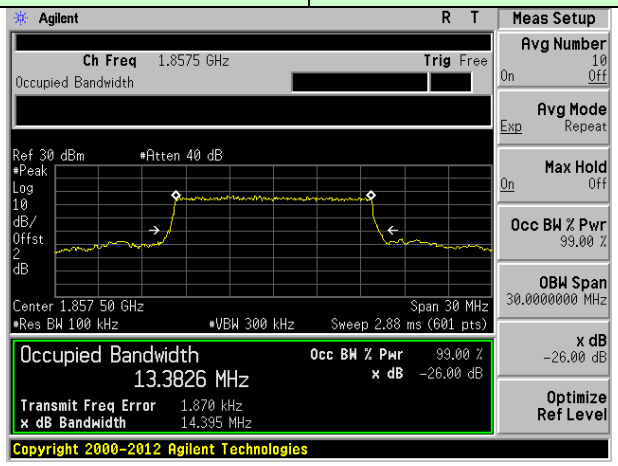


Middle channel

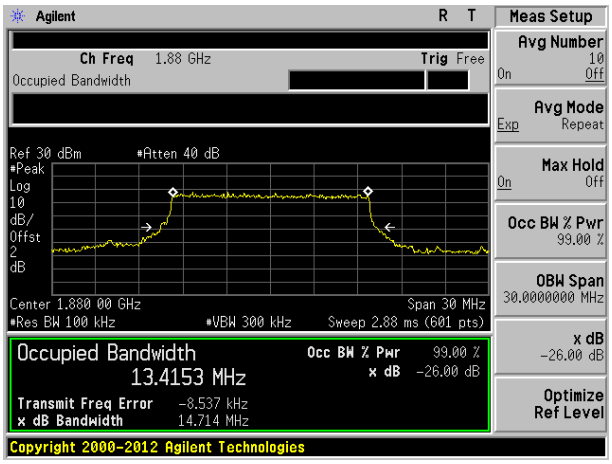


Highest channel

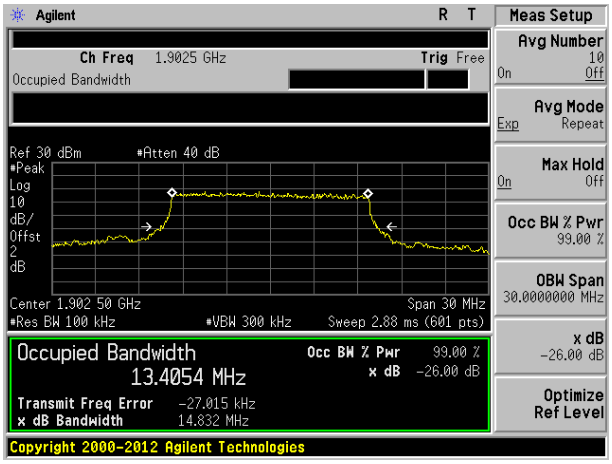
Test band: LTE Band 2	Channel Bandwidth:15MHz



Lowest channel

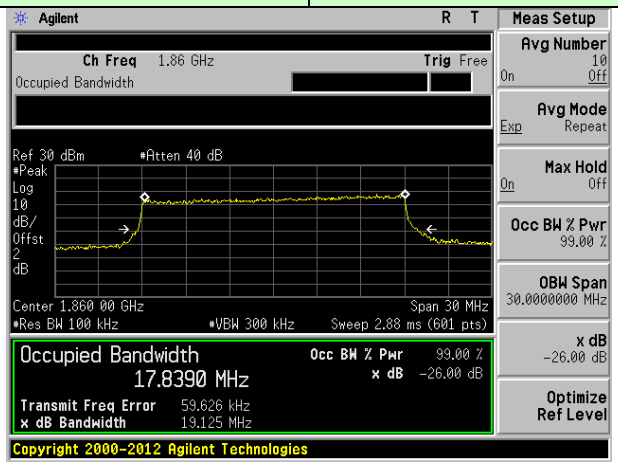


Middle channel

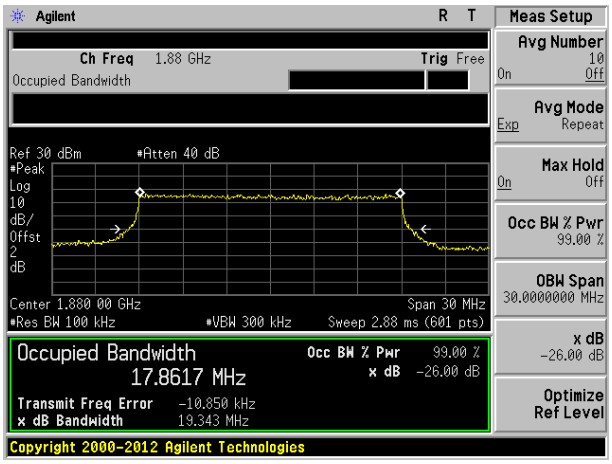


Highest channel

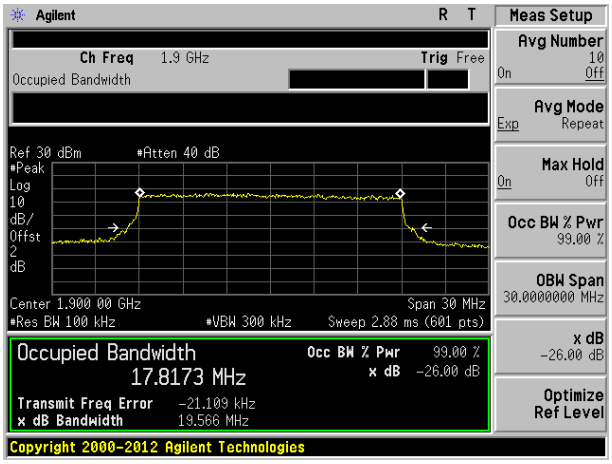
Test band: LTE Band 2	Channel Bandwidth:20MHz



Lowest channel

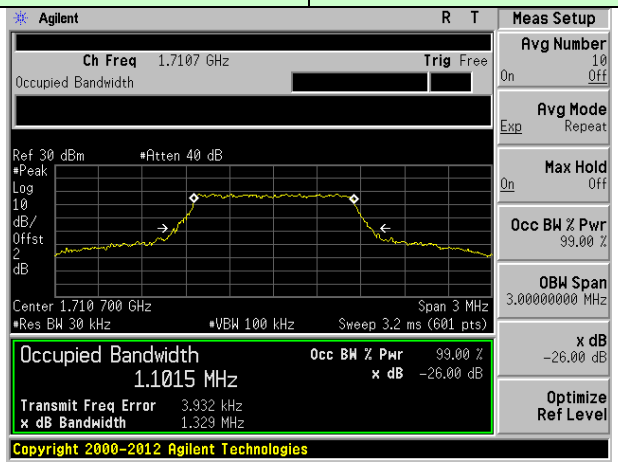


Middle channel

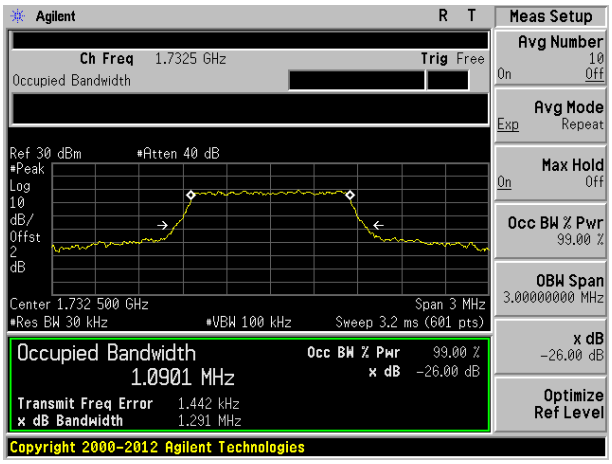


Highest channel

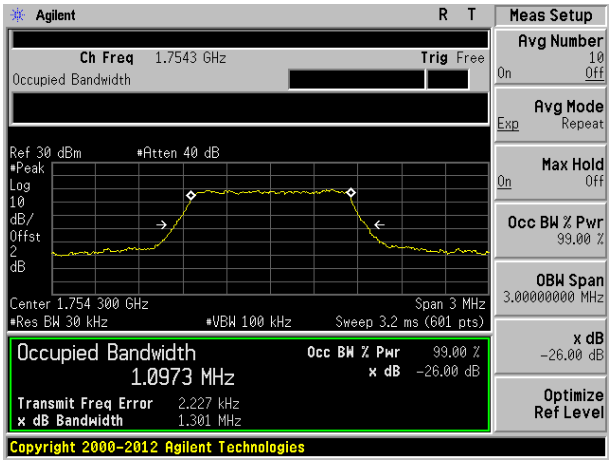
Test band: LTE Band 4	Channel Bandwidth: 1.4MHz



Lowest channel

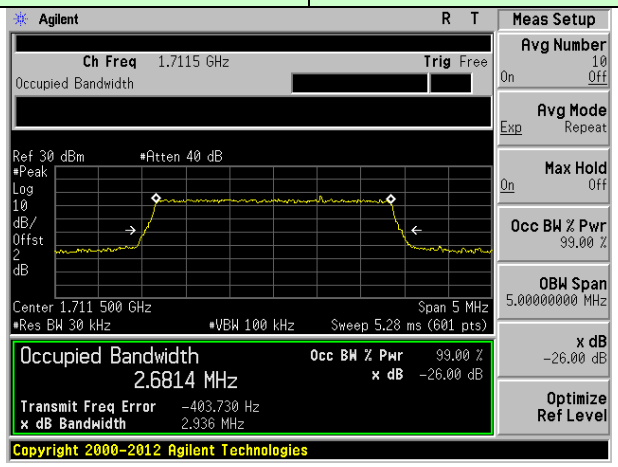


Middle channel

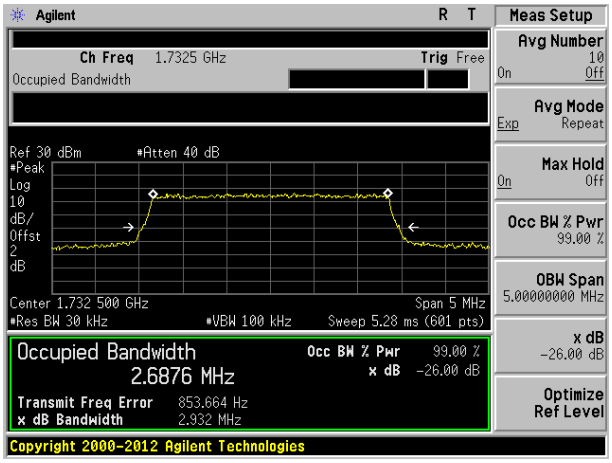


Highest channel

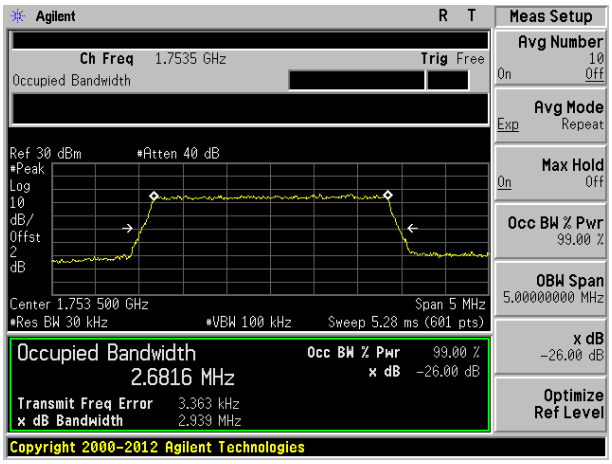
Test band: LTE Band 4	Channel Bandwidth: 3MHz



Lowest channel

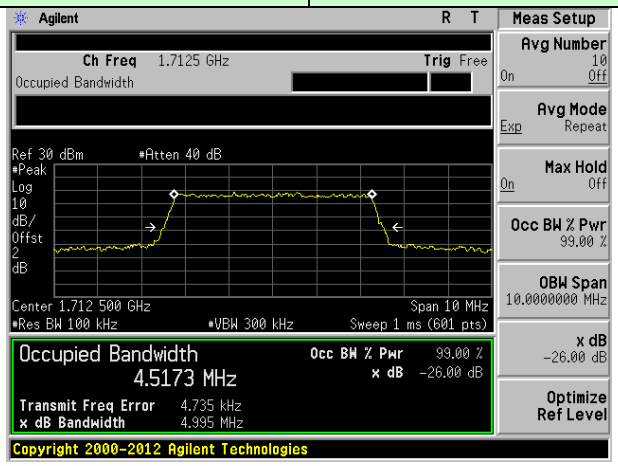


Middle channel

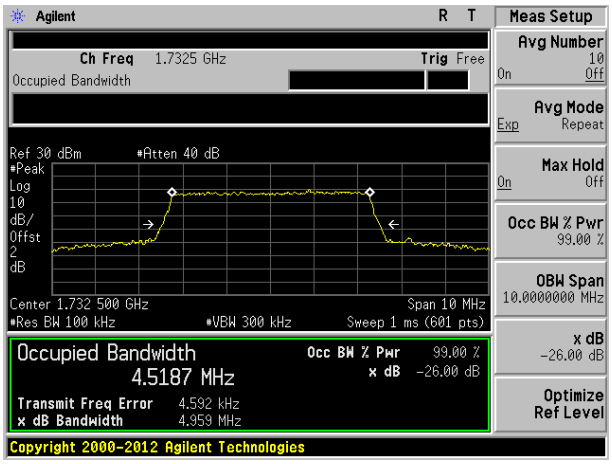


Highest channel

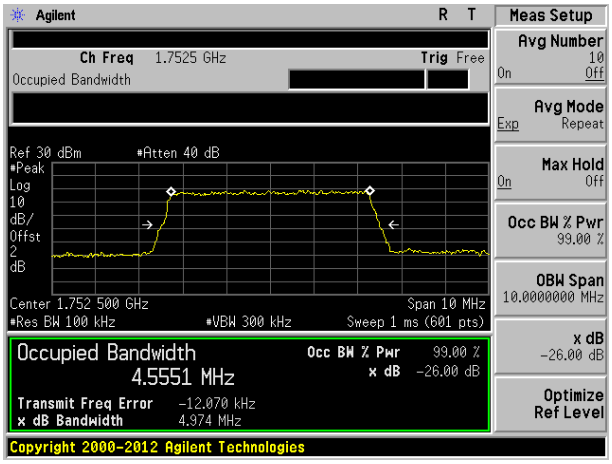
Test band: LTE Band 4	Channel Bandwidth: 5MHz



Lowest channel

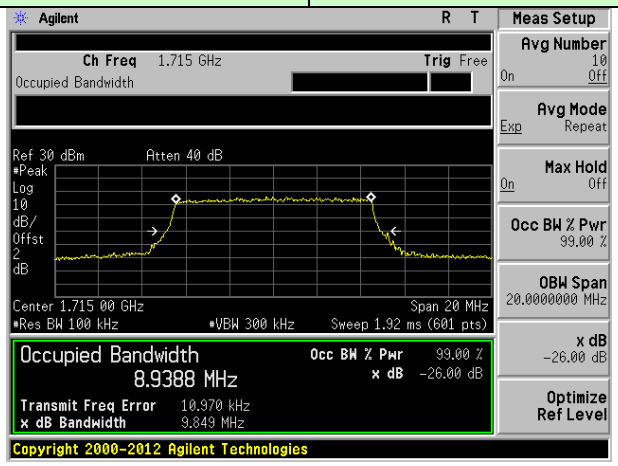


Middle channel

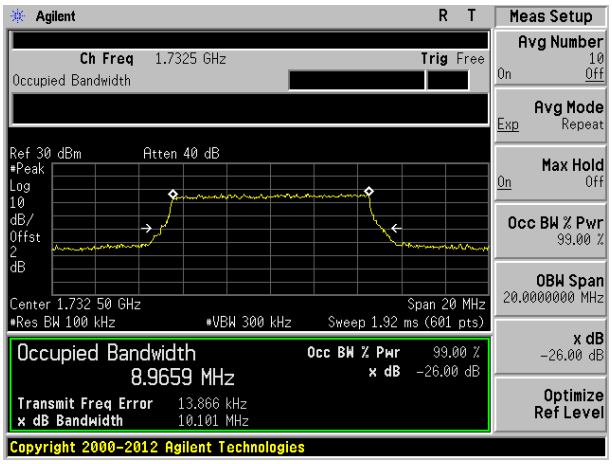


Highest channel

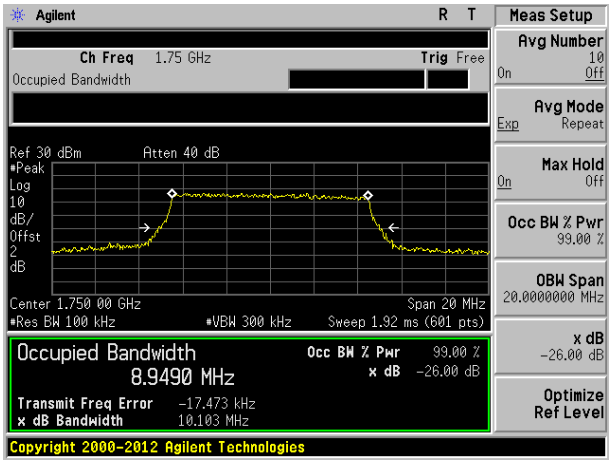
Test band: LTE Band 4	Channel Bandwidth: 10MHz



Lowest channel

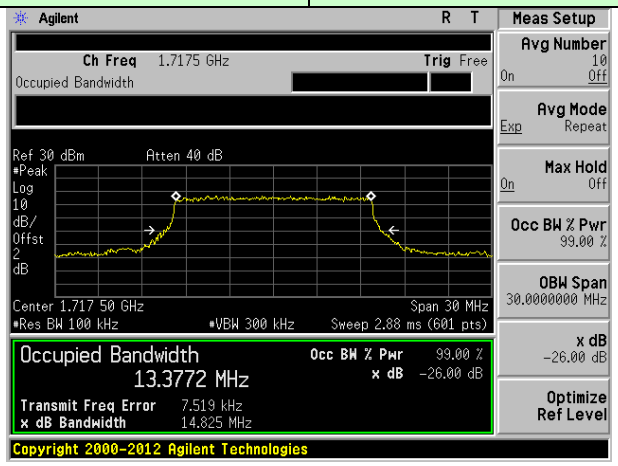


Middle channel

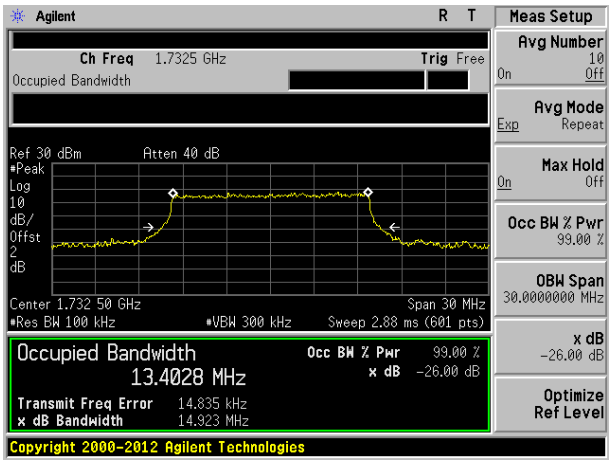


Highest channel

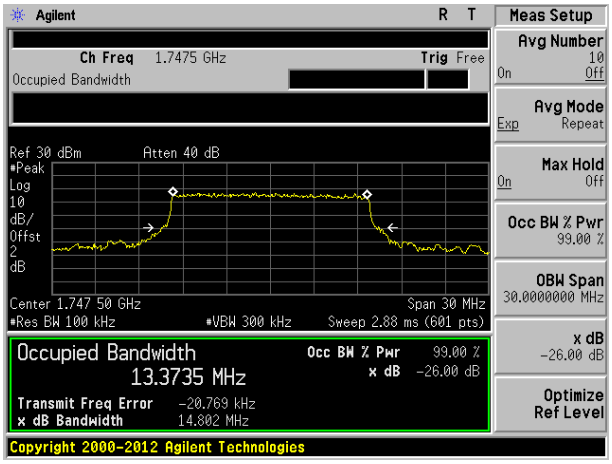
Test band: LTE Band 4	Channel Bandwidth: 15MHz



Lowest channel

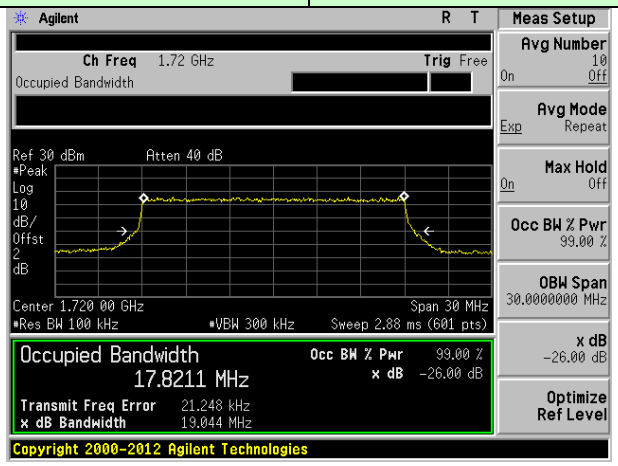


Middle channel

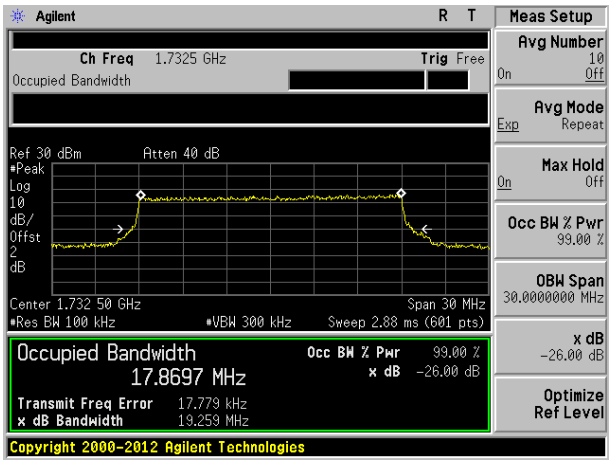


Highest channel

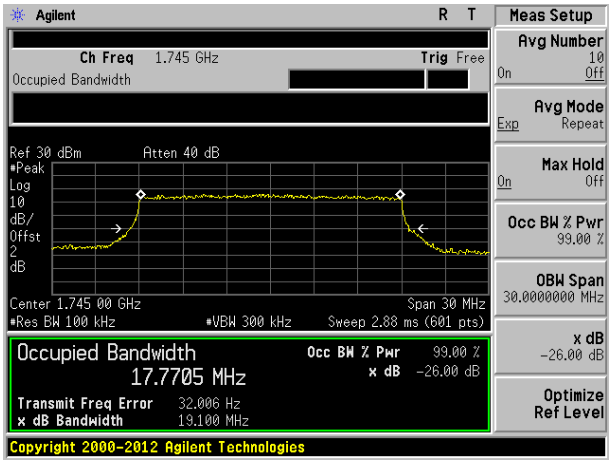
Test band: LTE Band 4	Channel Bandwidth: 20MHz



Lowest channel

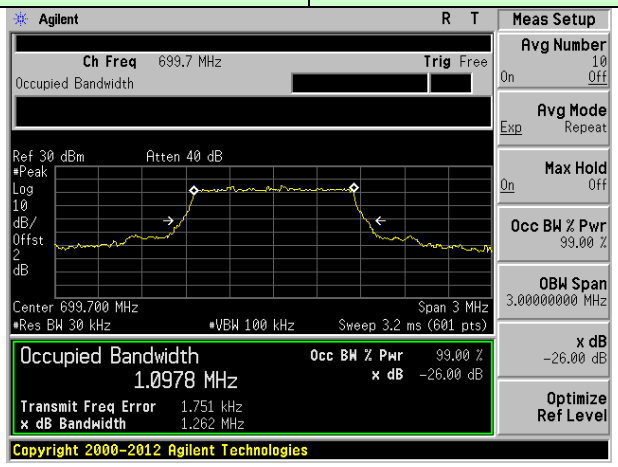


Middle channel

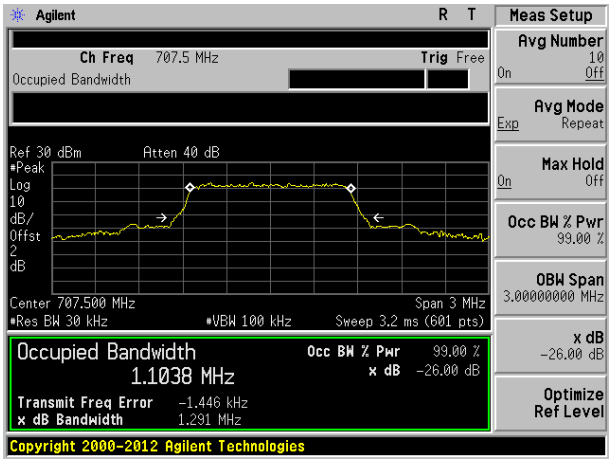


Highest channel

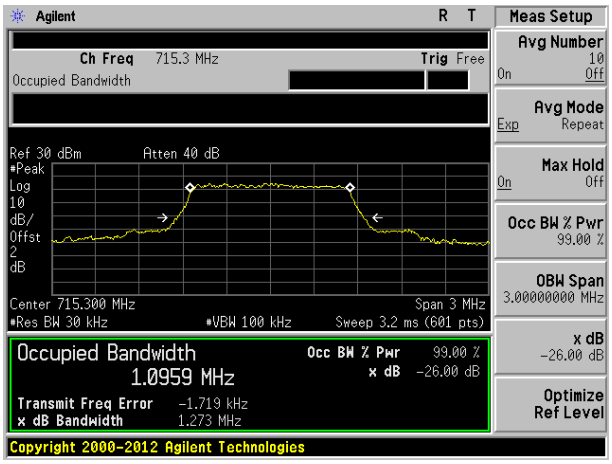
Test band: LTE Band 12	Channel Bandwidth: 1.4MHz



Lowest channel

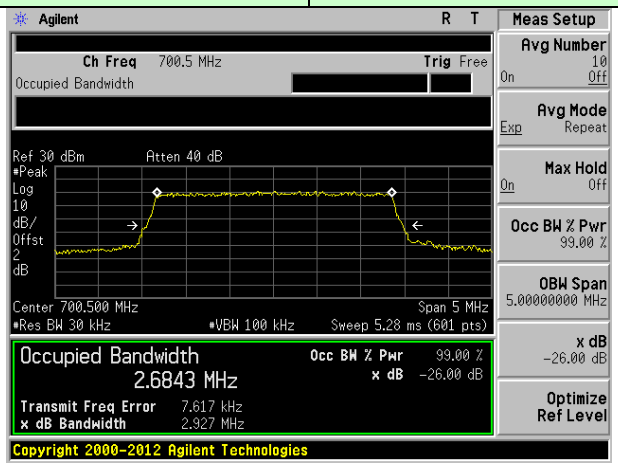


Middle channel

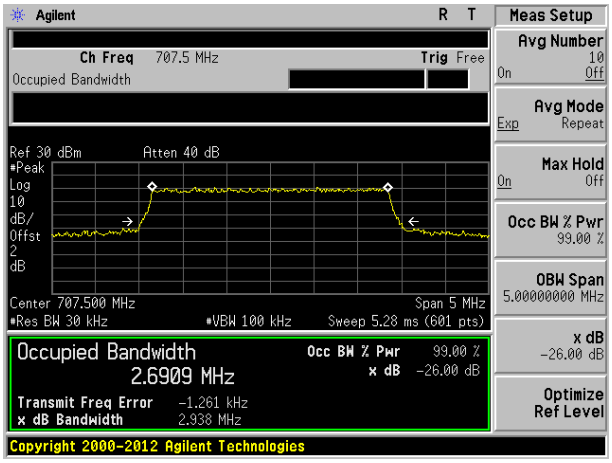


Highest channel

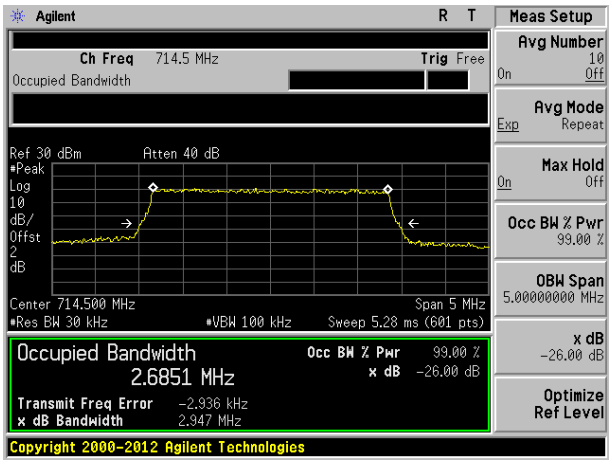
Test band: LTE Band 12	Channel Bandwidth: 3MHz



Lowest channel

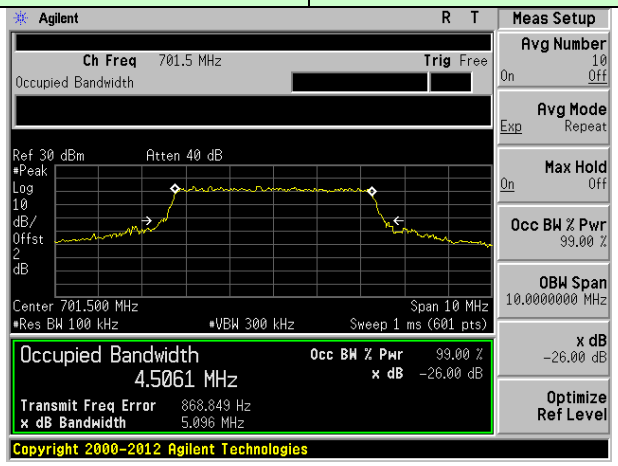


Middle channel

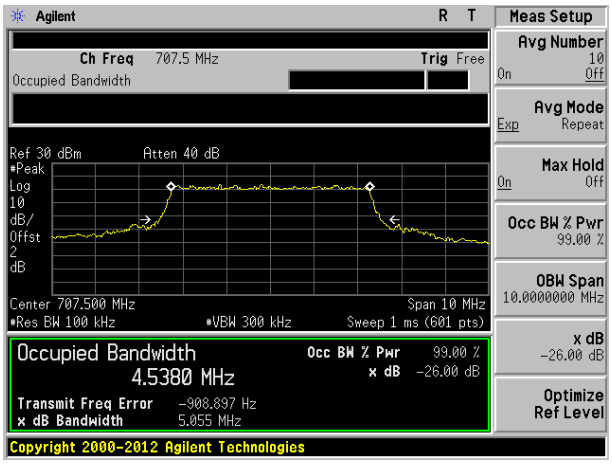


Highest channel

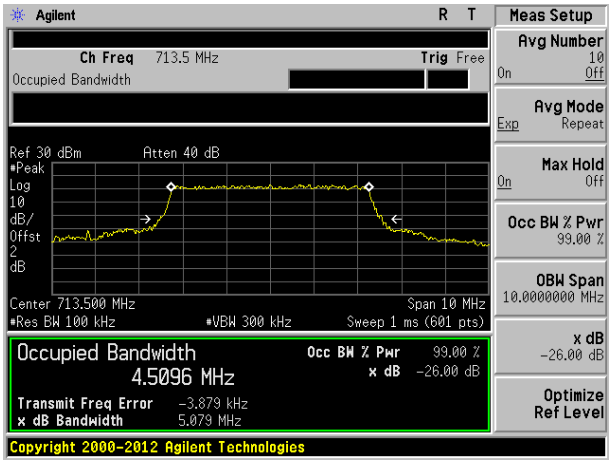
Test band: LTE Band 12	Channel Bandwidth: 5MHz



Lowest channel

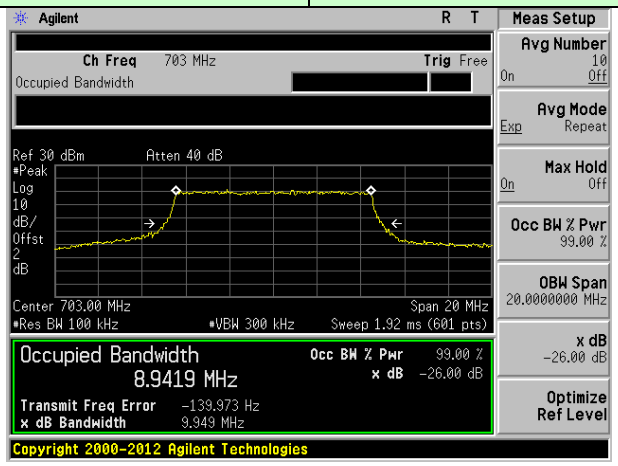


Middle channel

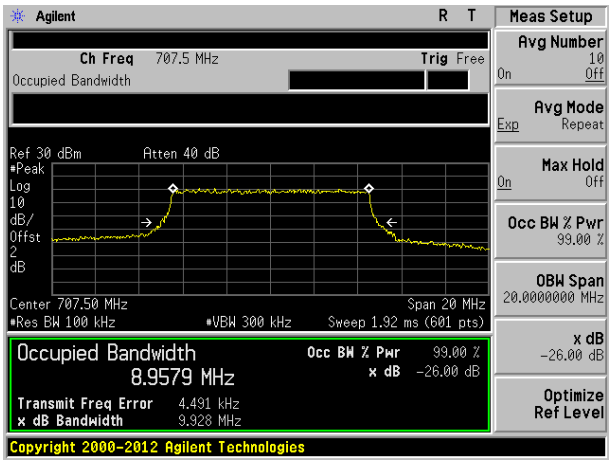


Highest channel

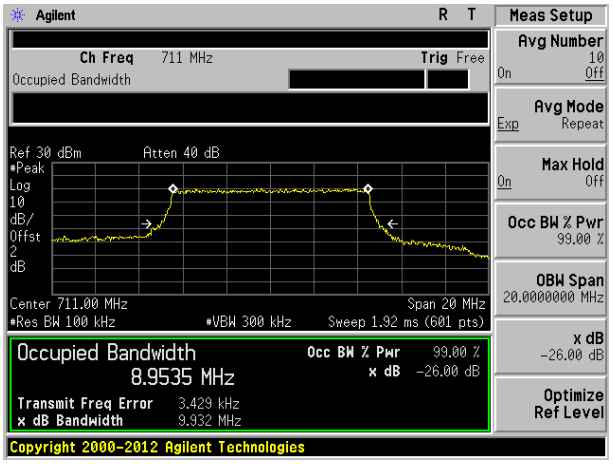
Test band: LTE Band 12	Channel Bandwidth: 10MHz



Lowest channel



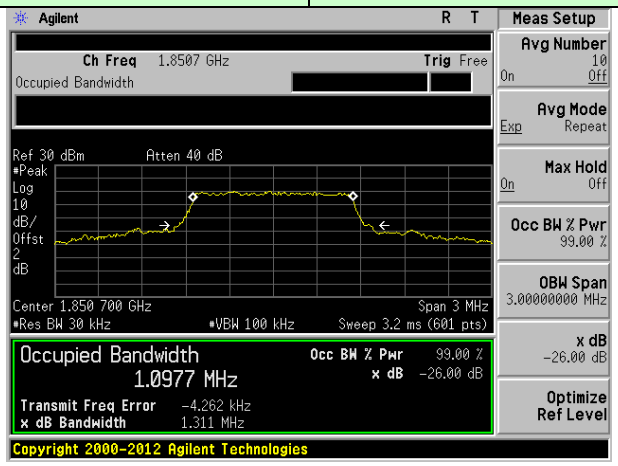
Middle channel



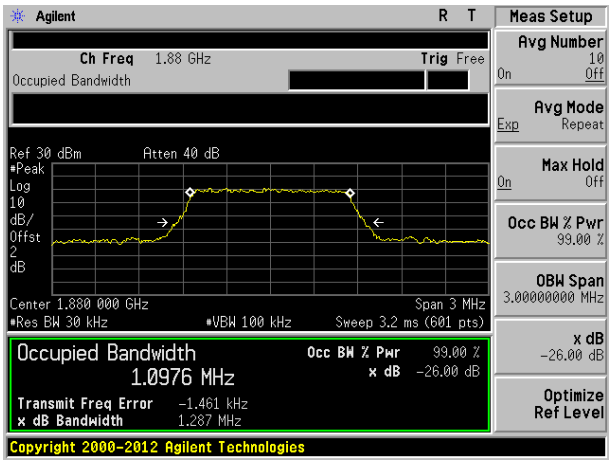
Highest channel

16QAM mode:

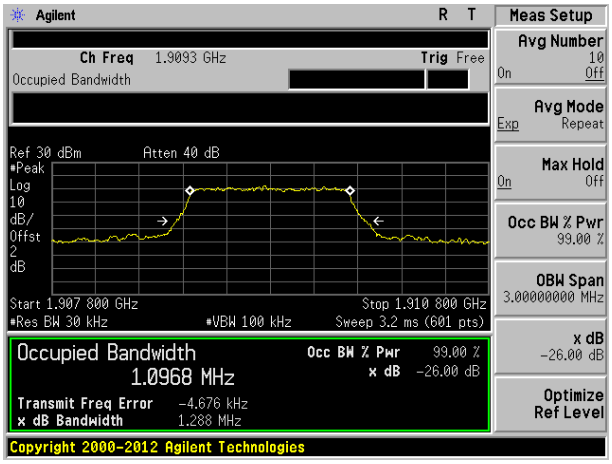
Test band: LTE Band 2	Channel Bandwidth: 1.4MHz



Lowest channel

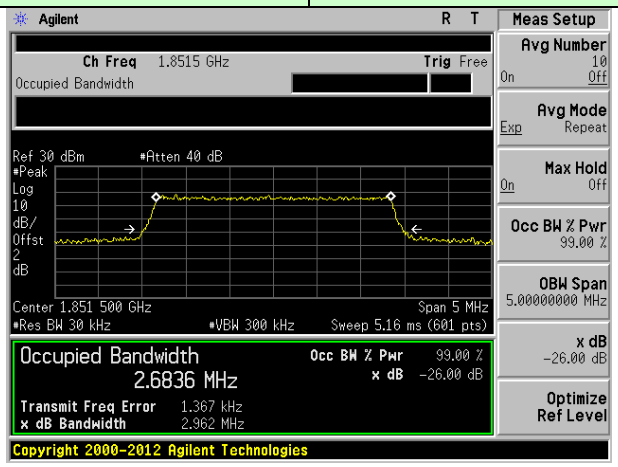


Middle channel

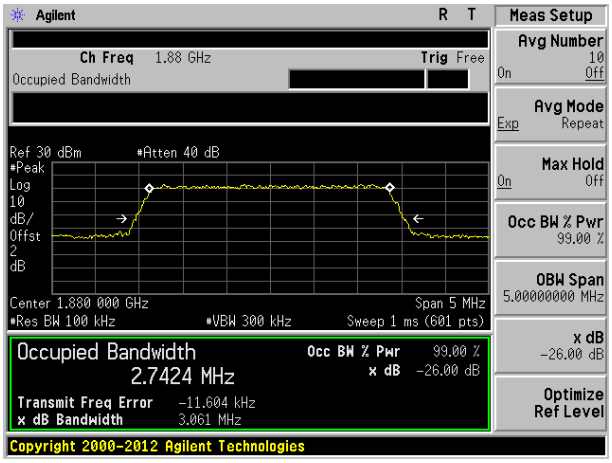


Highest channel

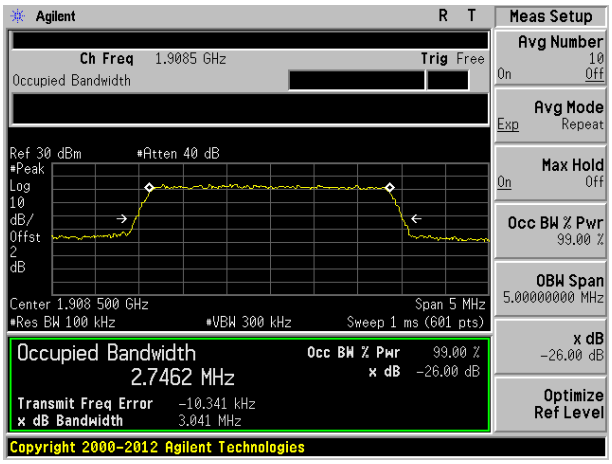
Test band: LTE Band 2	Channel Bandwidth:3MHz



Lowest channel

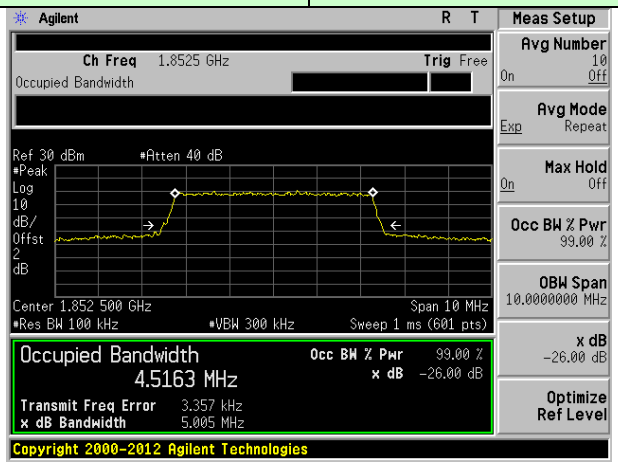


Middle channel

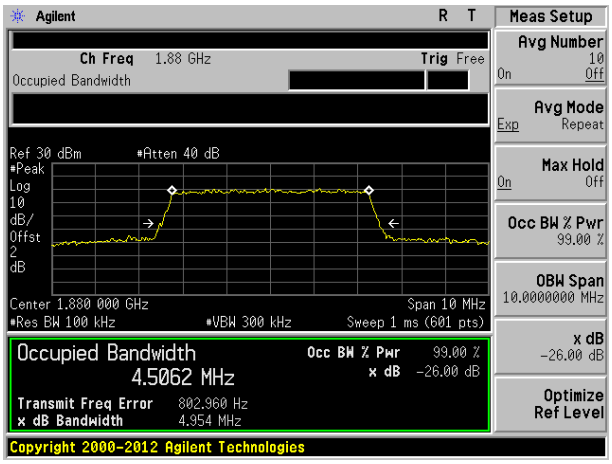


Highest channel

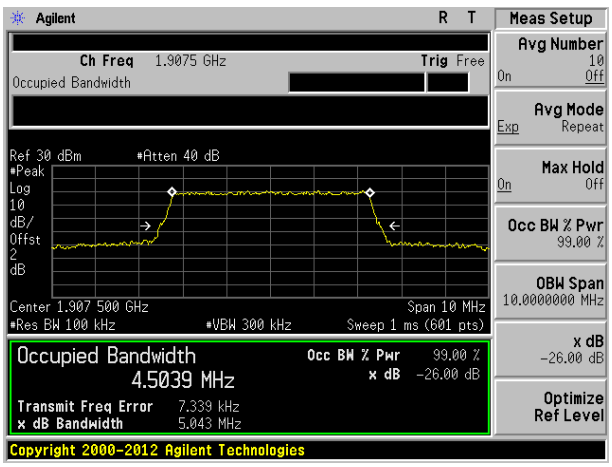
Test band: LTE Band 2	Channel Bandwidth: 5MHz



Lowest channel

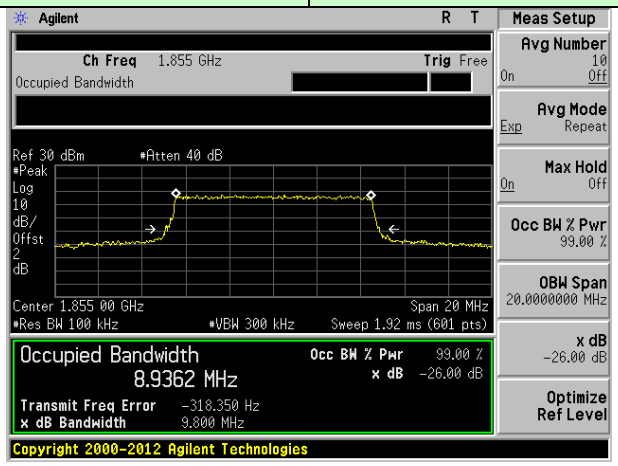


Middle channel

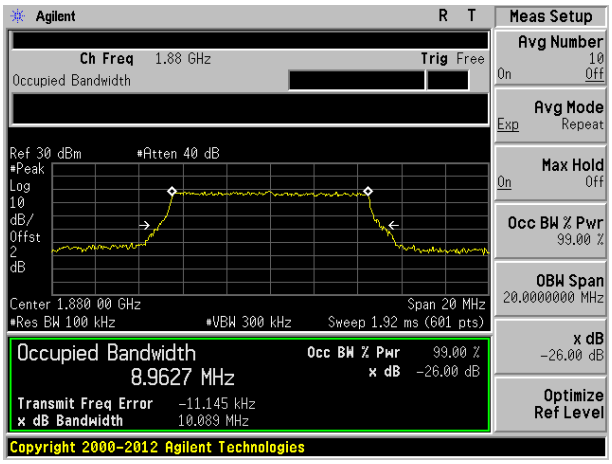


Highest channel

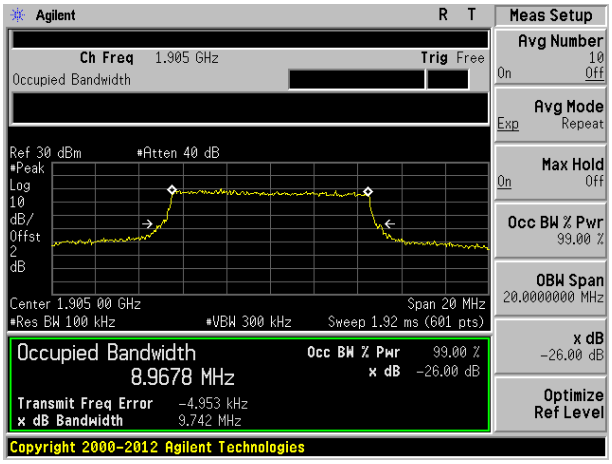
Test band: LTE Band 2	Channel Bandwidth:10MHz



Lowest channel

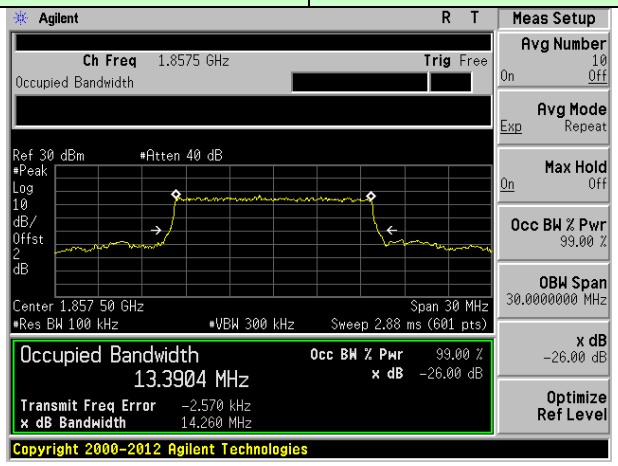


Middle channel

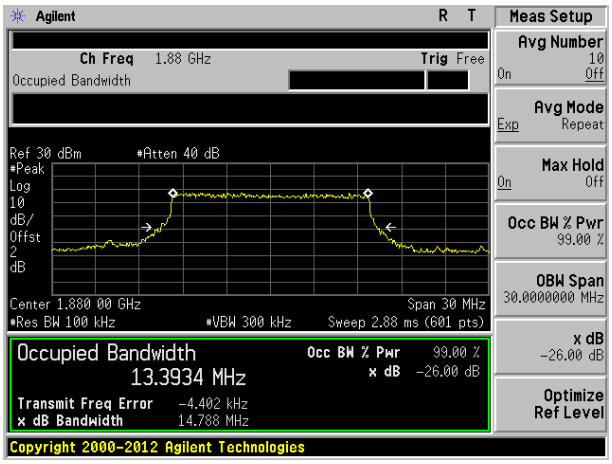


Highest channel

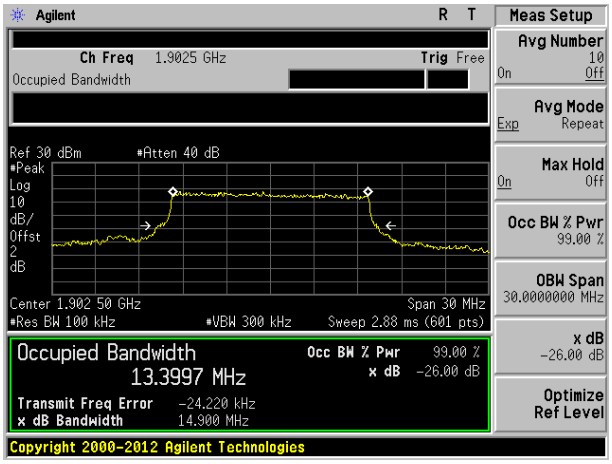
Test band: LTE Band 2	Channel Bandwidth:15MHz



Lowest channel

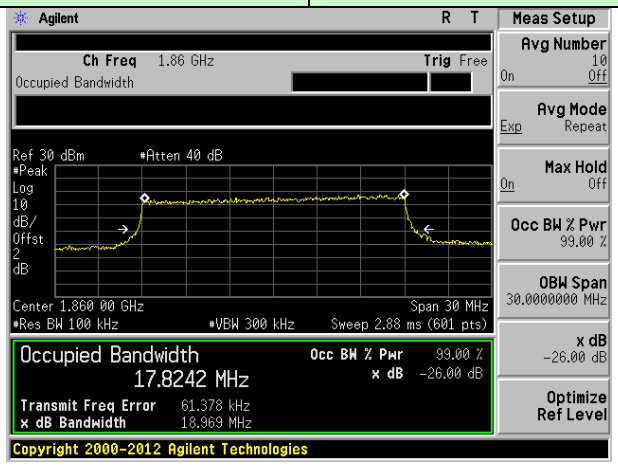


Middle channel

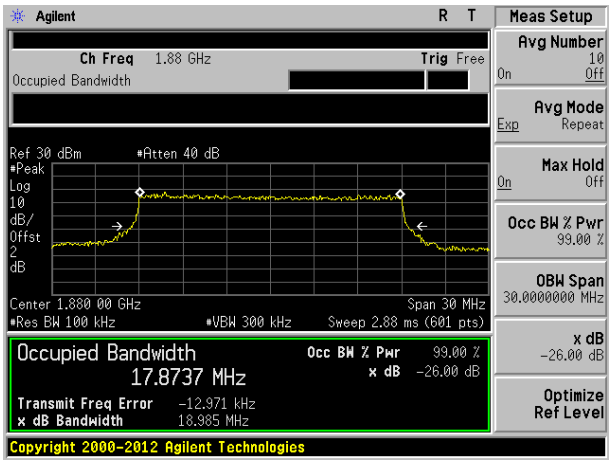


Highest channel

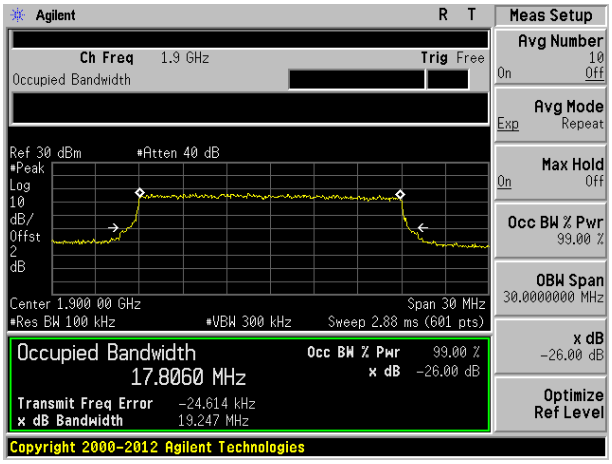
Test band: LTE Band 2	Channel Bandwidth:20MHz



Lowest channel

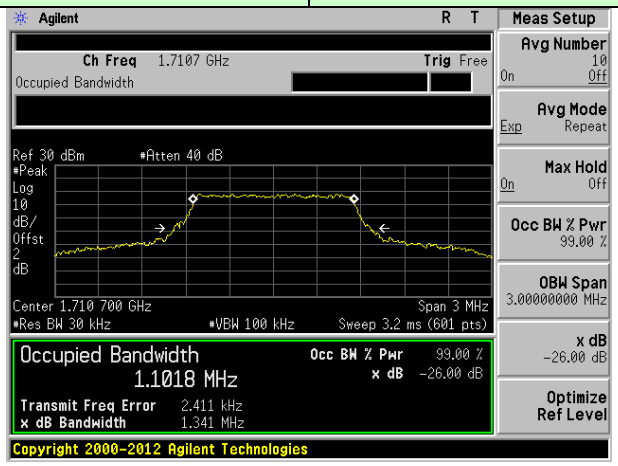


Middle channel

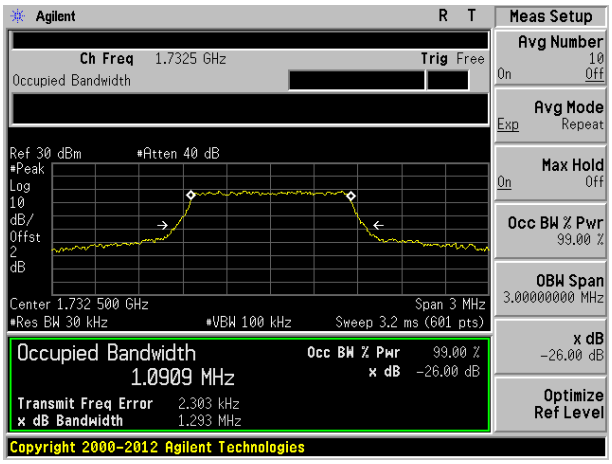


Highest channel

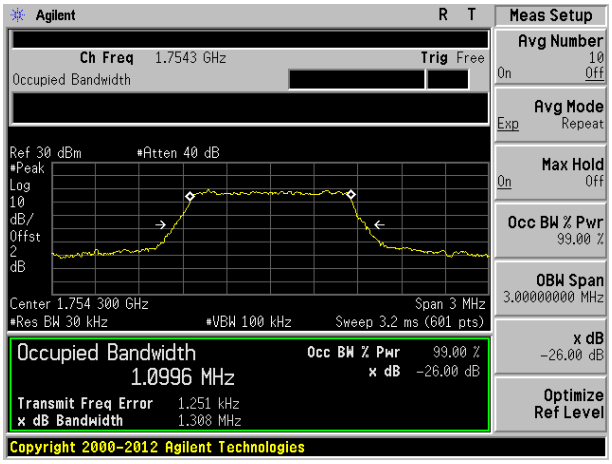
Test band: LTE Band 4	Channel Bandwidth: 1.4MHz



Lowest channel

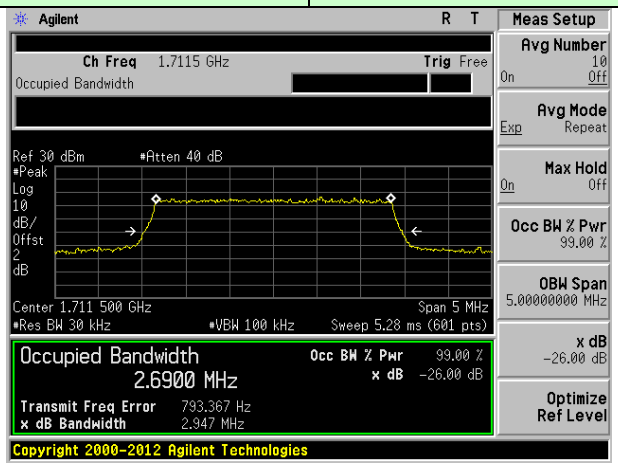


Middle channel

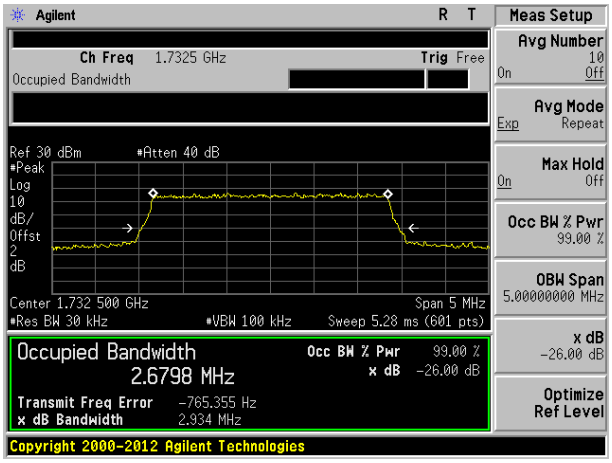


Highest channel

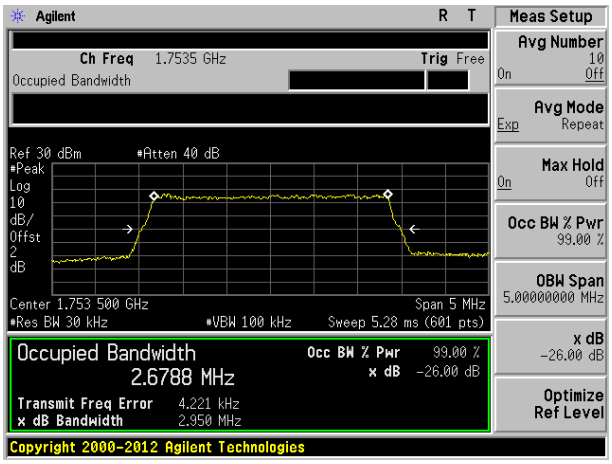
Test band: LTE Band 4	Channel Bandwidth: 3MHz



Lowest channel

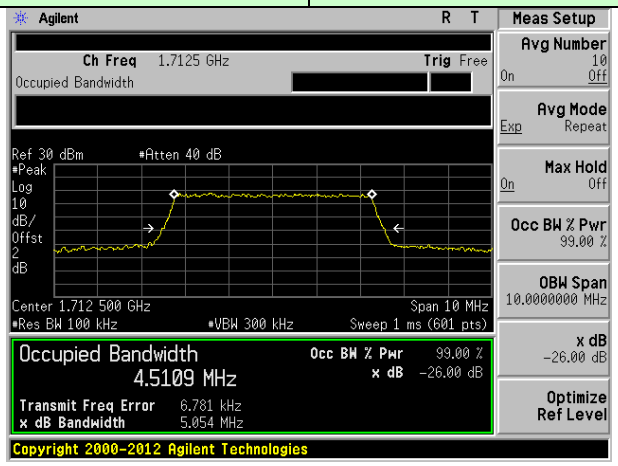


Middle channel

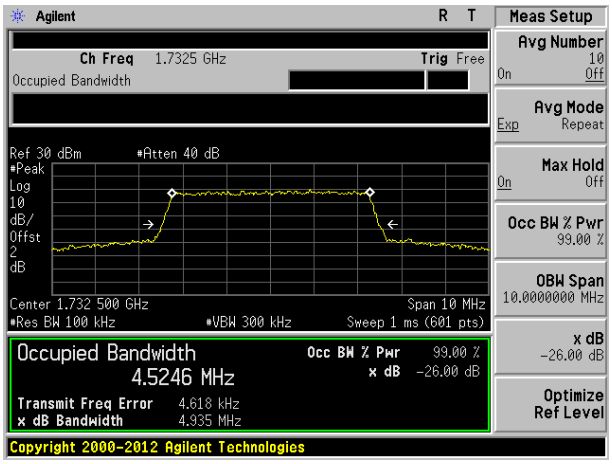


Highest channel

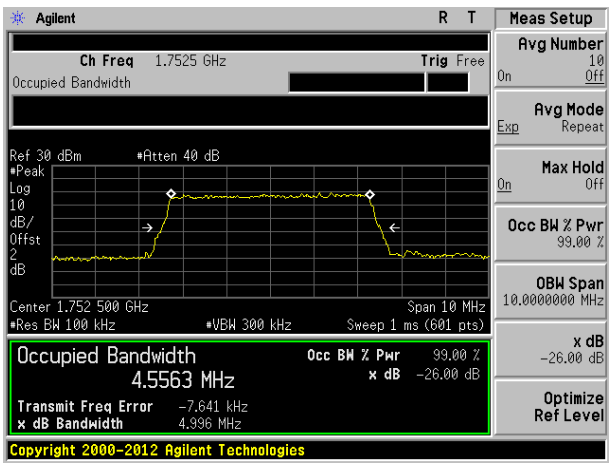
Test band: LTE Band 4	Channel Bandwidth: 5MHz



Lowest channel

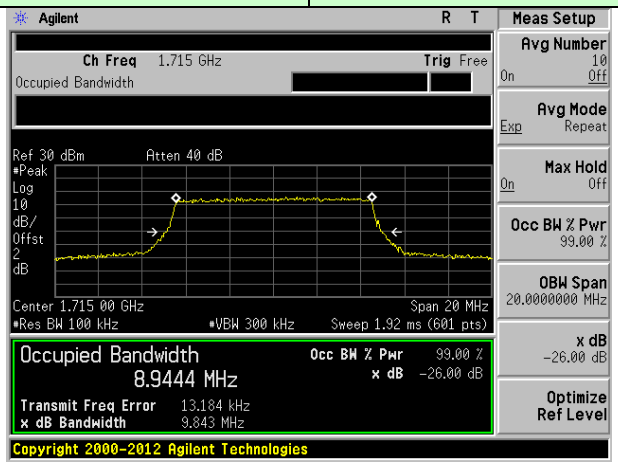


Middle channel

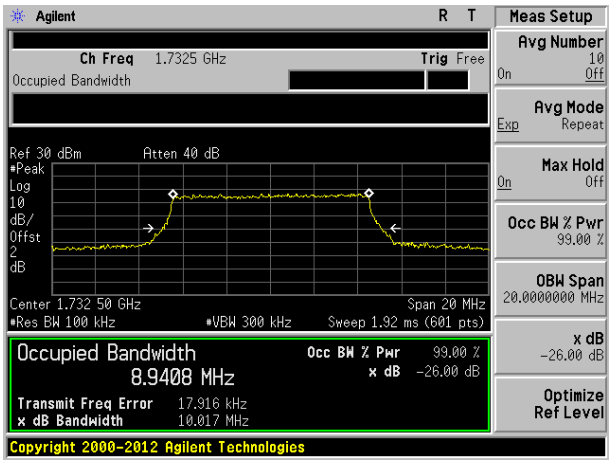


Highest channel

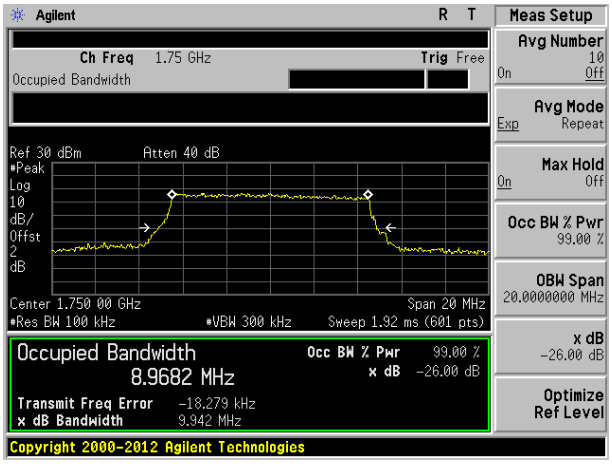
Test band: LTE Band 4	Channel Bandwidth: 10MHz



Lowest channel

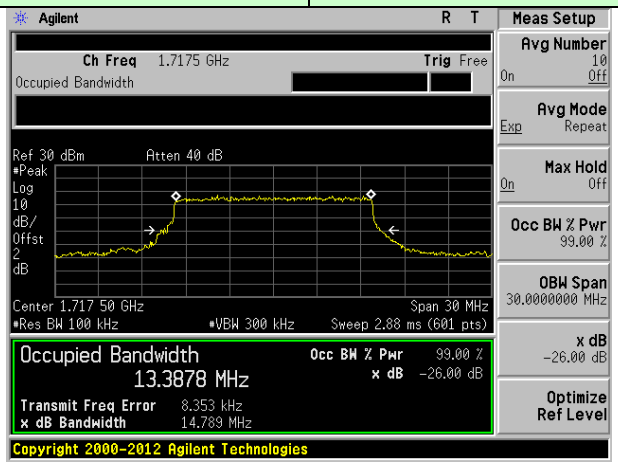


Middle channel

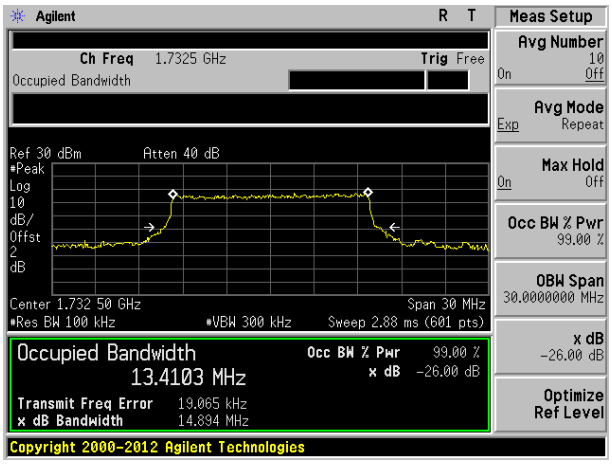


Highest channel

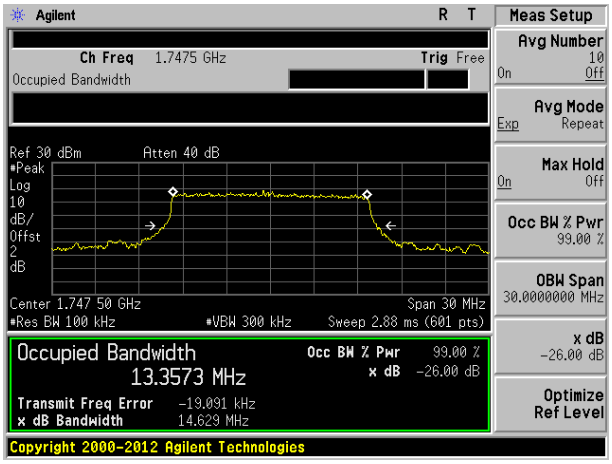
Test band: LTE Band 4	Channel Bandwidth: 15MHz



Lowest channel

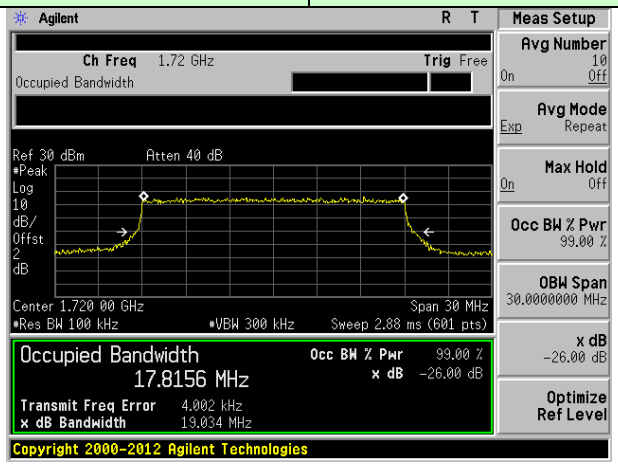


Middle channel

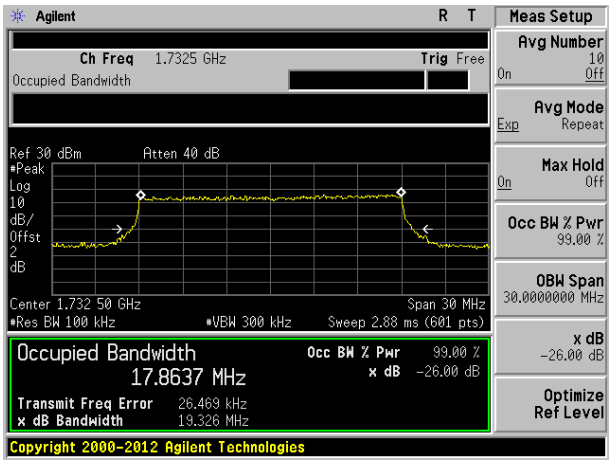


Highest channel

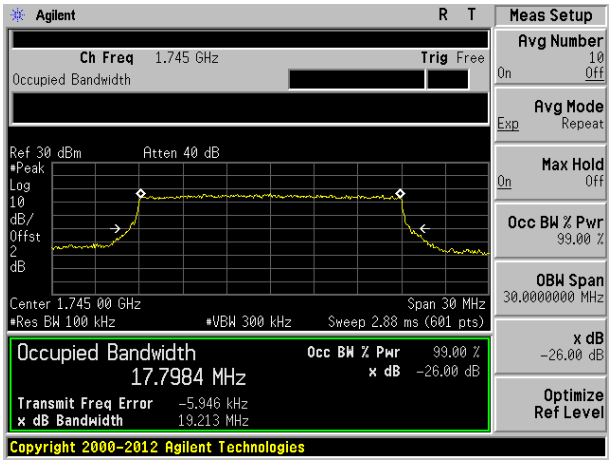
Test band: LTE Band 4	Channel Bandwidth: 20MHz



Lowest channel

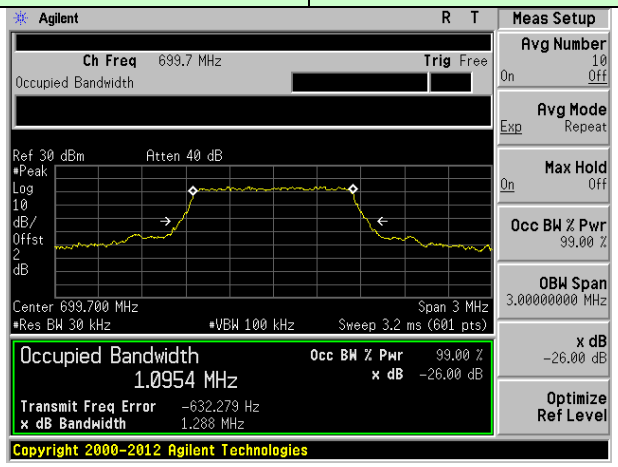


Middle channel

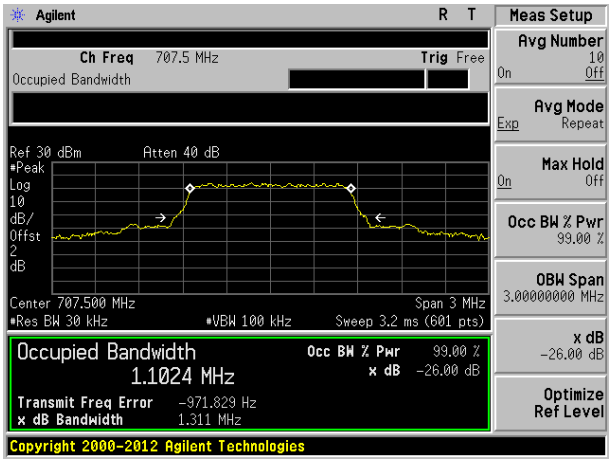


Highest channel

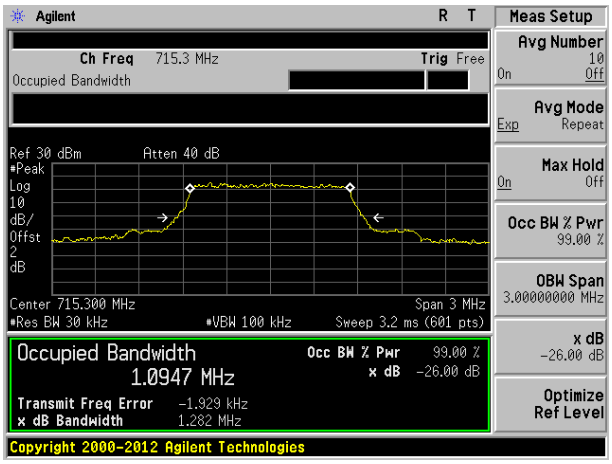
Test band: LTE Band 12	Channel Bandwidth: 1.4MHz



Lowest channel

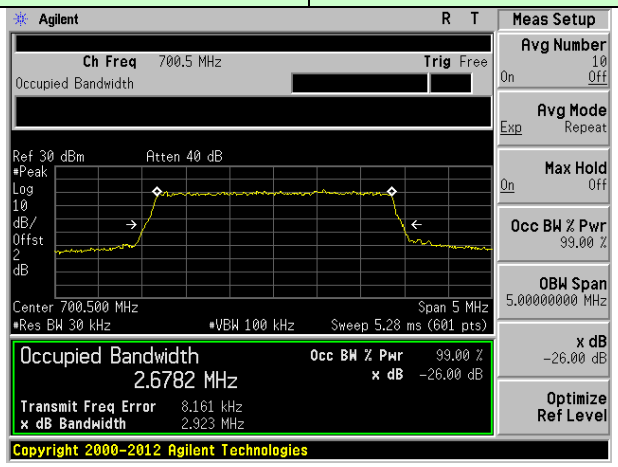


Middle channel

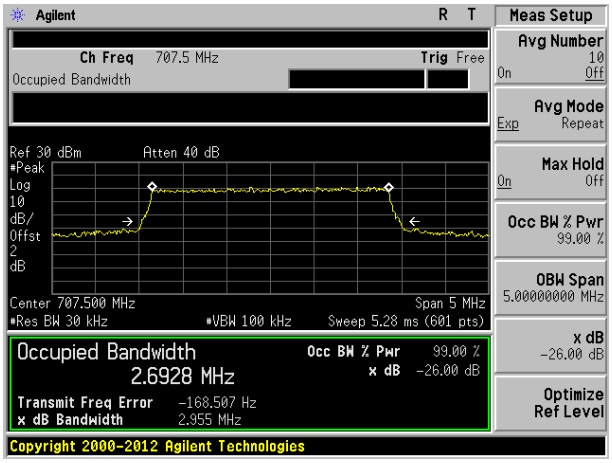


Highest channel

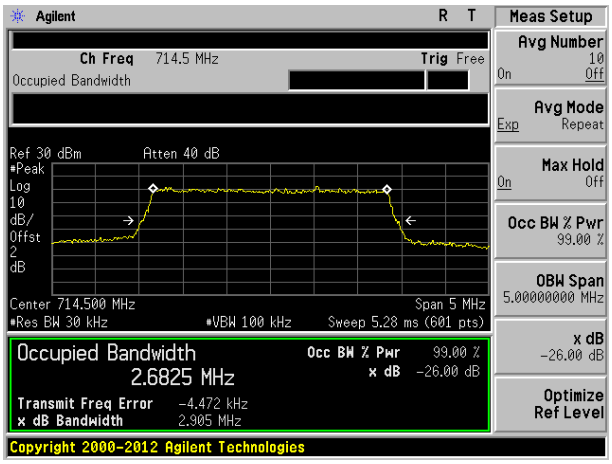
Test band: LTE Band 12	Channel Bandwidth: 3MHz



Lowest channel

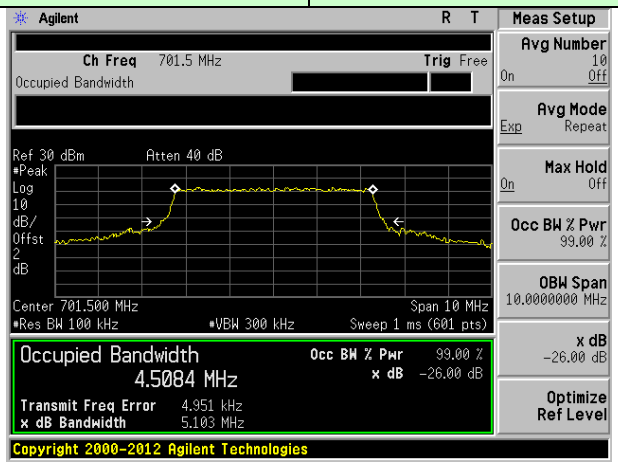


Middle channel

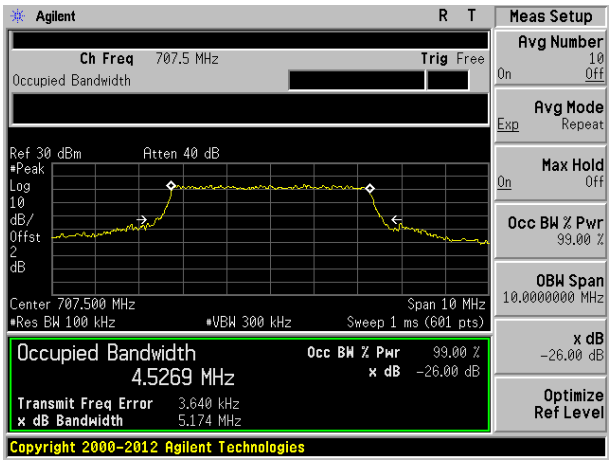


Highest channel

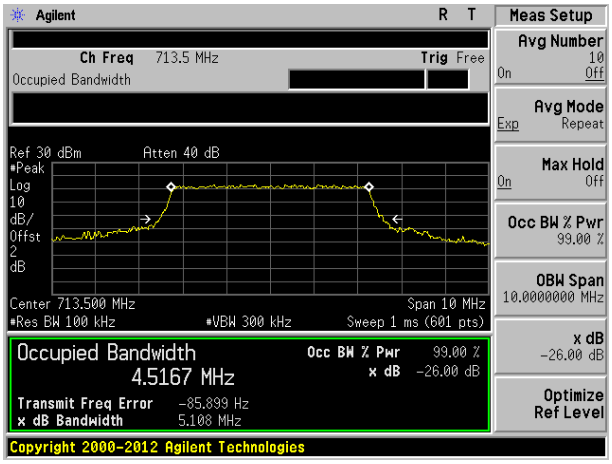
Test band: LTE Band 12	Channel Bandwidth: 5MHz



Lowest channel

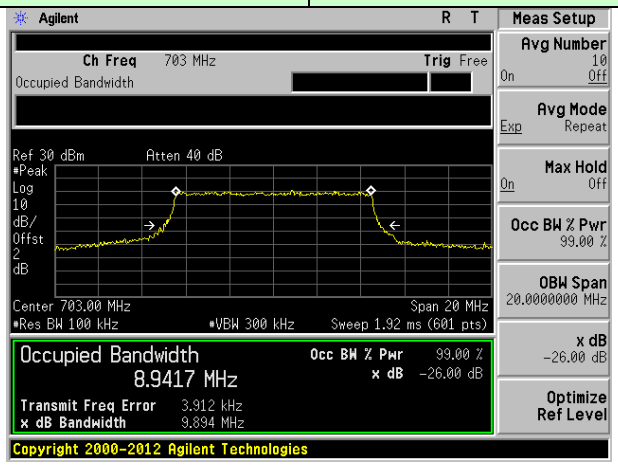


Middle channel

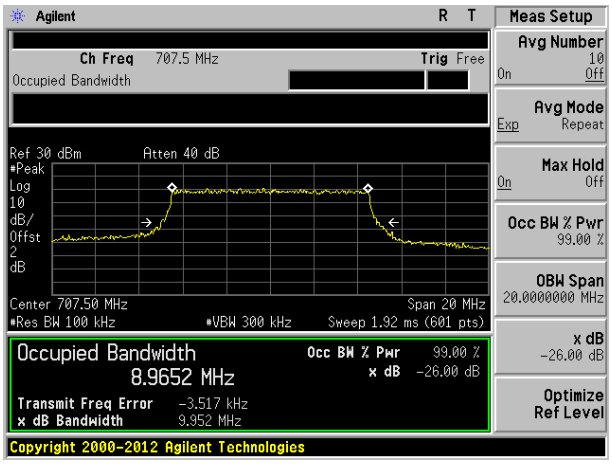


Highest channel

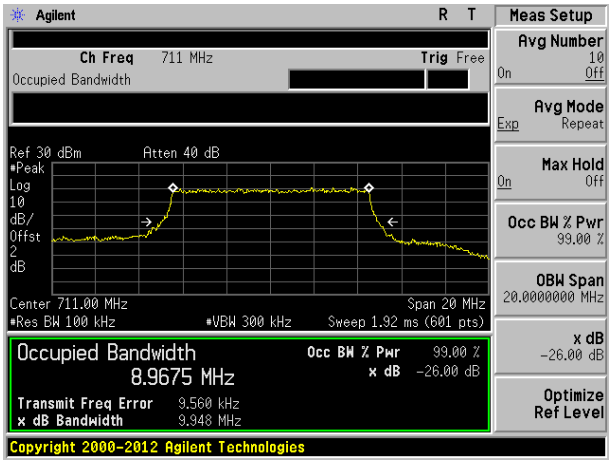
Test band: LTE Band 12	Channel Bandwidth: 10MHz



Lowest channel



Middle channel

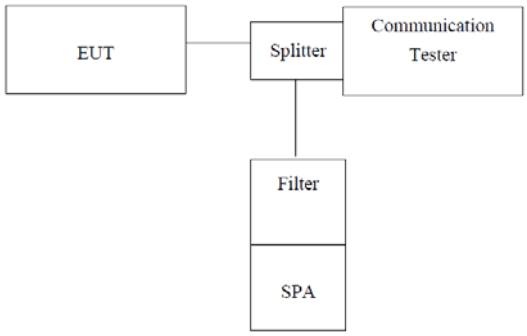


Highest channel

7.6 MODULATION CHARACTERISTIC

According to FCC § 2.1047(d), Part 27 there is no specific requirement for digital modulation, therefore modulation characteristic is not presented.

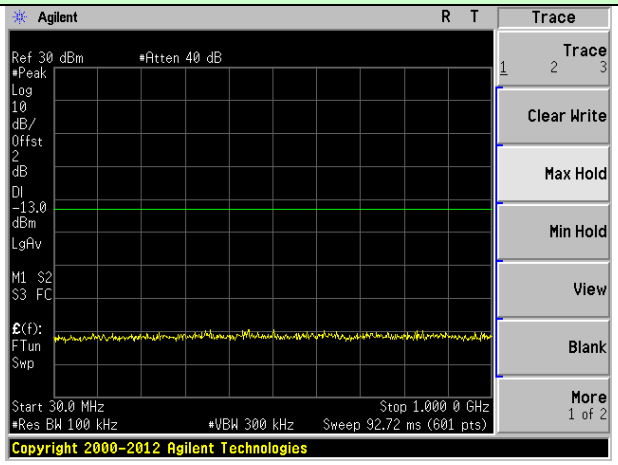
7.7 Out of band emission at antenna terminals

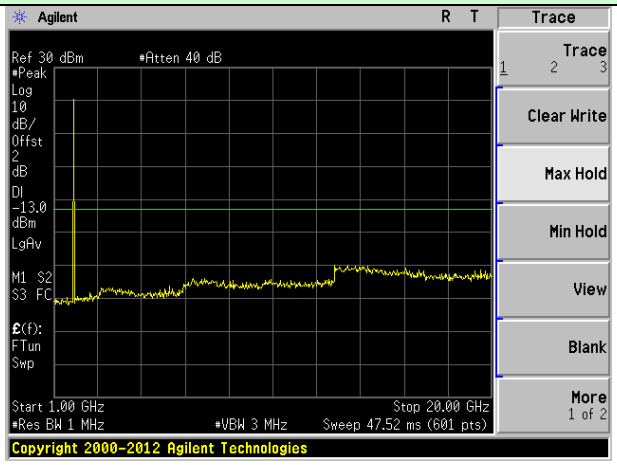
Test Requirement:	Part 24.238 (a); FCC Part 27.53(h)/(g)
Test Method:	FCC part2.1051
Limit:	-13dBm
Test setup:	 *Note: Measurement setup for testing on Antenna connector*
Test Procedure:	1 The RF output of the transceiver was connected to a spectrum analyzer through appropriate attenuation. 2 The resolution 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, VBW = 1MHz, 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 6.0 for details
Test mode:	Refer to section 7.1 for details
Test results:	Pass

Remark: Both modulation modes have been tested, showing only the worst QPSK test data.

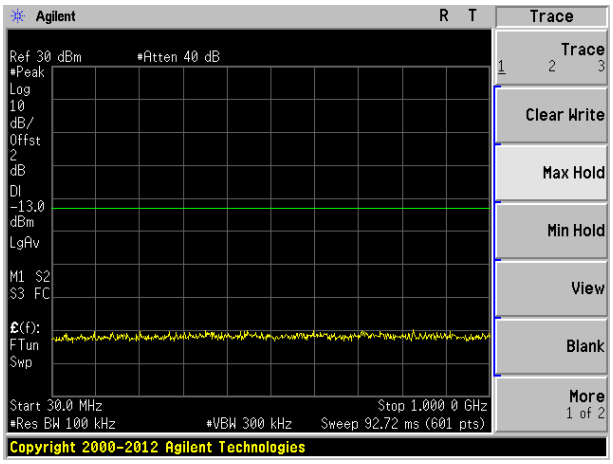
Test plot as follows:

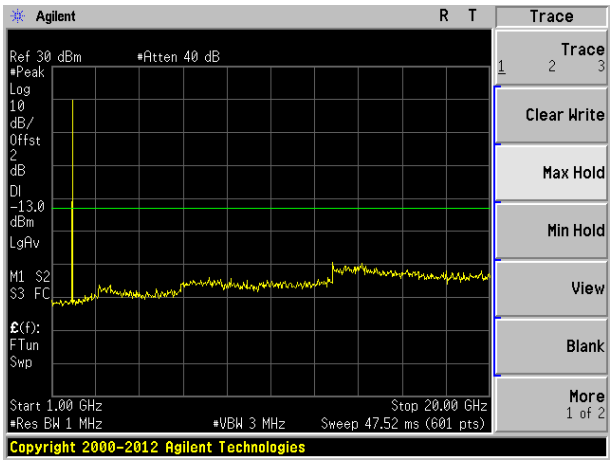
Test Mode: LTE Band 2	Channel Bandwidth: 1.4MHz



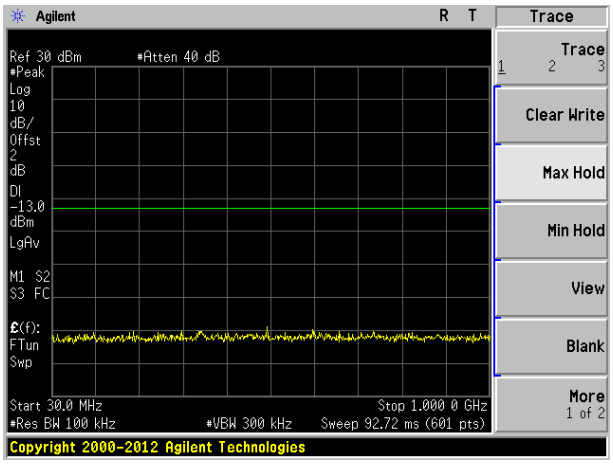


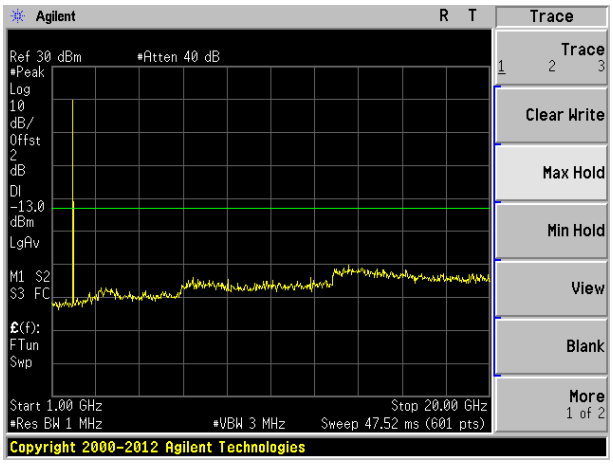
Lowest channel





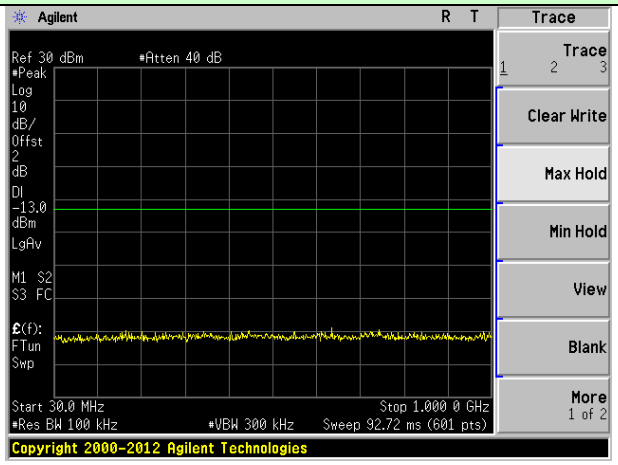
Middle channel

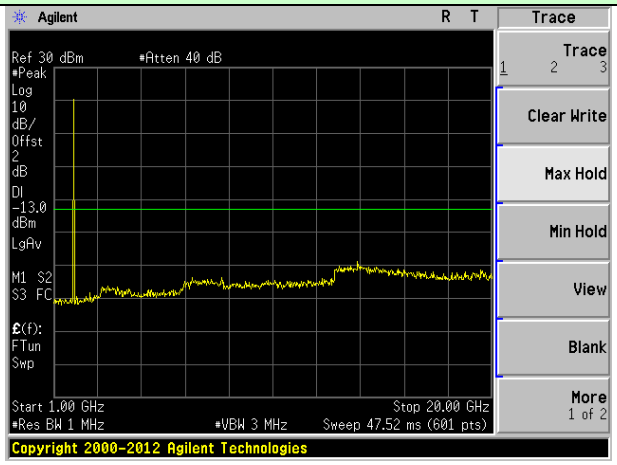




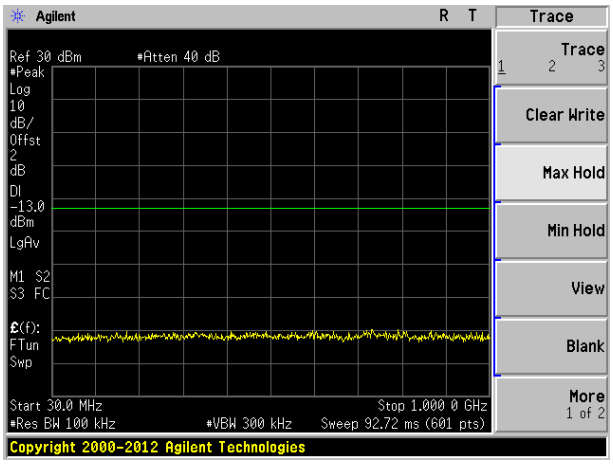
Highest channel

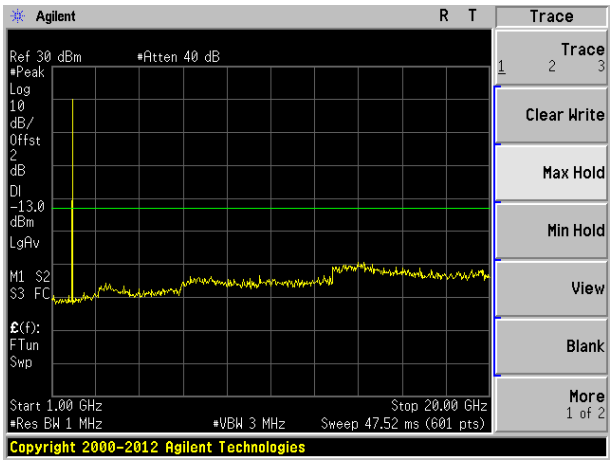
Test Mode: LTE Band 2	Channel Bandwidth: 3MHz



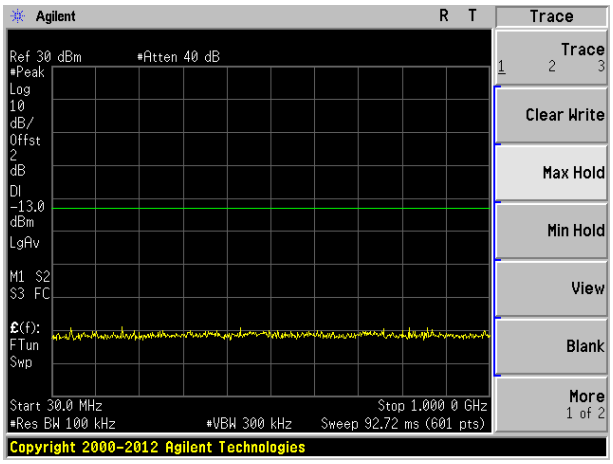


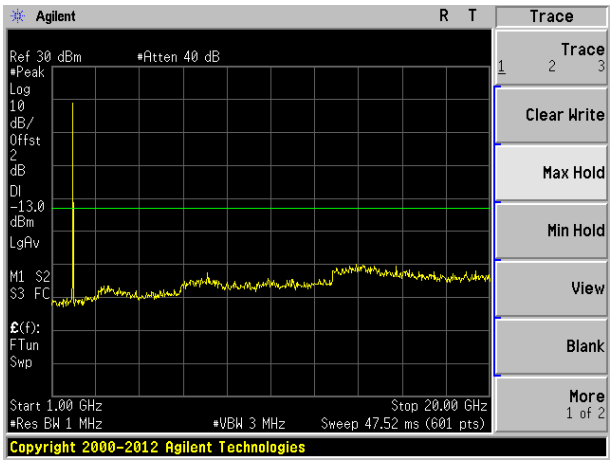
Lowest channel





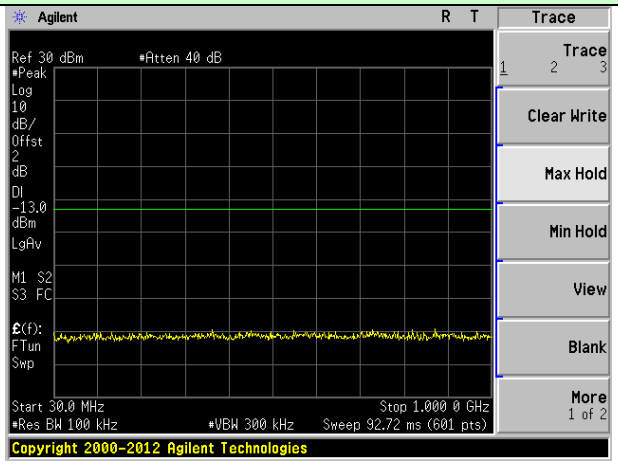
Middle channel

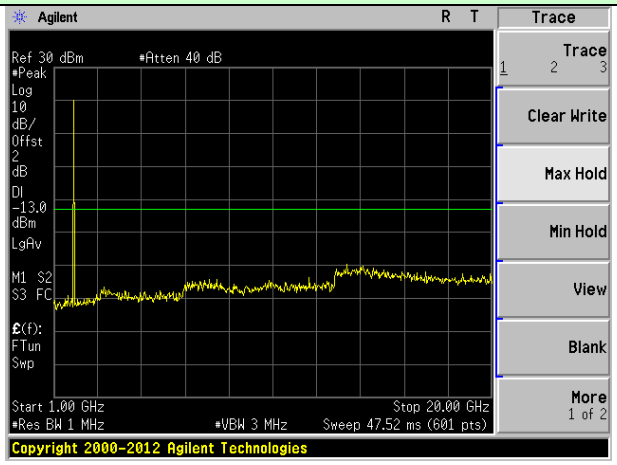




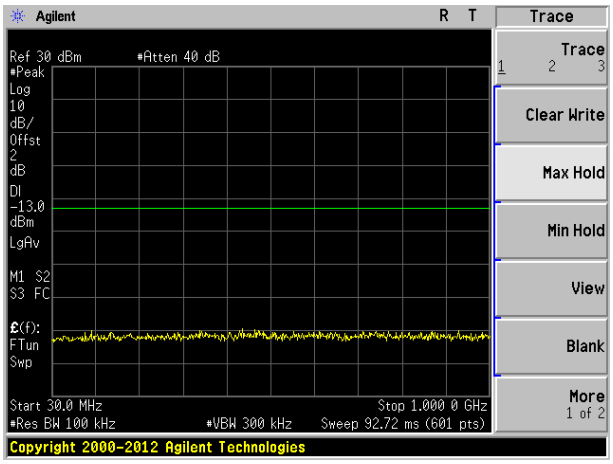
Highest channel

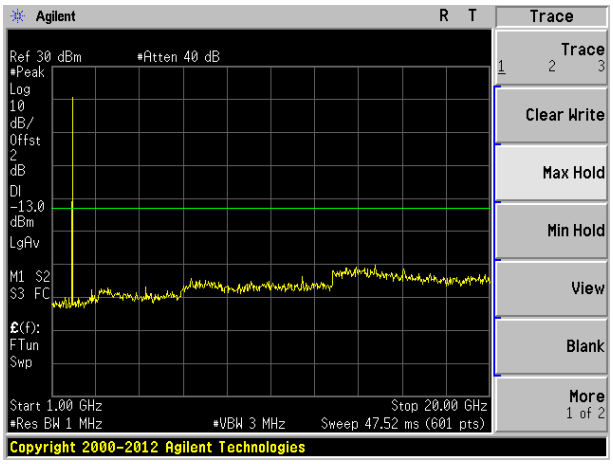
Test Mode: LTE Band 2	Channel Bandwidth: 5MHz



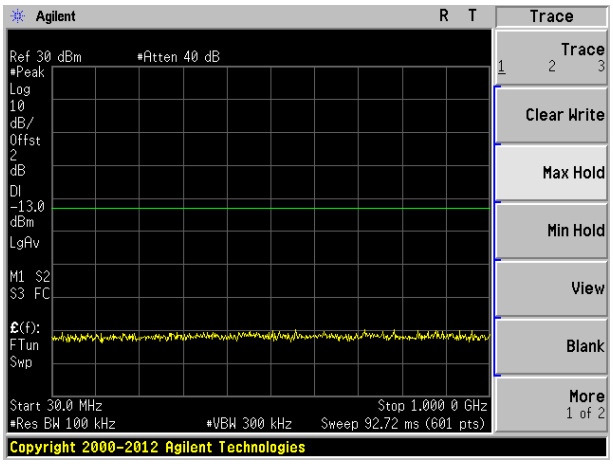


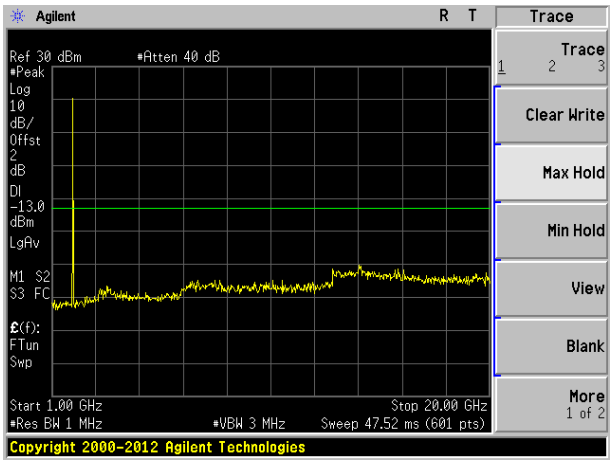
Lowest channel





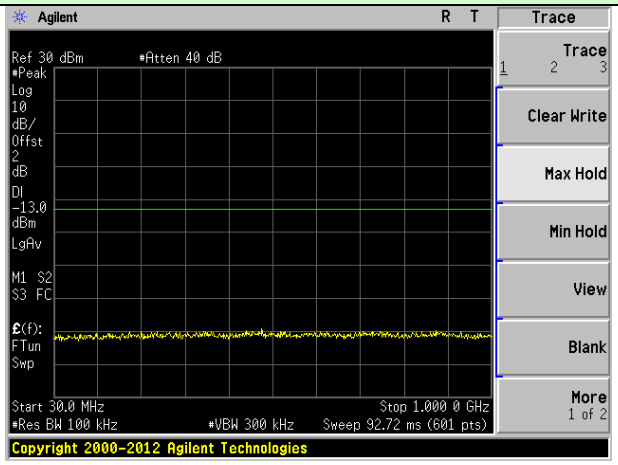
Middle channel

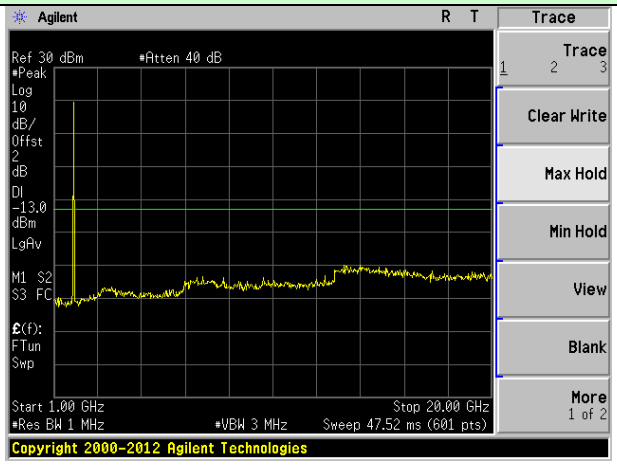




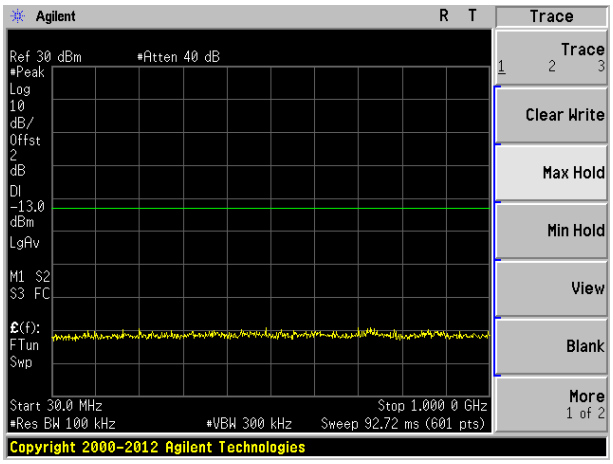
Highest channel

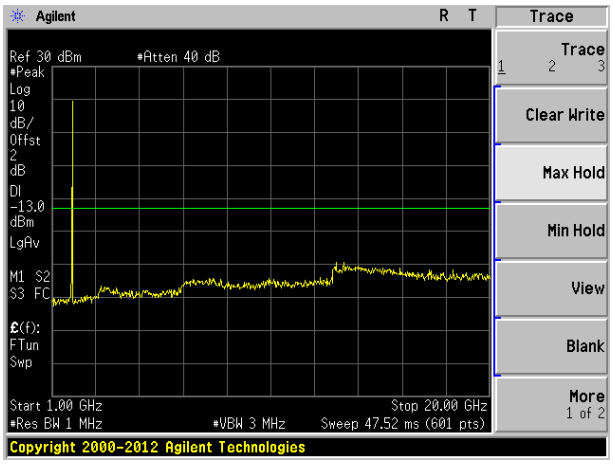
Test Mode: LTE Band 2	Channel Bandwidth: 10MHz



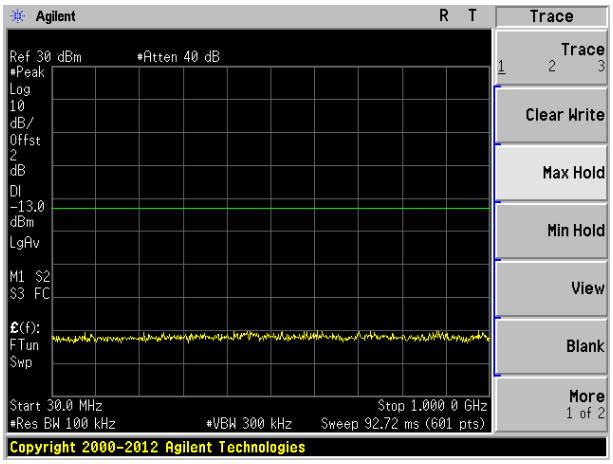


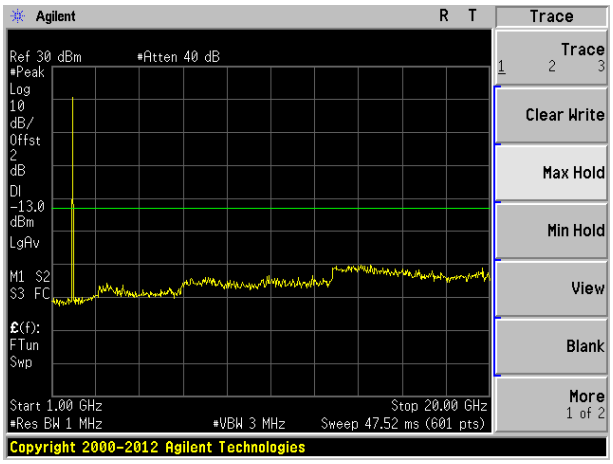
Lowest channel





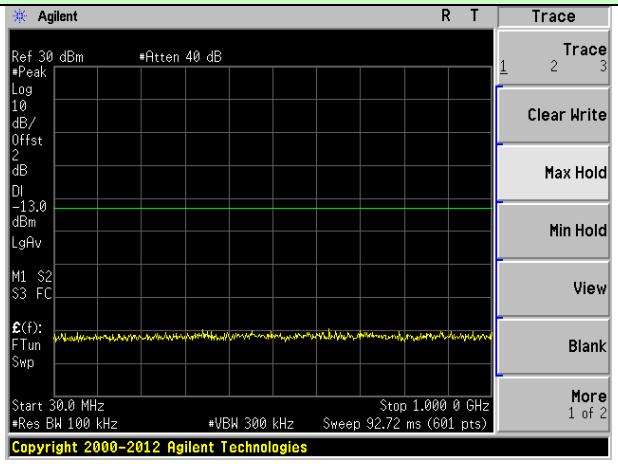
Middle channel

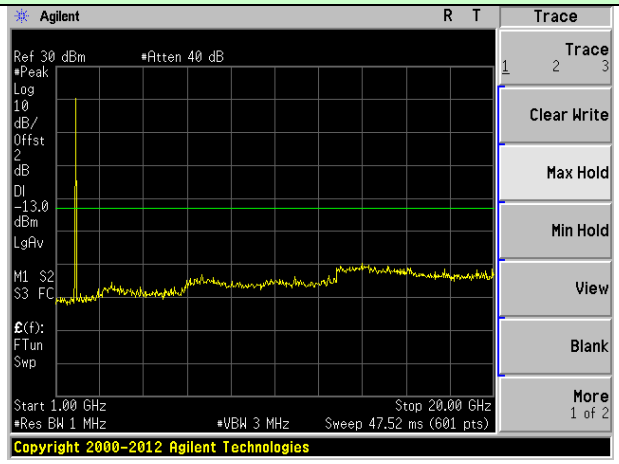




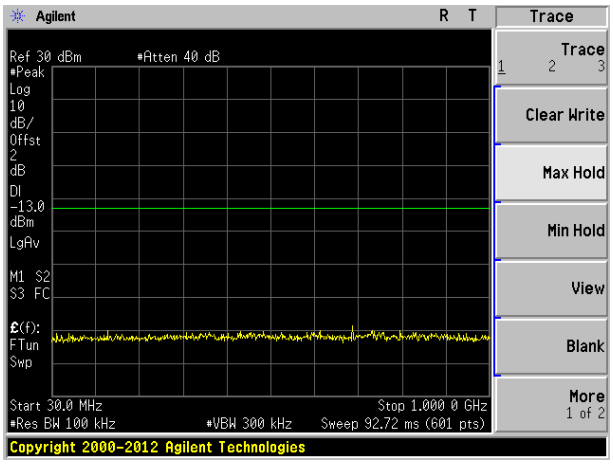
Highest channel

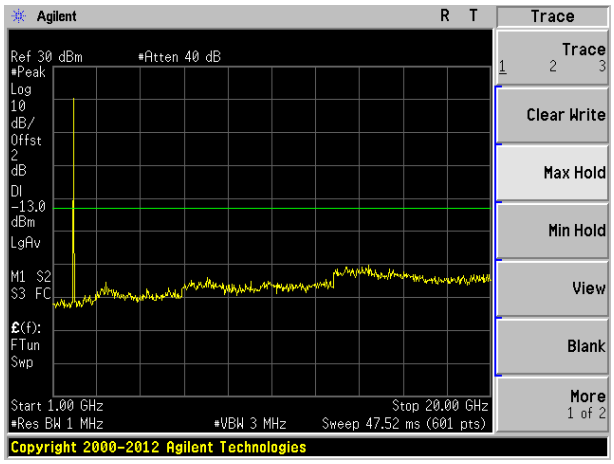
Test Mode: LTE Band 2	Channel Bandwidth: 15MHz



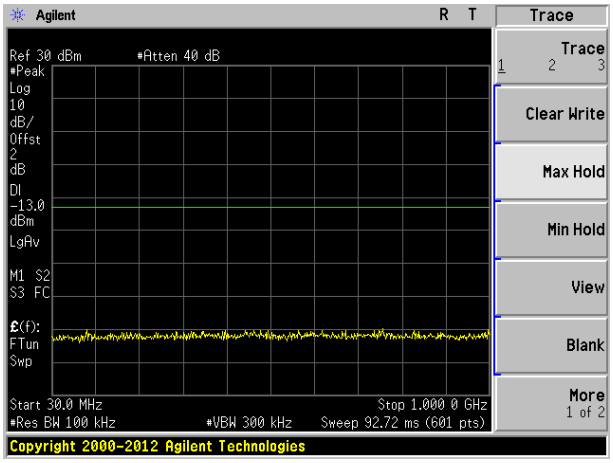


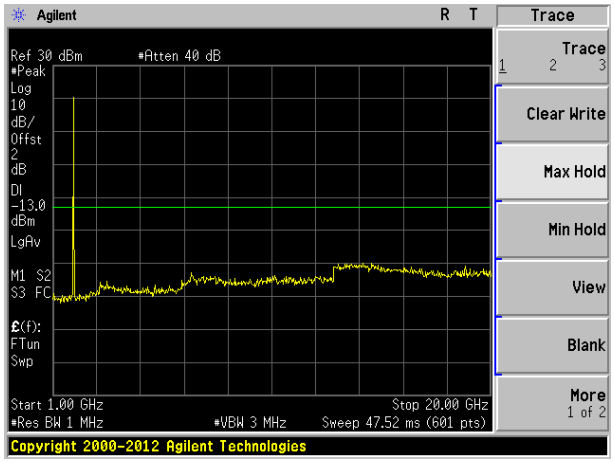
Lowest channel





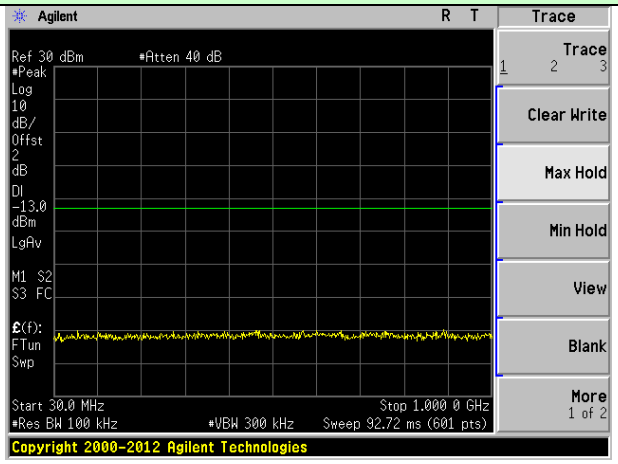
Middle channel

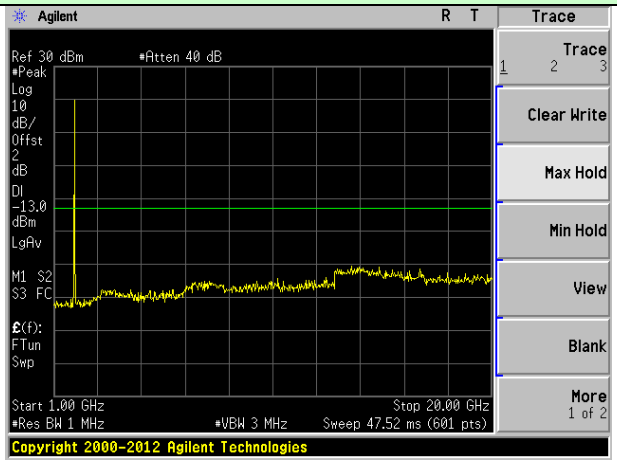




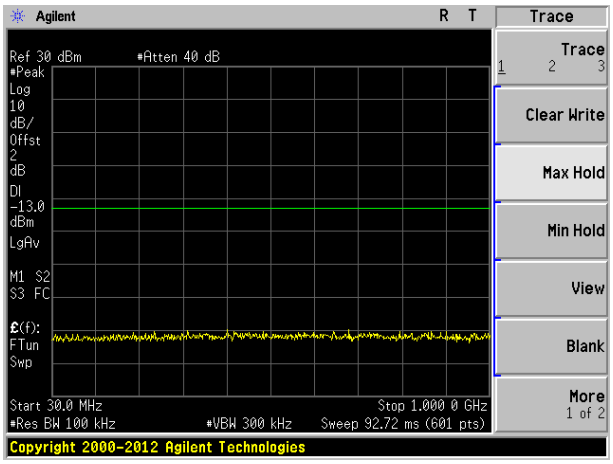
Highest channel

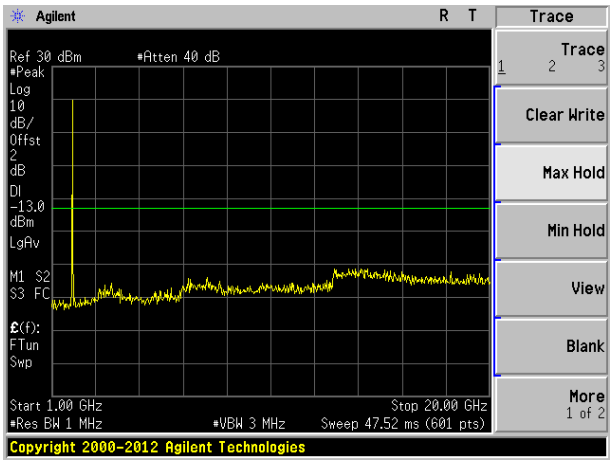
Test Mode: LTE Band 2	Channel Bandwidth: 20MHz



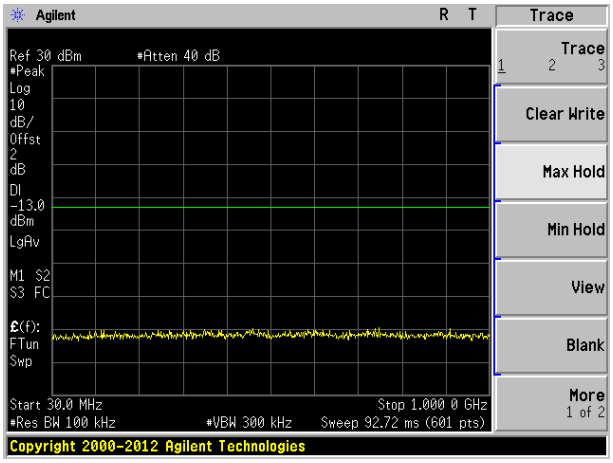


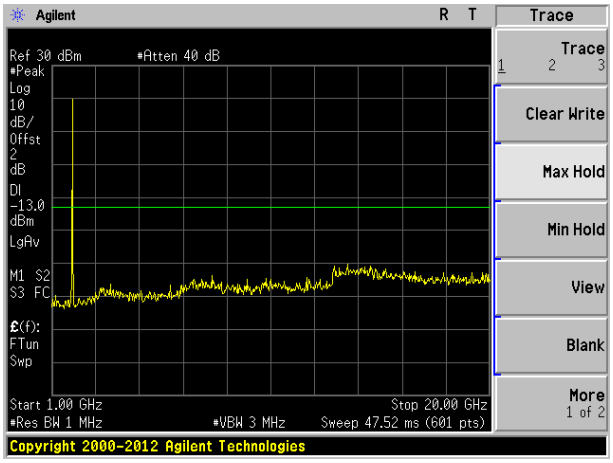
Lowest channel





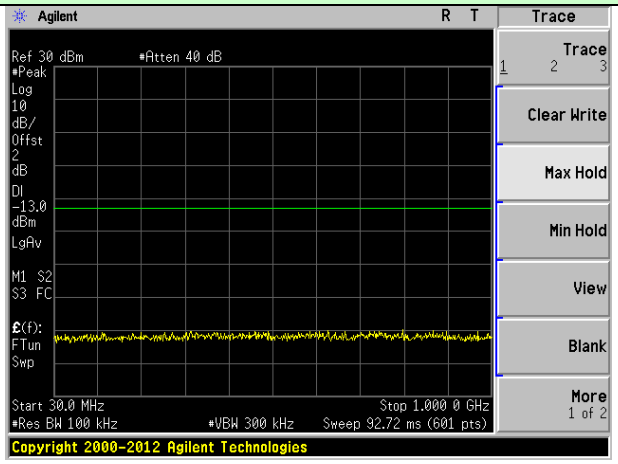
Middle channel

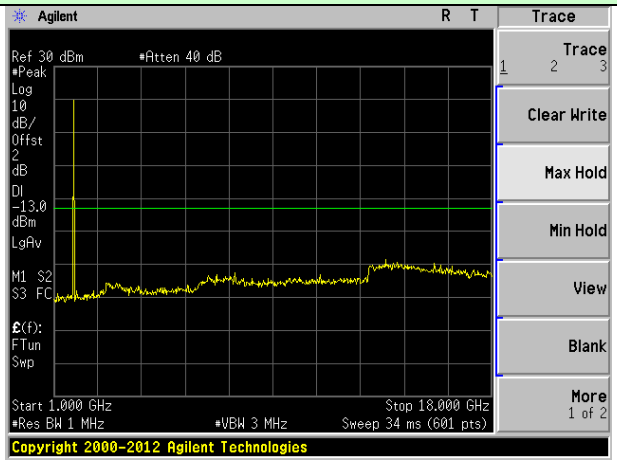




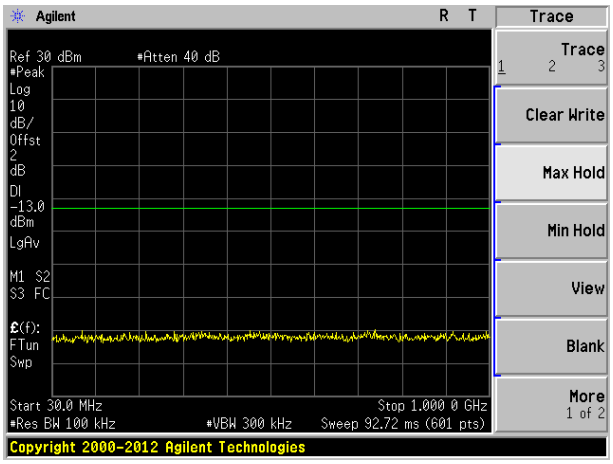
Highest channel

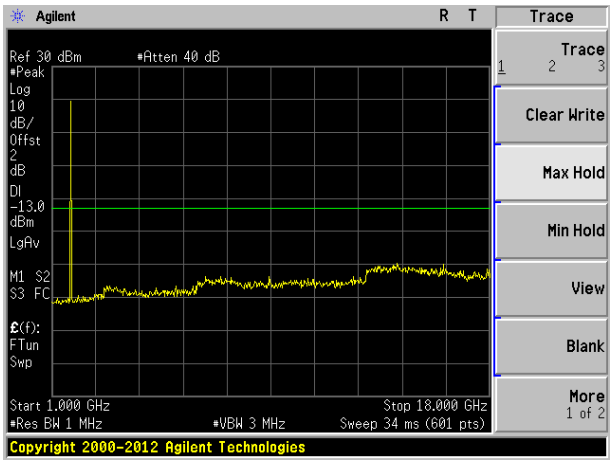
Test Mode: LTE Band 4	Channel Bandwidth: 1.4MHz



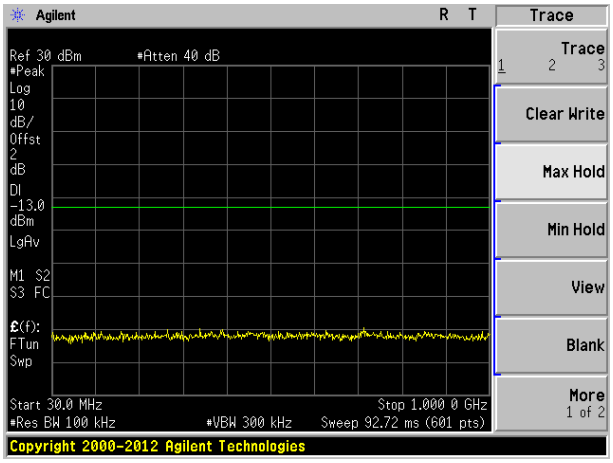


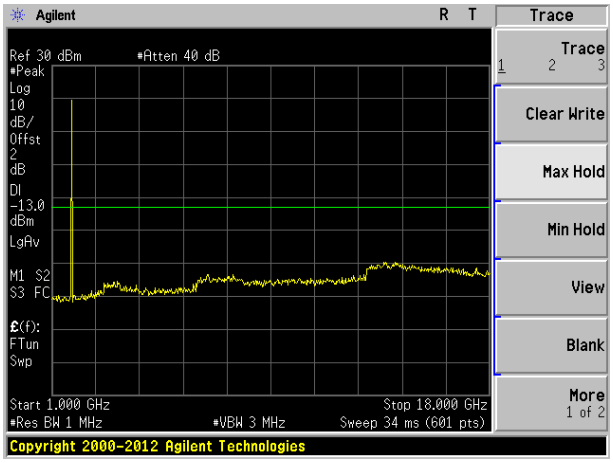
Lowest channel





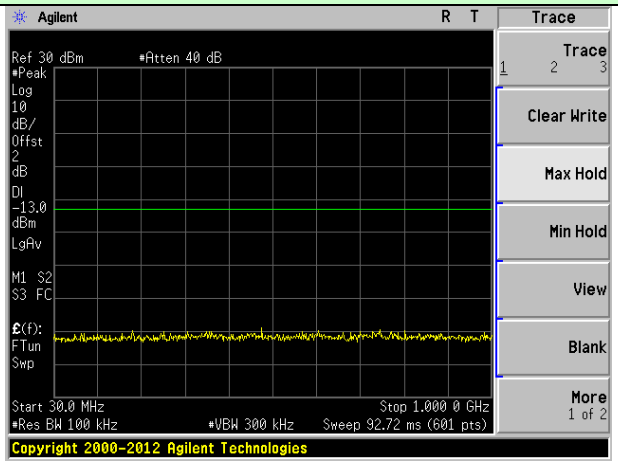
Middle channel

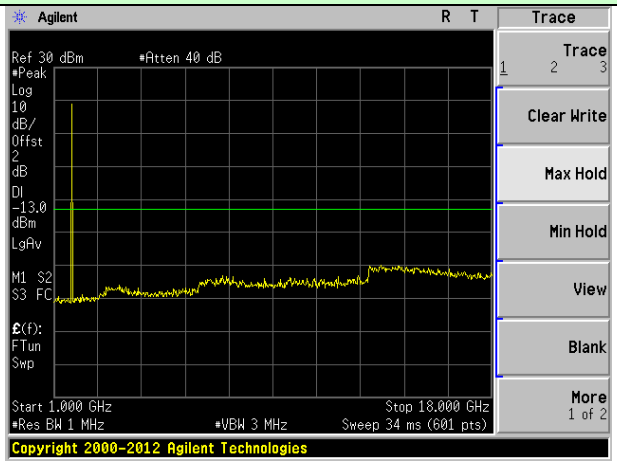




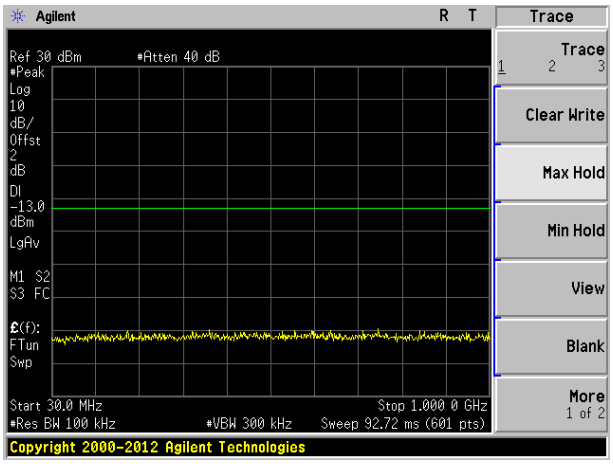
Highest channel

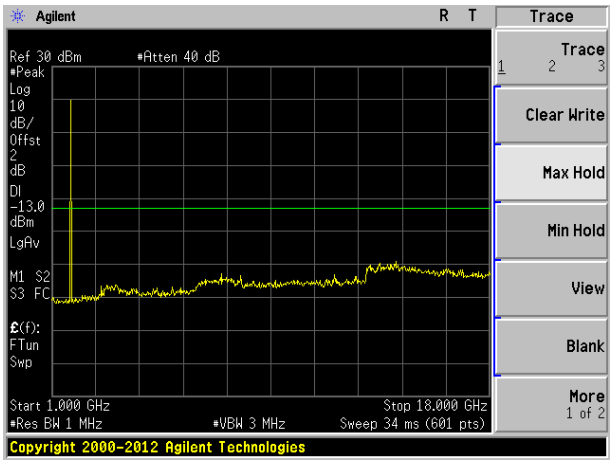
Test Mode: LTE Band 4	Channel Bandwidth: 3MHz



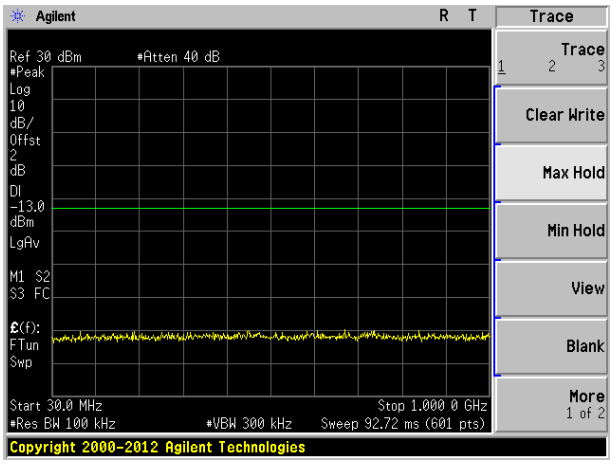


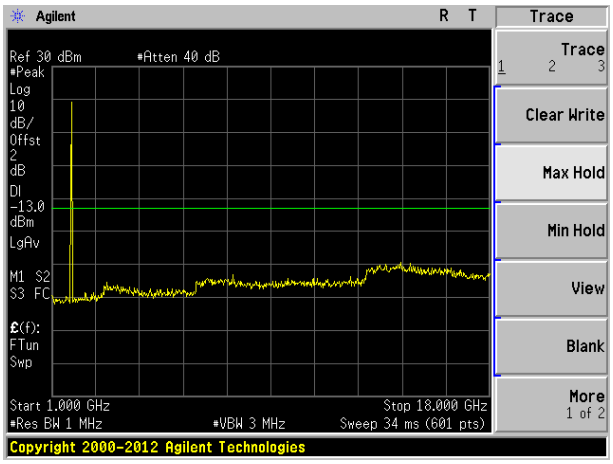
Lowest channel





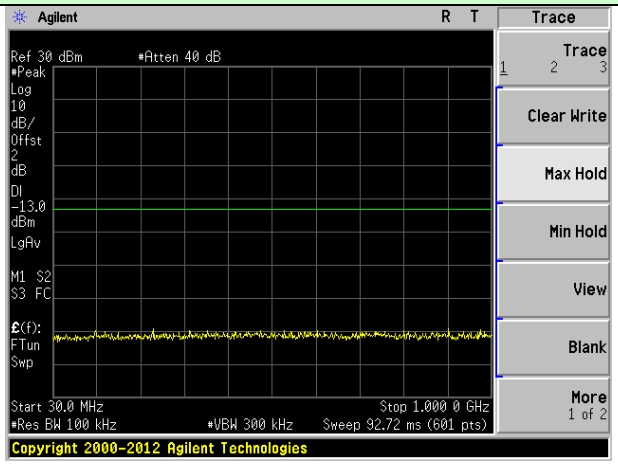
Middle channel

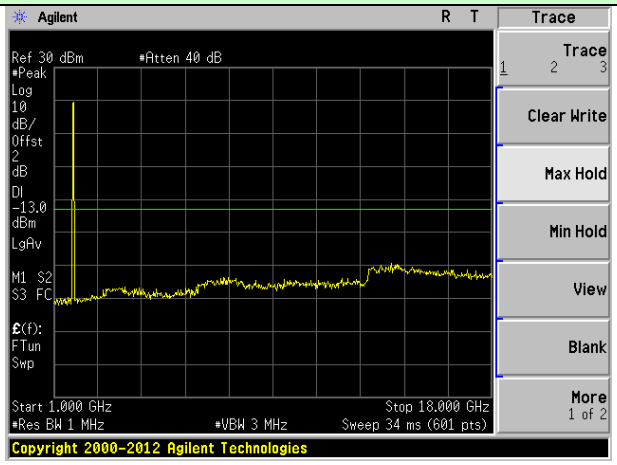




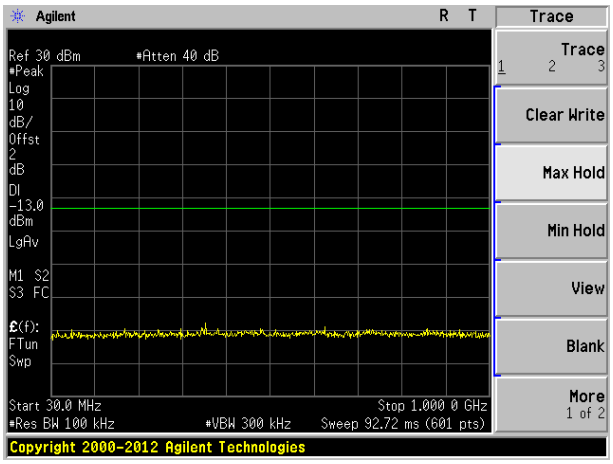
Highest channel

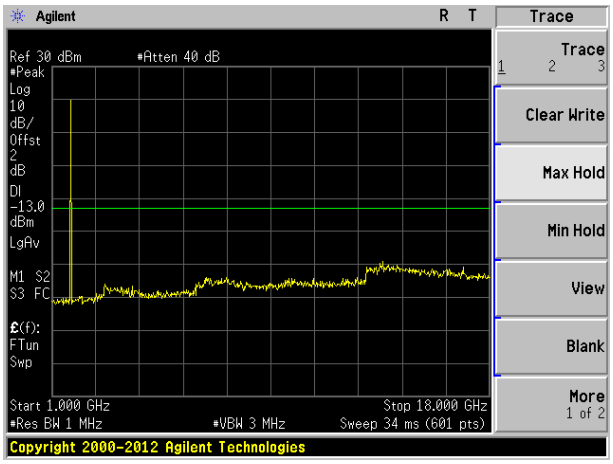
Test Mode: LTE Band 4	Channel Bandwidth: 5MHz



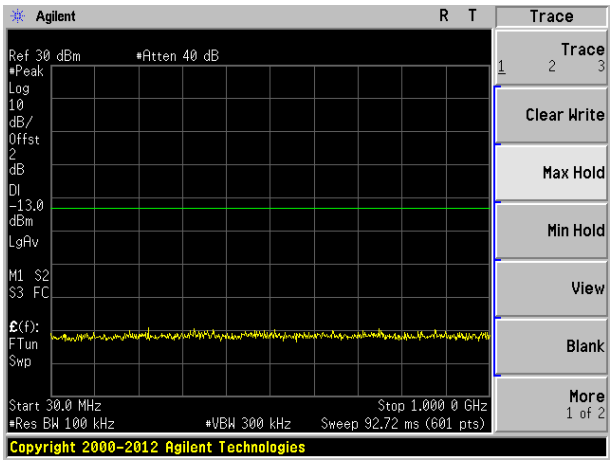


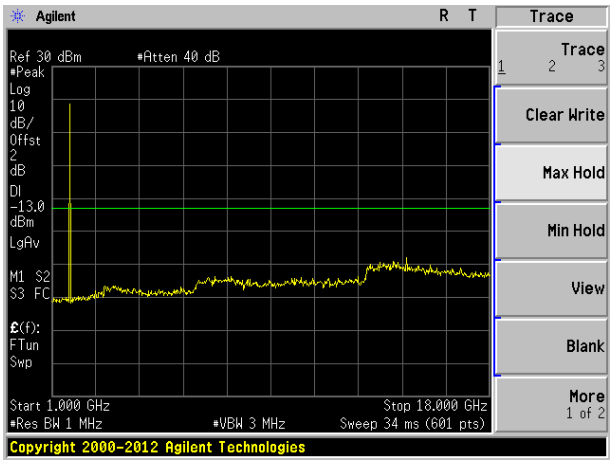
Lowest channel





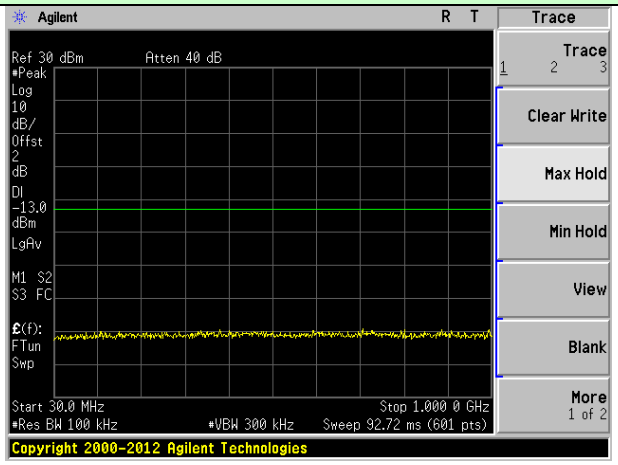
Middle channel

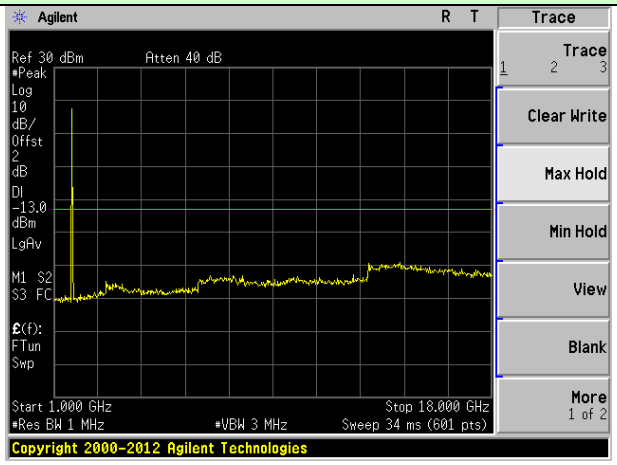




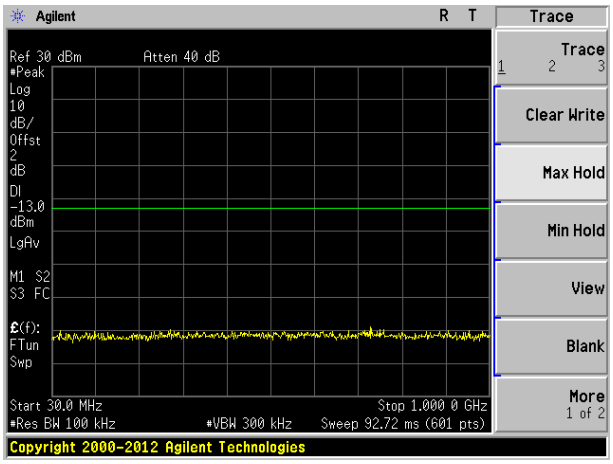
Highest channel

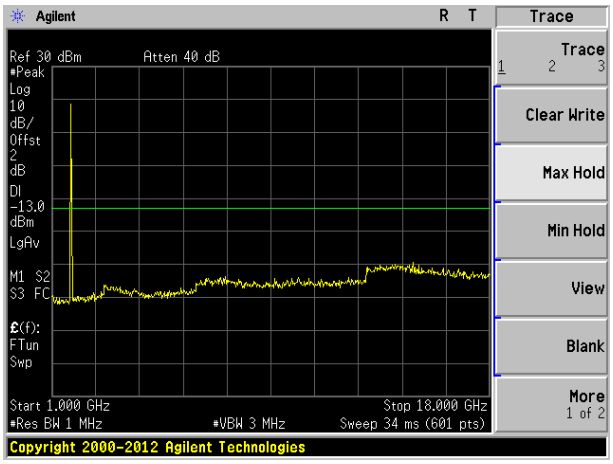
Test Mode: LTE Band 4	Channel Bandwidth: 10MHz



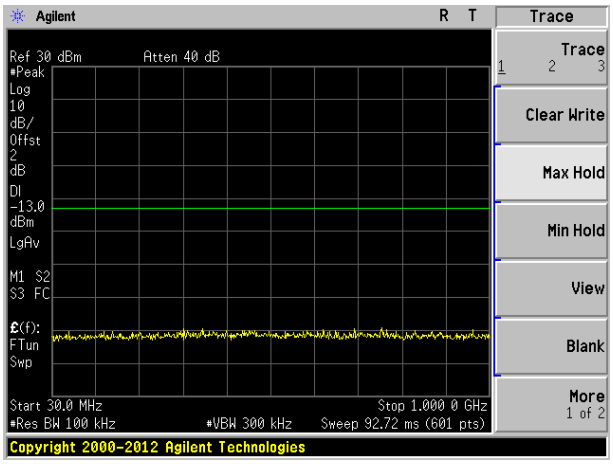


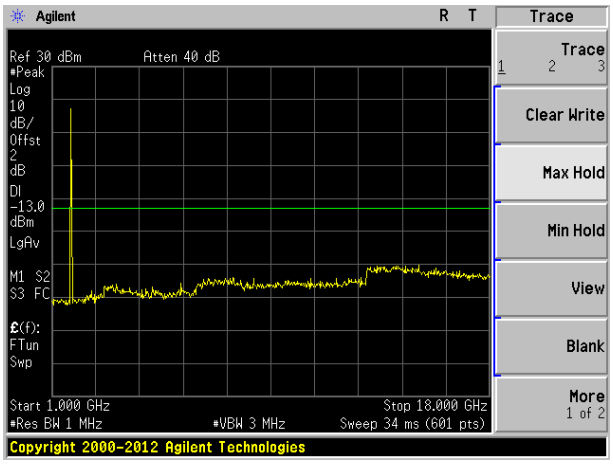
Lowest channel





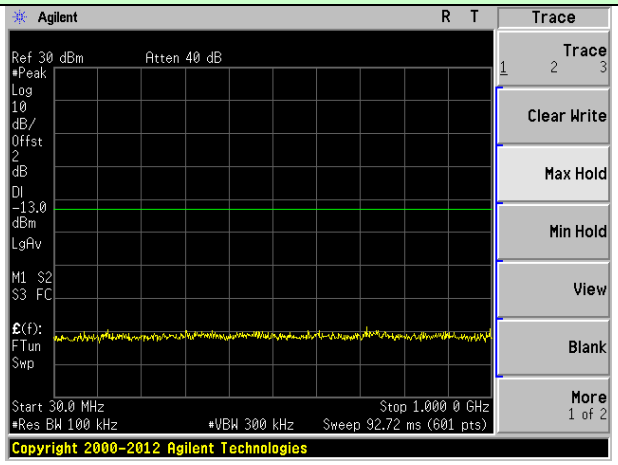
Middle channel

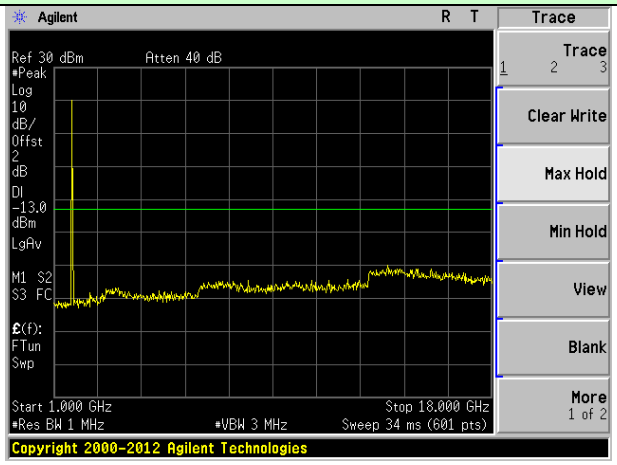




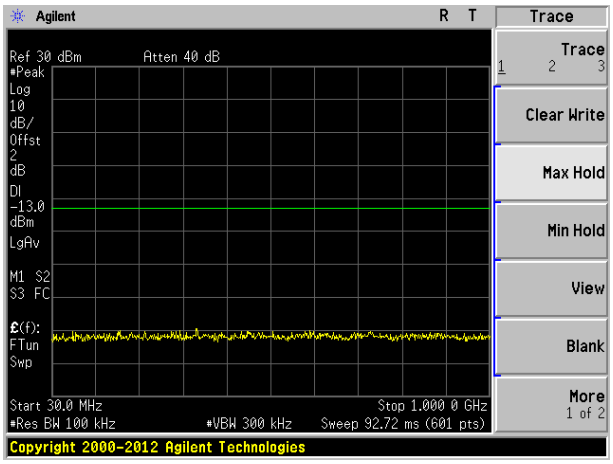
Highest channel

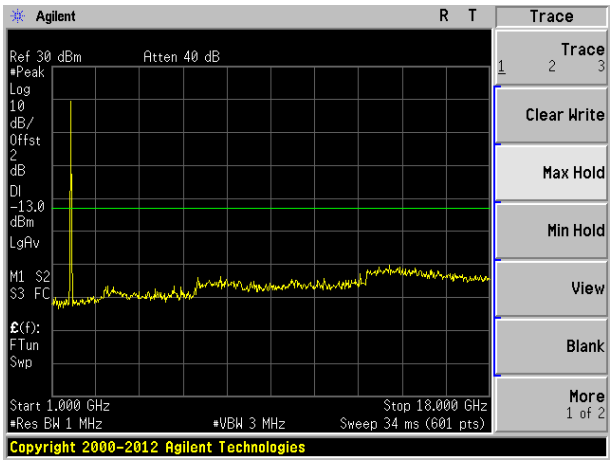
Test Mode: LTE Band 4	Channel Bandwidth: 15MHz



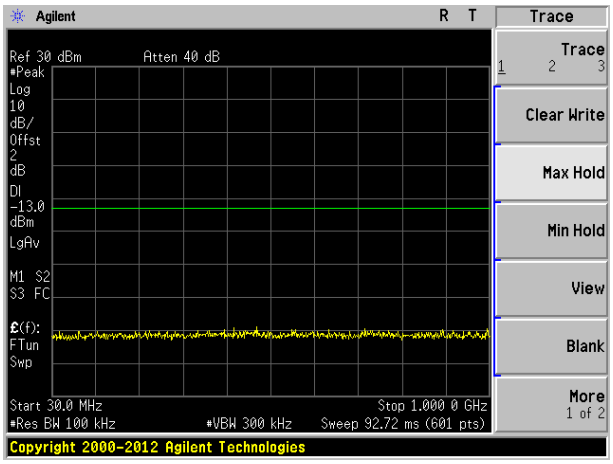


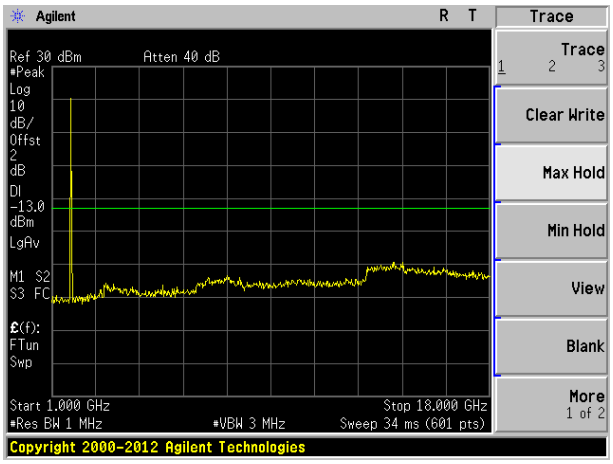
Lowest channel





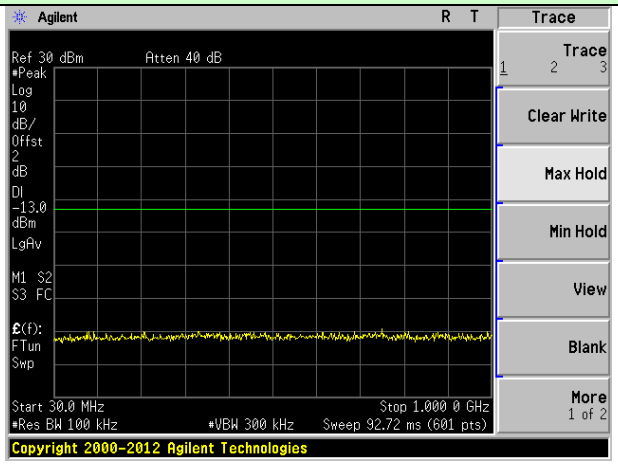
Middle channel

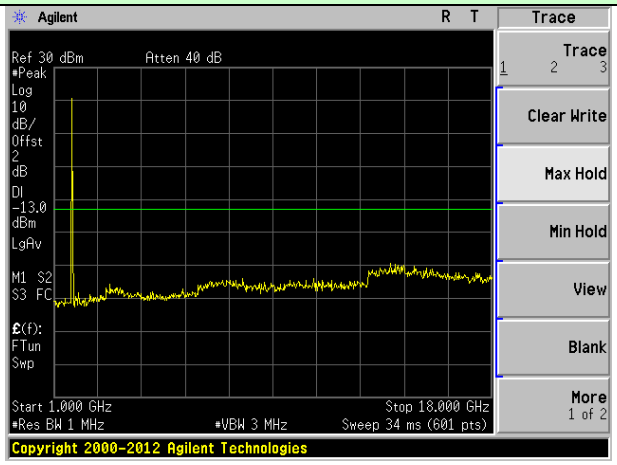




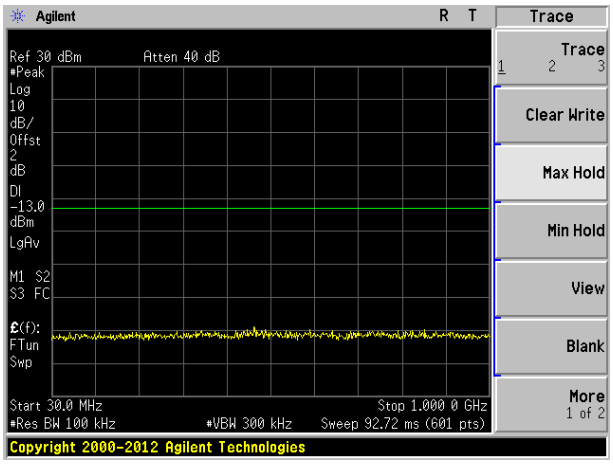
Highest channel

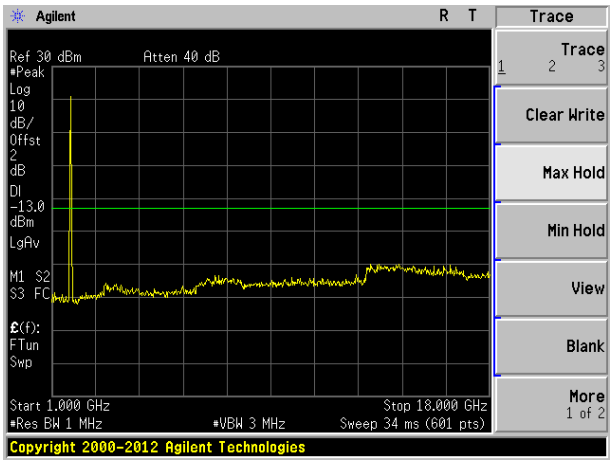
Test Mode: LTE Band 4	Channel Bandwidth: 20MHz



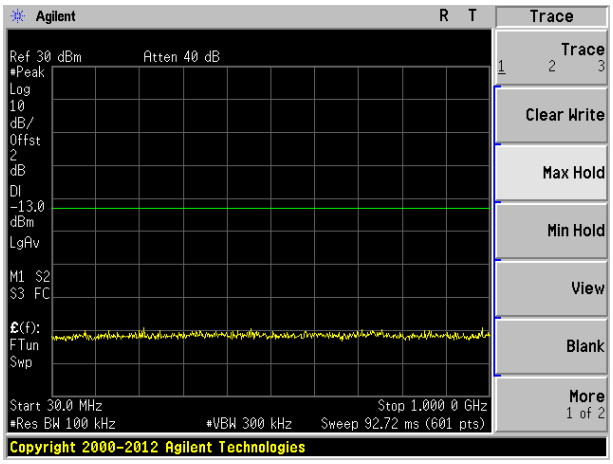


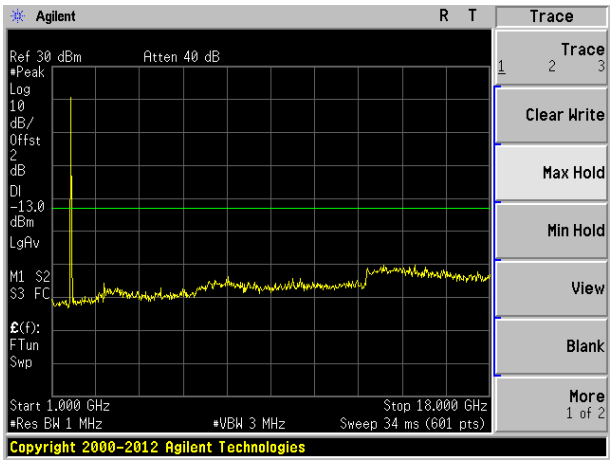
Lowest channel





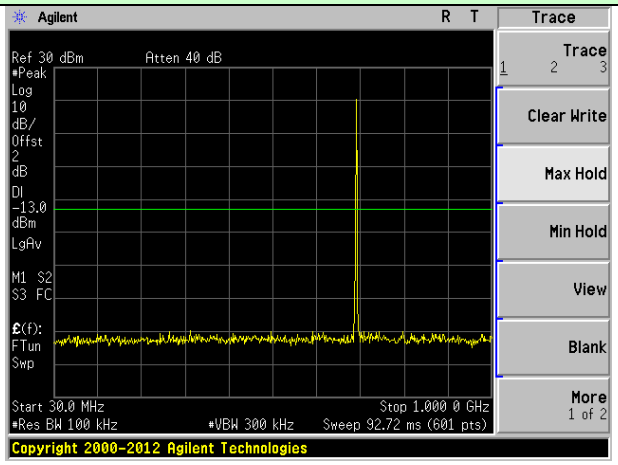
Middle channel

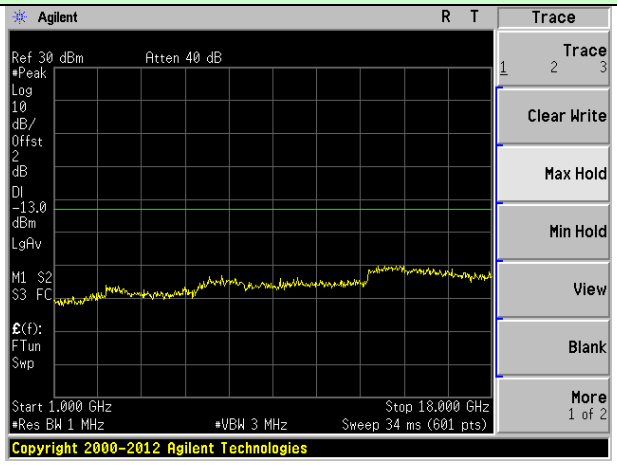




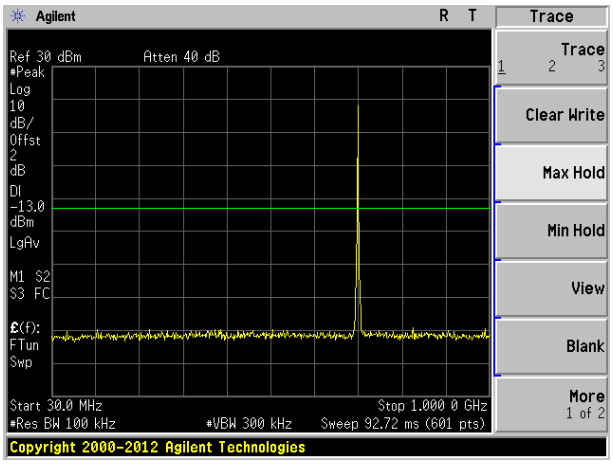
Highest channel

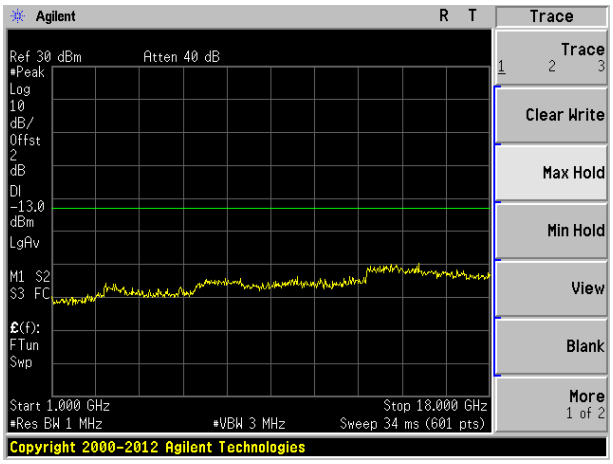
Test Mode: LTE Band 12	Channel Bandwidth: 1.4MHz



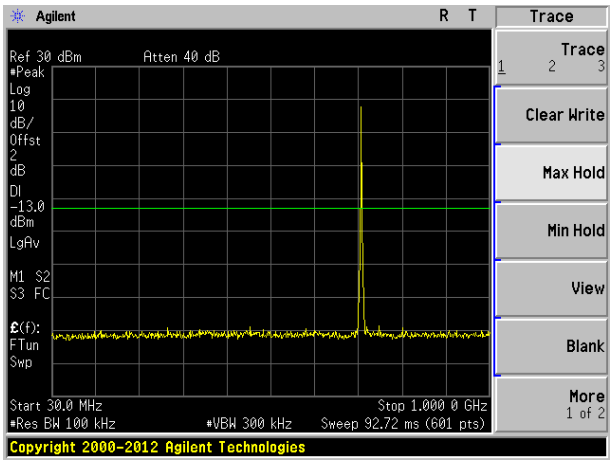


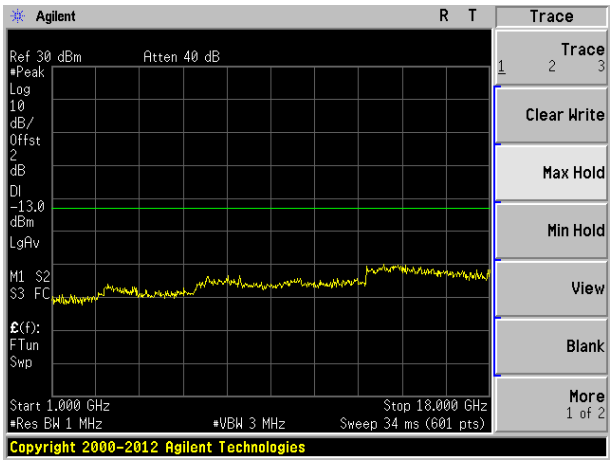
Lowest channel





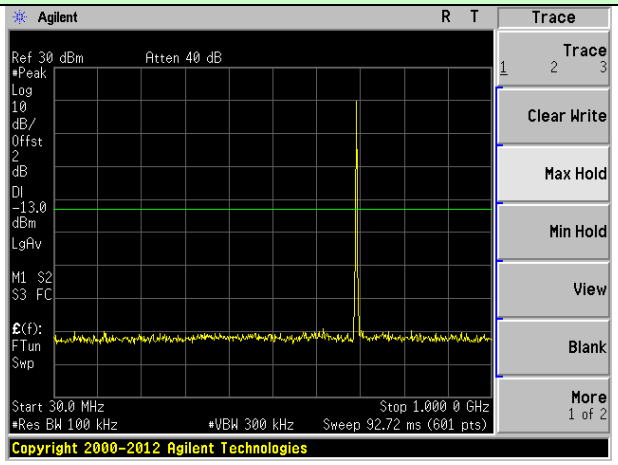
Middle channel

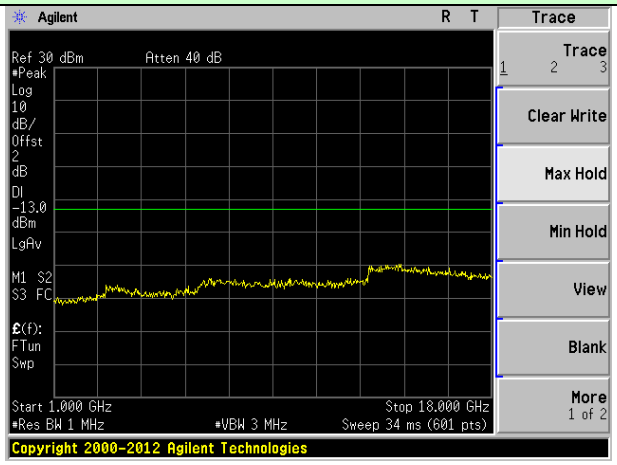




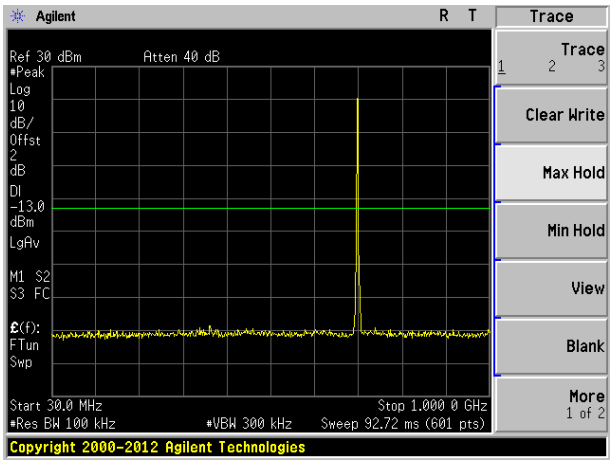
Highest channel

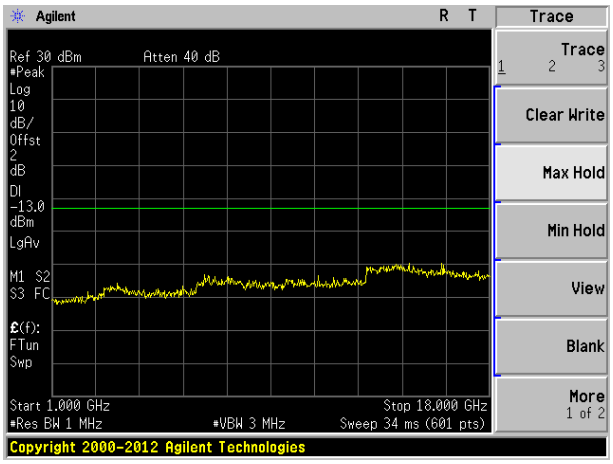
Test Mode: LTE Band 12	Channel Bandwidth: 3MHz



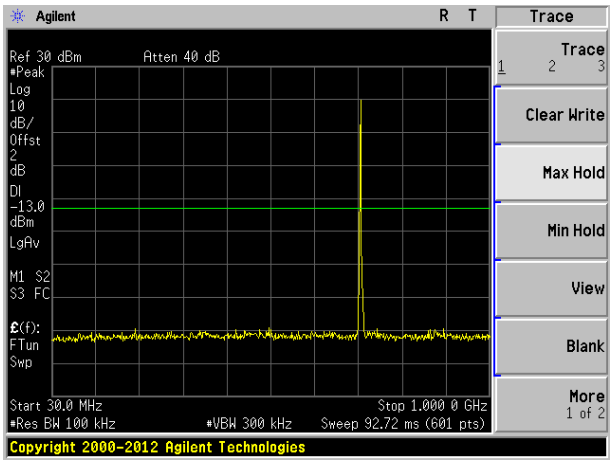


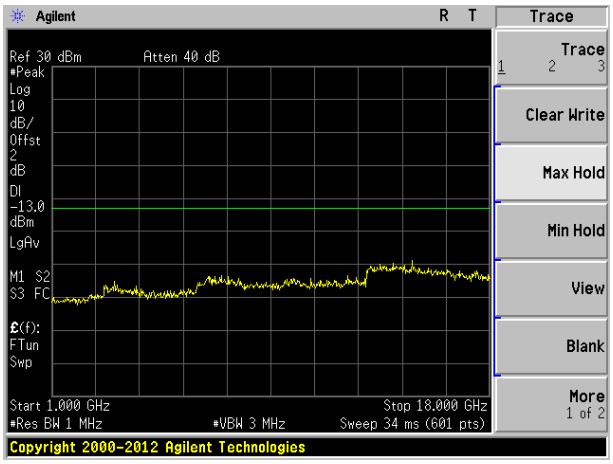
Lowest channel





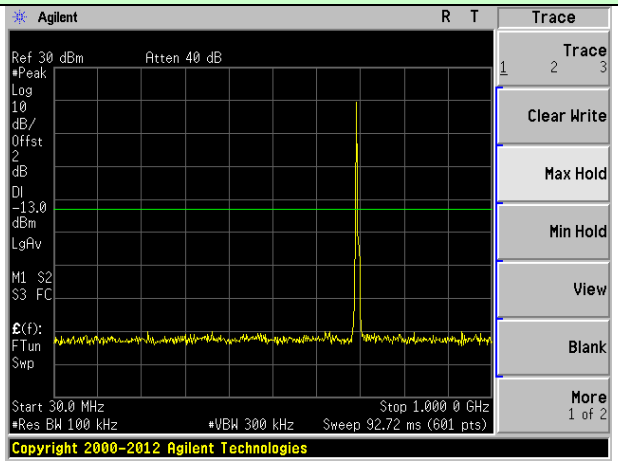
Middle channel

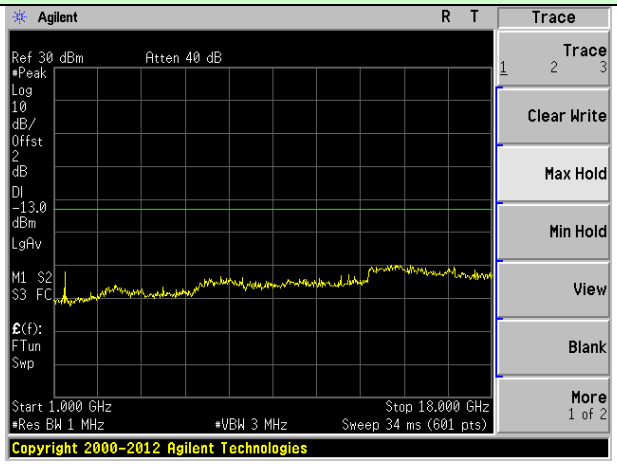




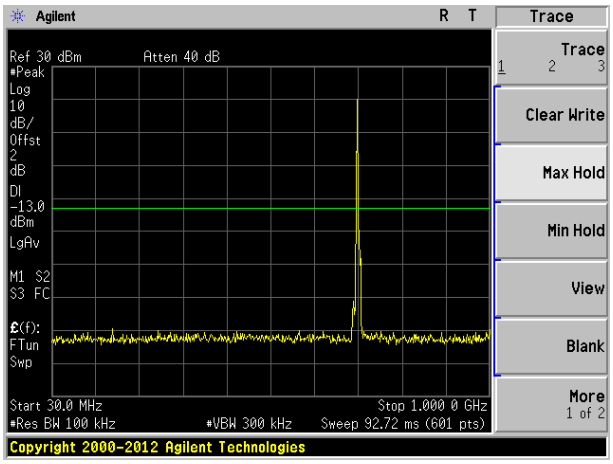
Highest channel

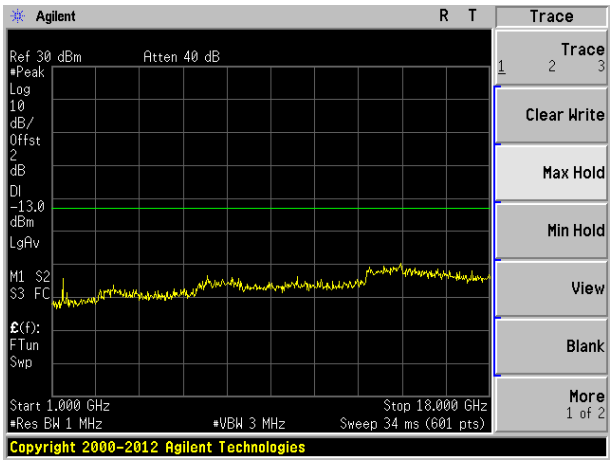
Test Mode: LTE Band 12	Channel Bandwidth: 5MHz



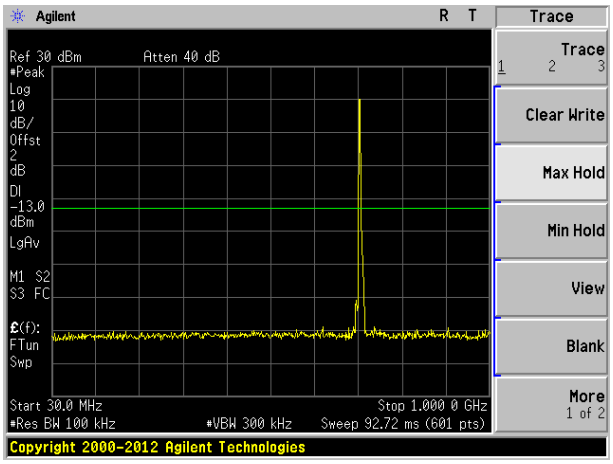


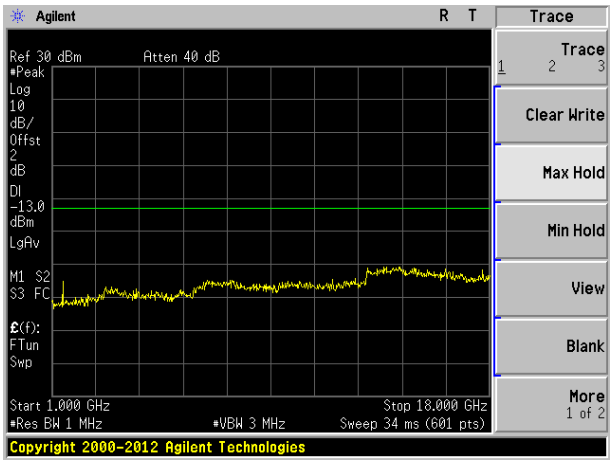
Lowest channel





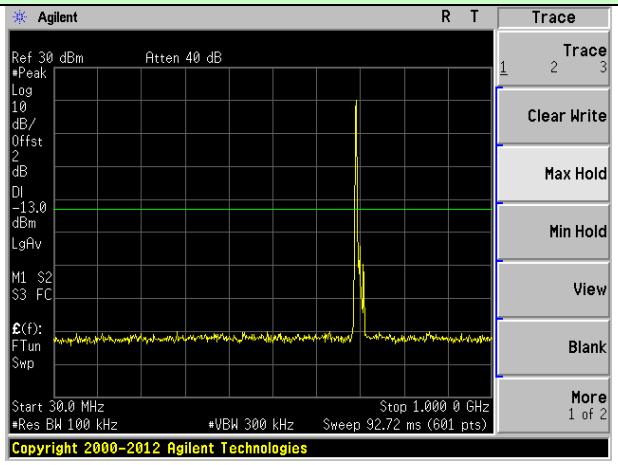
Middle channel

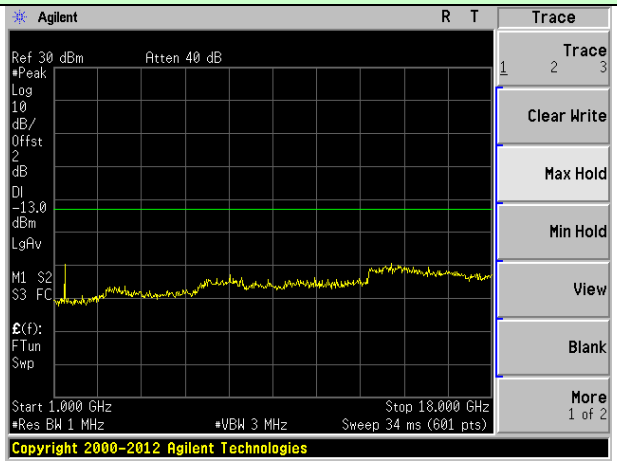




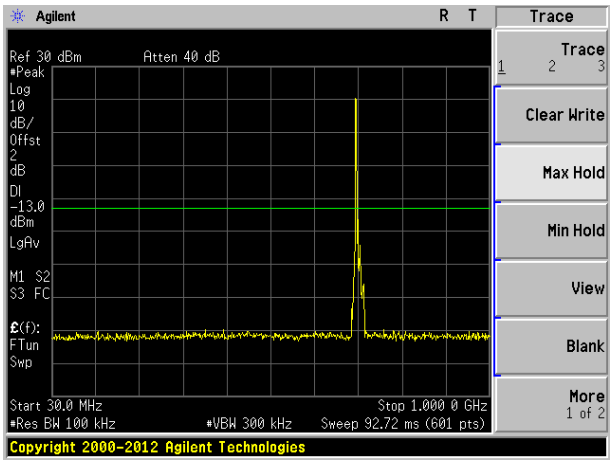
Highest channel

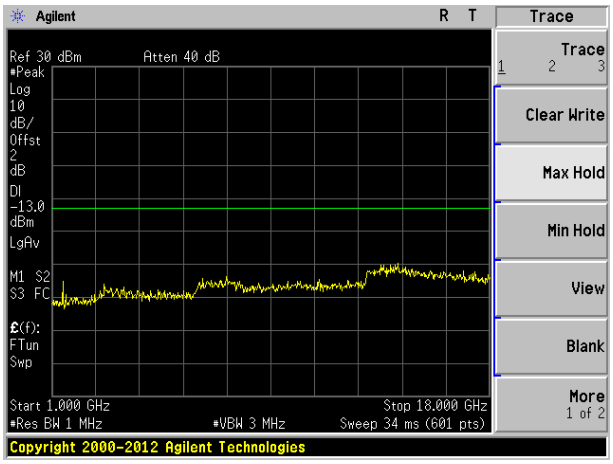
Test Mode: LTE Band 12	Channel Bandwidth: 10MHz



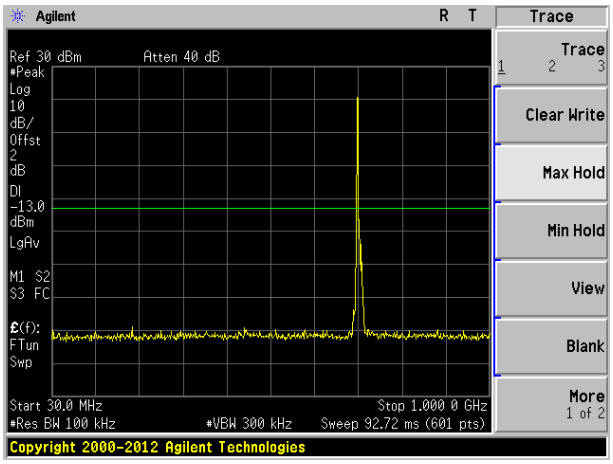


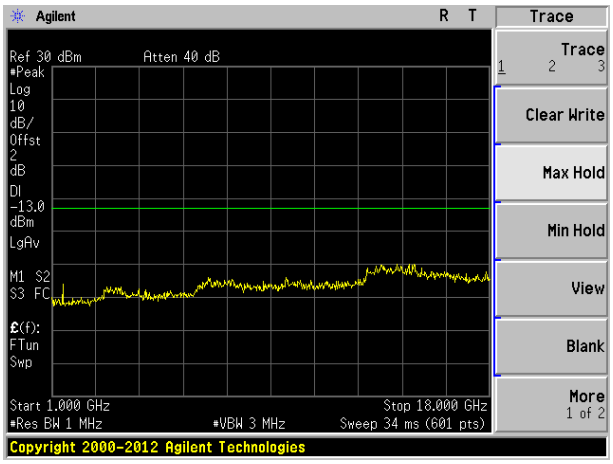
Lowest channel





Middle channel

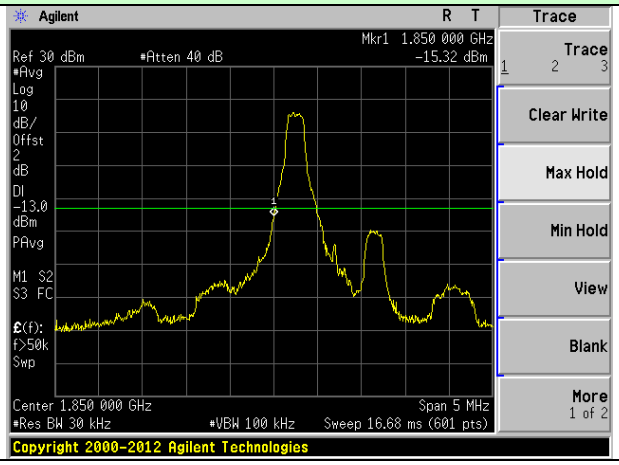
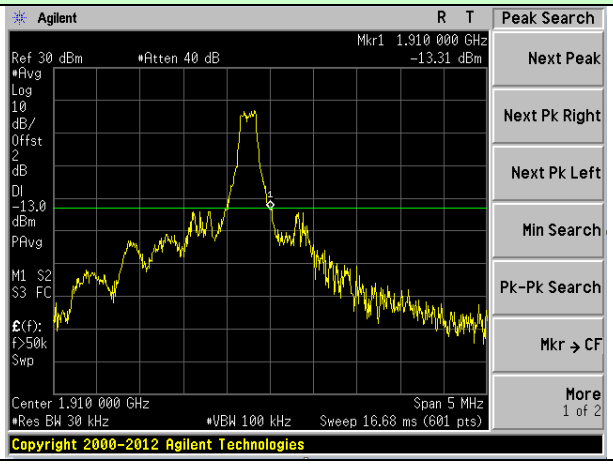


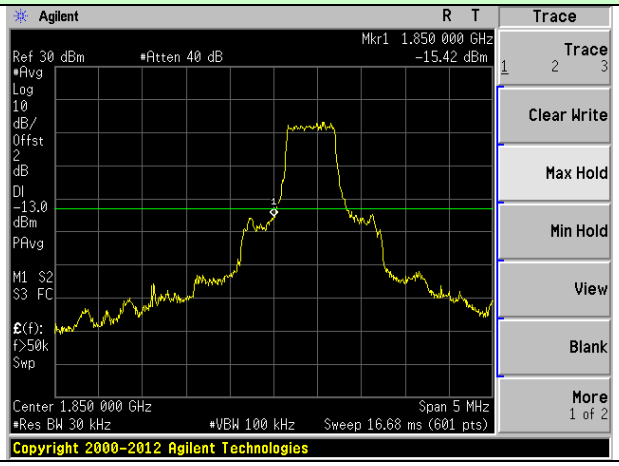
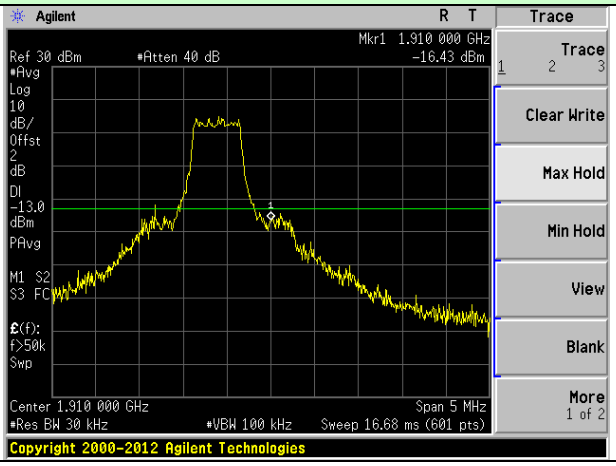


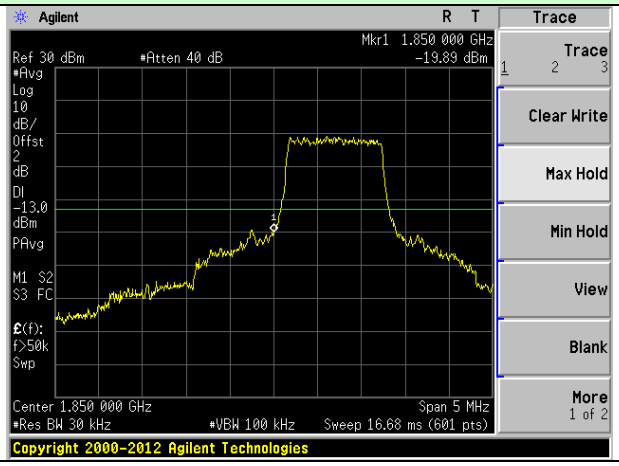
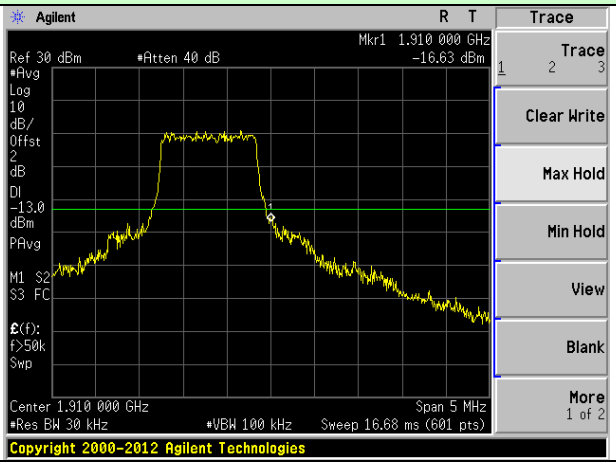
Highest channel

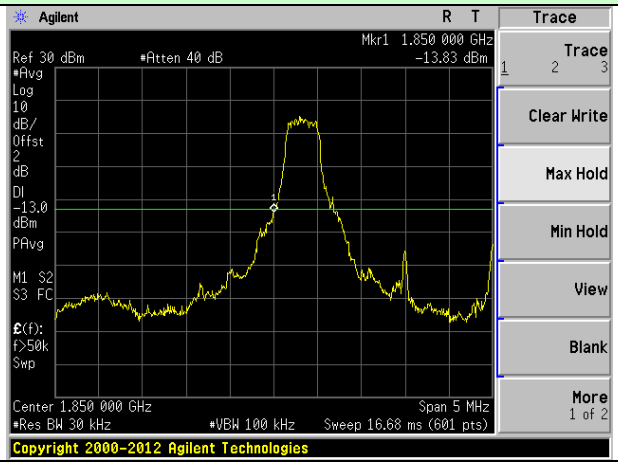
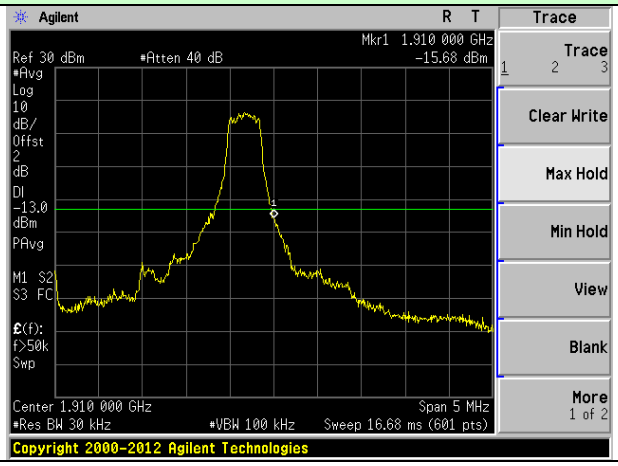
Band Edge:

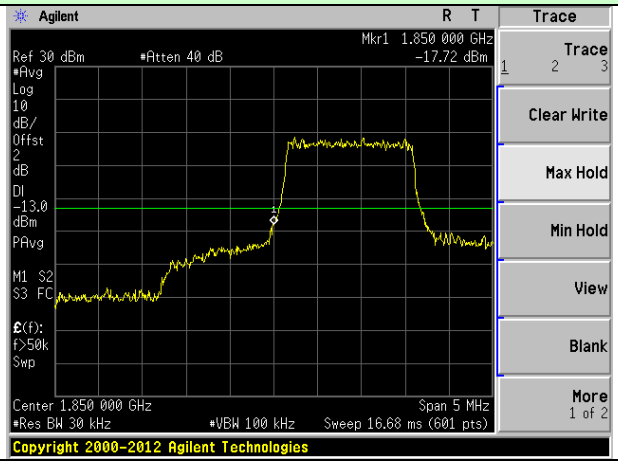
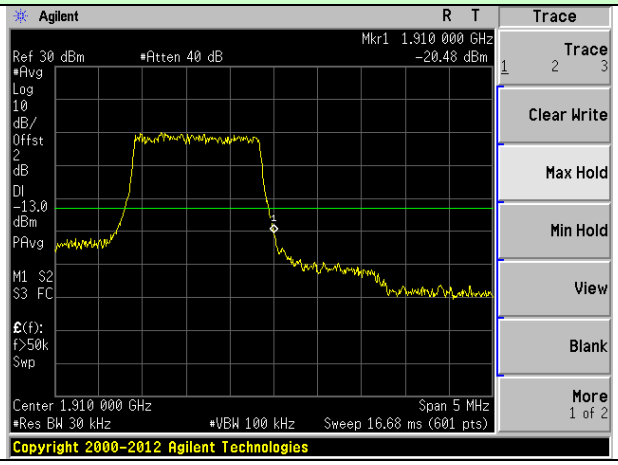
LTE Band 2(QPSK mode):

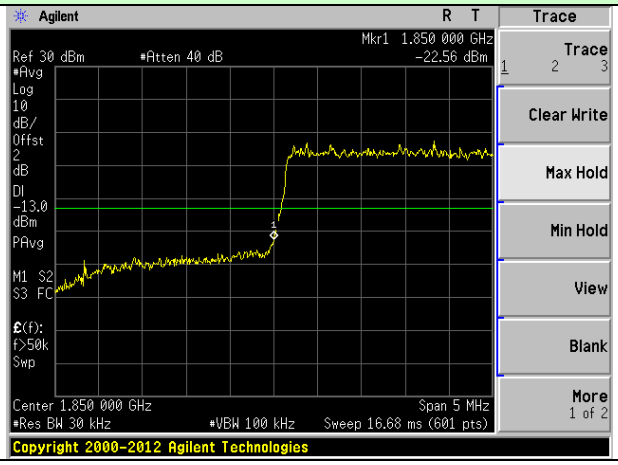
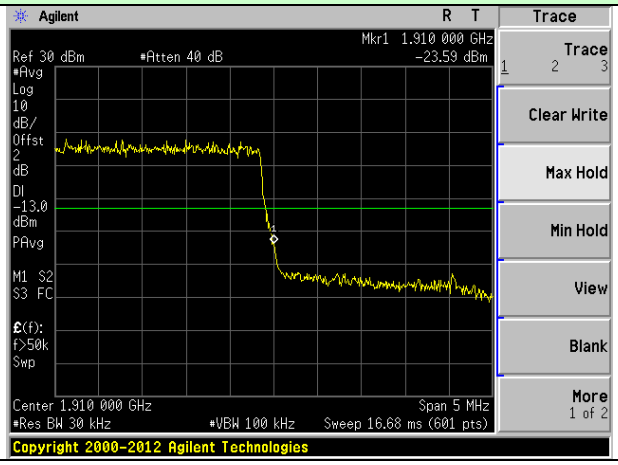
1.4MHz Bandwidth (RB size:1# RB offset:0#)	1.4MHz Bandwidth (RB size:1# RB offset:5#)
	
Lowest channel	Highest channel

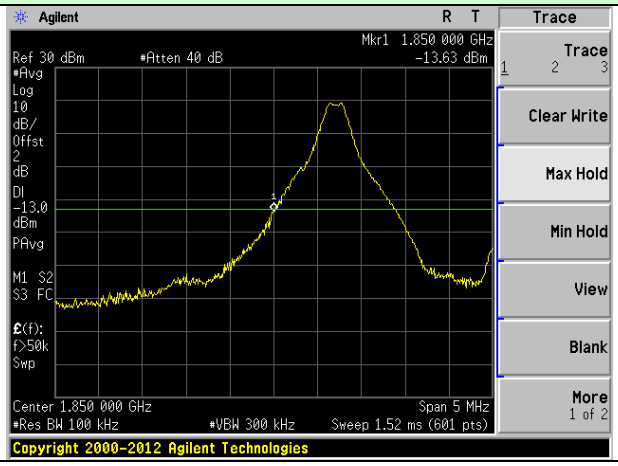
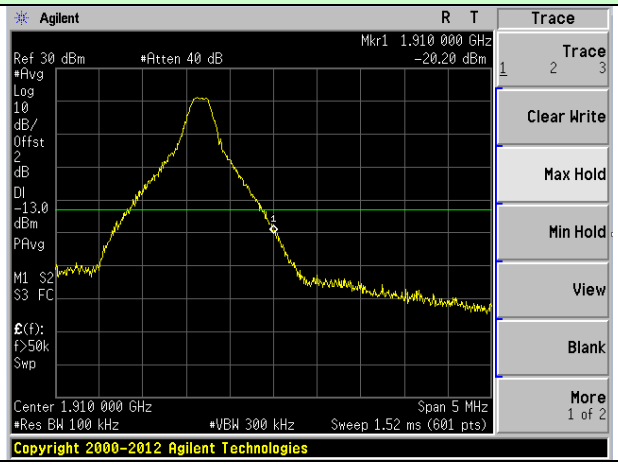
1.4MHz Bandwidth (RB size:3# RB offset:0#)	1.4MHz Bandwidth (RB size:3# RB offset:2#)
	
Lowest channel	Highest channel

1.4MHz Bandwidth (RB size:6# RB offset:0#)	1.4MHz Bandwidth (RB size:6# RB offset:0#)
	
Lowest channel	Highest channel

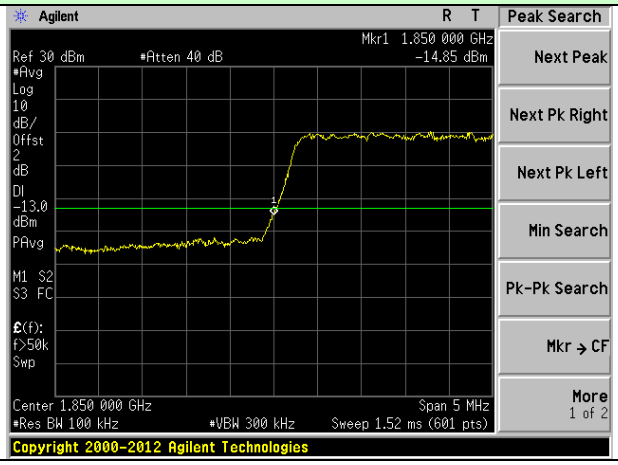
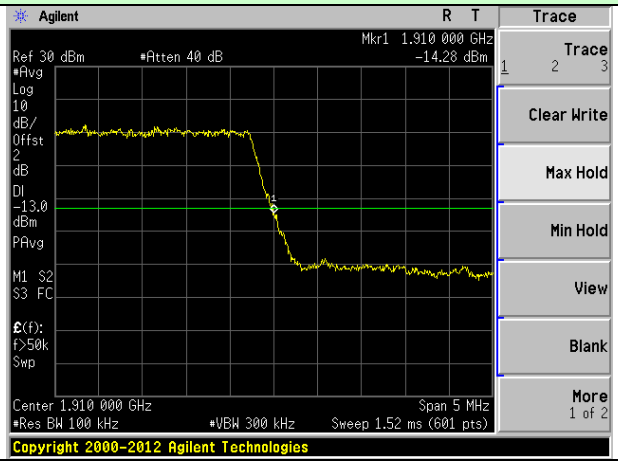
3MHz Bandwidth (RB size:1# RB offset:0#)	3MHz Bandwidth (RB size:1# RB offset:14#)
	
Lowest channel	Highest channel

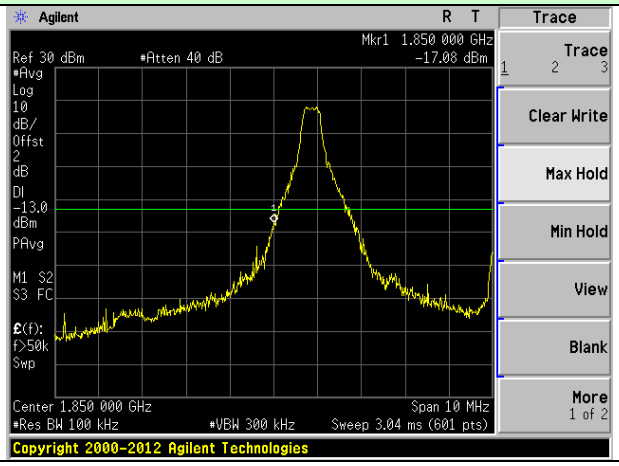
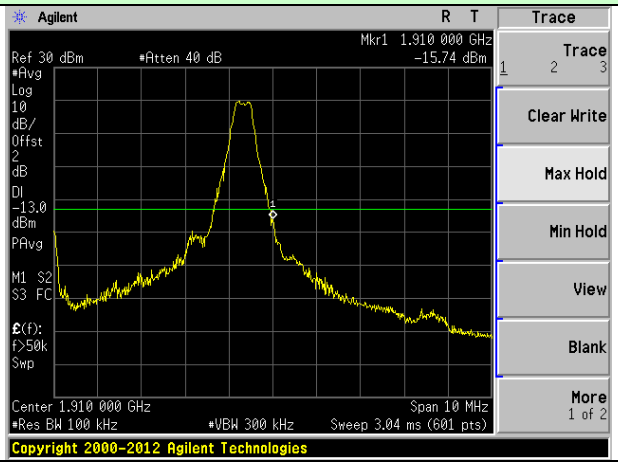
3MHz Bandwidth (RB size:8# RB offset:0#)	3MHz Bandwidth (RB size:8# RB offset:7#)
	
Lowest channel	Highest channel

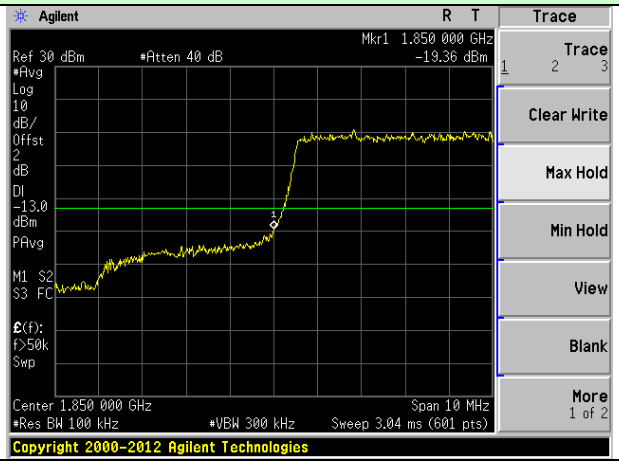
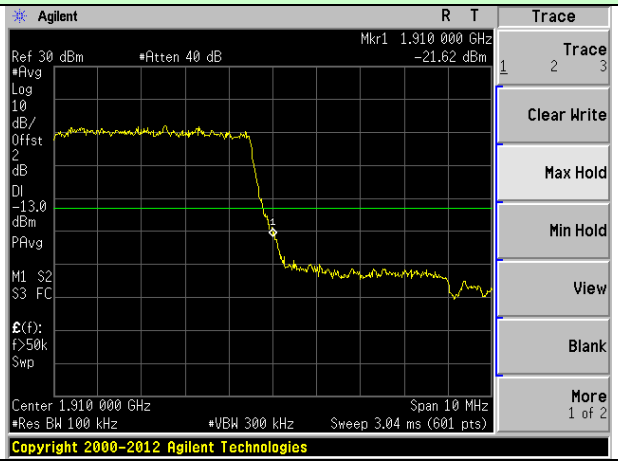
3MHz Bandwidth (RB size:15# RB offset:0#)	3MHz Bandwidth (RB size:15# RB offset:0#)
	
Lowest channel	Highest channel

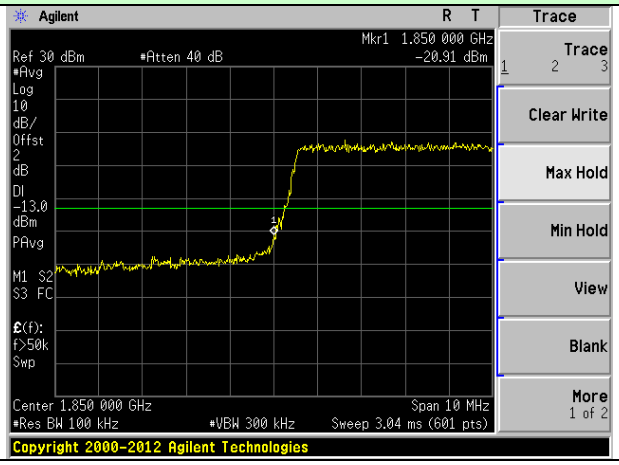
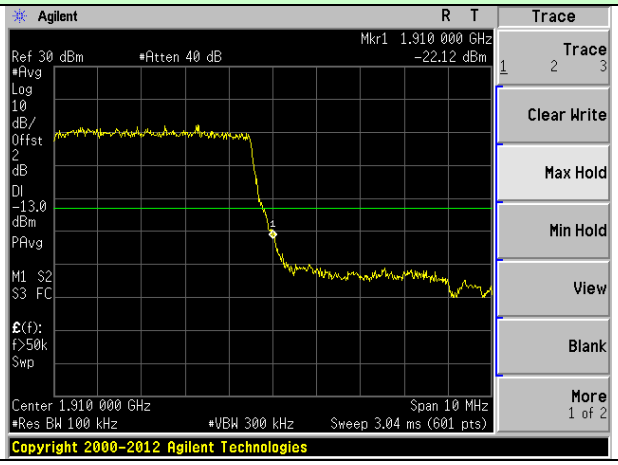
5MHz Bandwidth (RB size:1# RB offset:0#)	5MHz Bandwidth (RB size:1# RB offset:24#)
	
Lowest channel	Highest channel

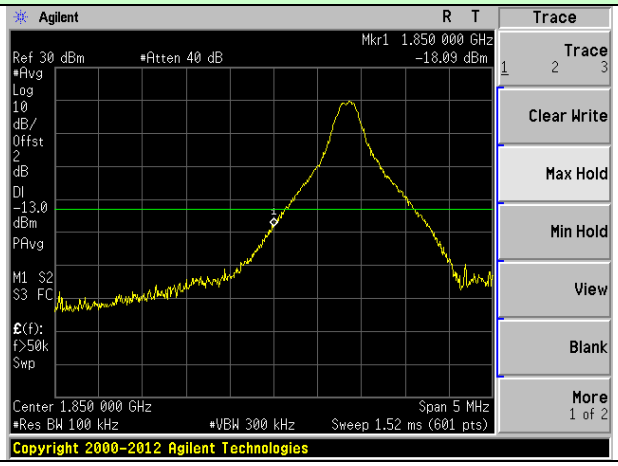
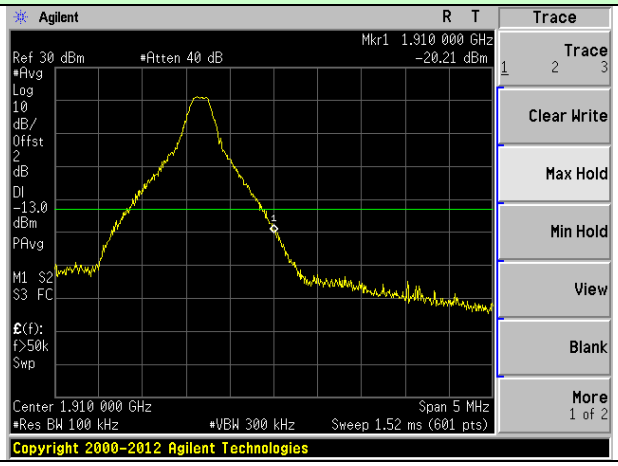
5MHz Bandwidth (RB size:12# RB offset:0#)	5MHz Bandwidth (RB size:12# RB offset:13#)
	
Lowest channel	Highest channel

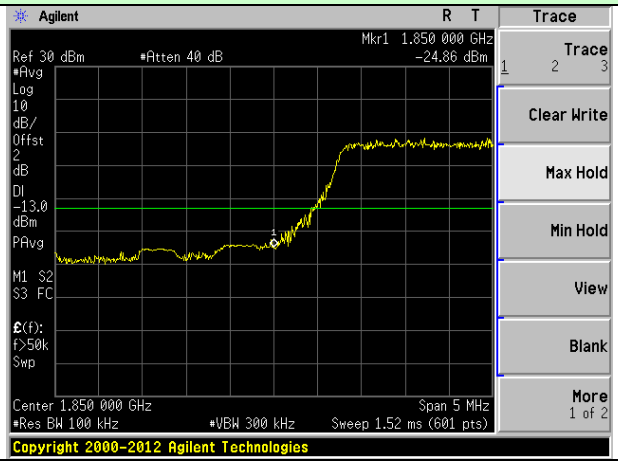
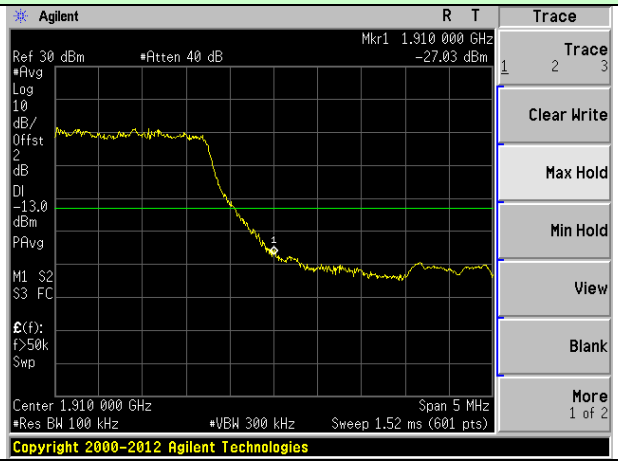
5MHz Bandwidth (RB size:25# RB offset:0#)	5MHz Bandwidth (RB size:25# RB offset:0#)
	
Lowest channel	Highest channel

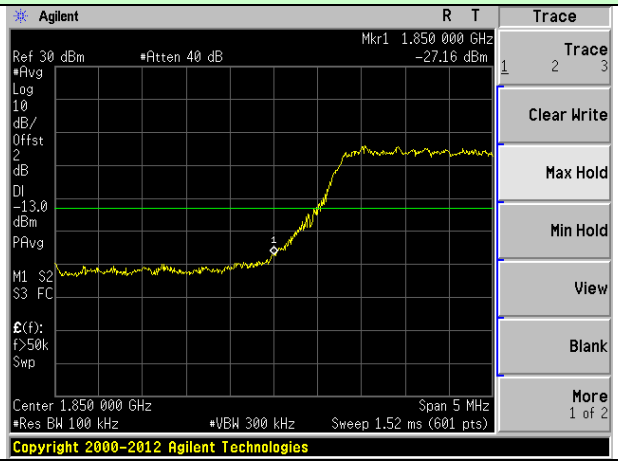
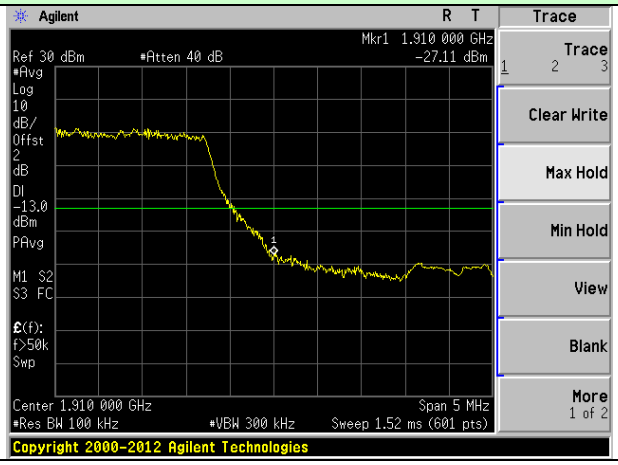
10MHz Bandwidth (RB size:1# RB offset:0#)	10MHz Bandwidth (RB size:1# RB offset:49#)
	
Lowest channel	Highest channel

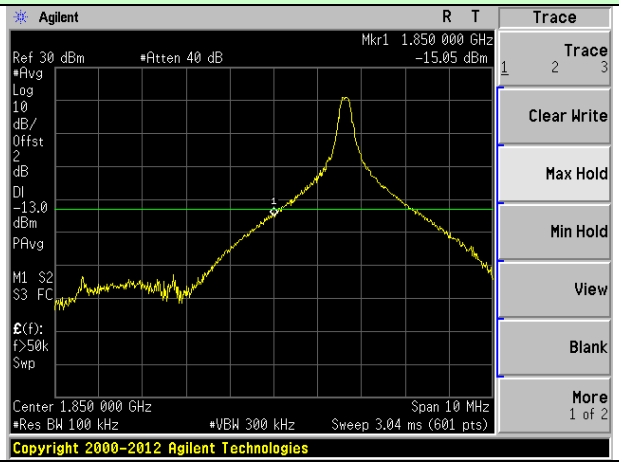
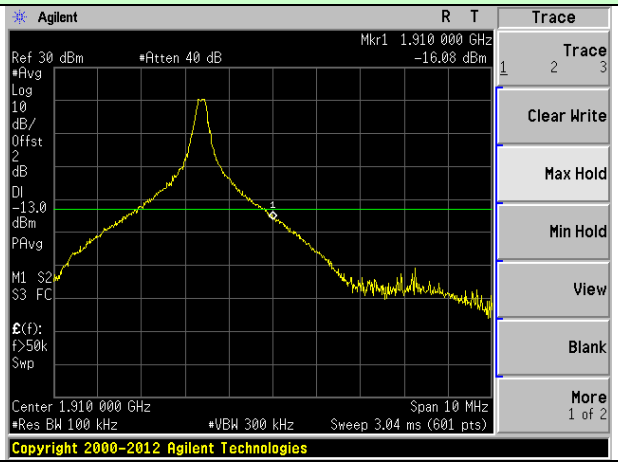
10MHz Bandwidth (RB size:25# RB offset:0#)	10MHz Bandwidth (RB size:25# RB offset:25#)
	
Lowest channel	Highest channel

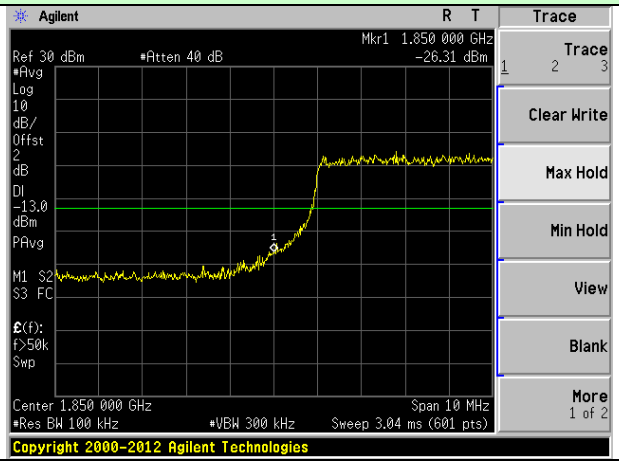
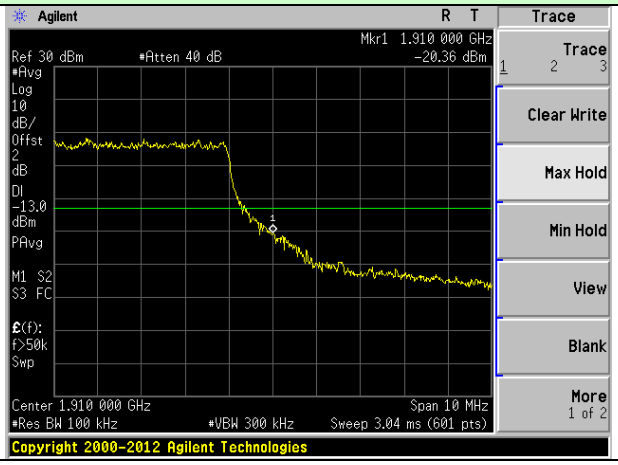
10MHz Bandwidth (RB size:50# RB offset:0#)	10MHz Bandwidth (RB size:50# RB offset:0#)
	
Lowest channel	Highest channel

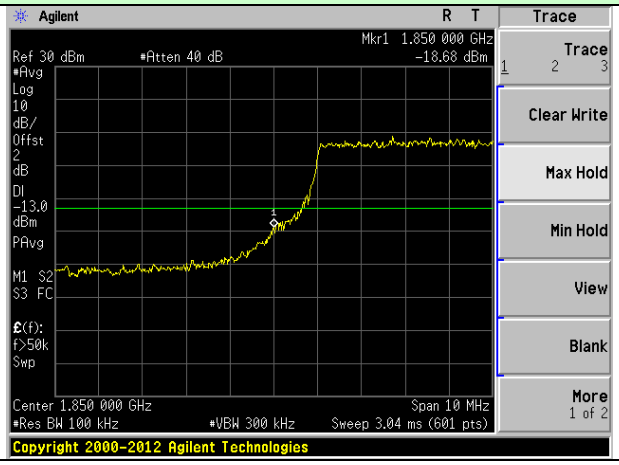
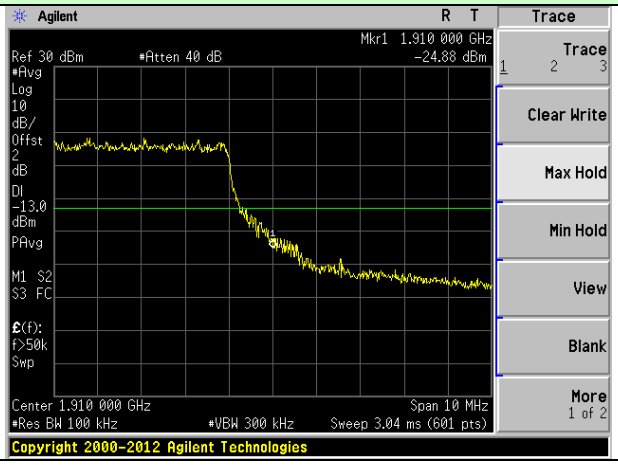
15MHz Bandwidth (RB size:1# RB offset:0#)	15MHz Bandwidth (RB size:1# RB offset:74#)
	
Lowest channel	Highest channel

15MHz Bandwidth (RB size:36# RB offset:0#)	15MHz Bandwidth (RB size:36# RB offset:39#)
	
Lowest channel	Highest channel

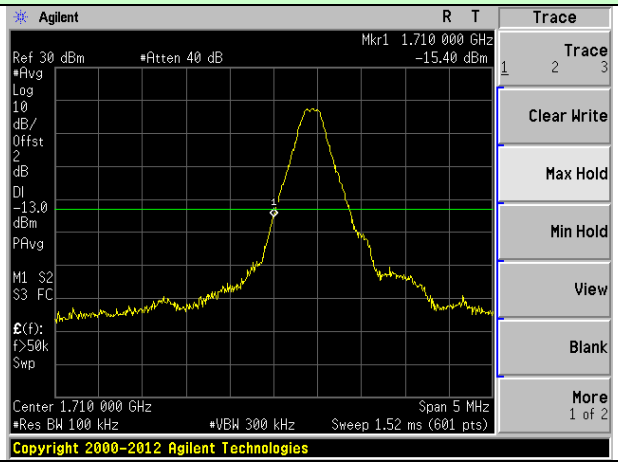
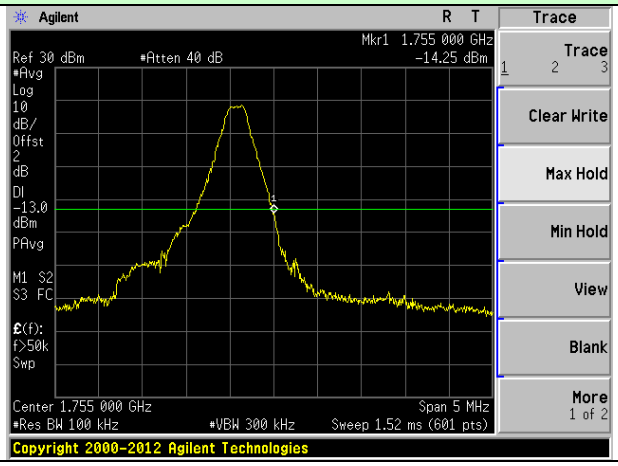
15MHz Bandwidth (RB size:75# RB offset:0#)	15MHz Bandwidth (RB size:75# RB offset:0#)
	
Lowest channel	Highest channel

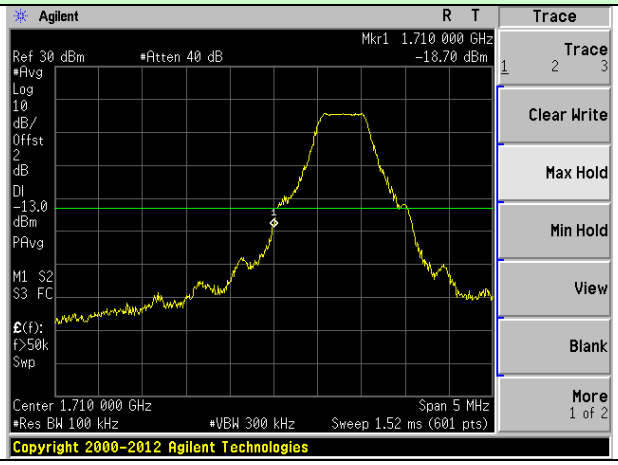
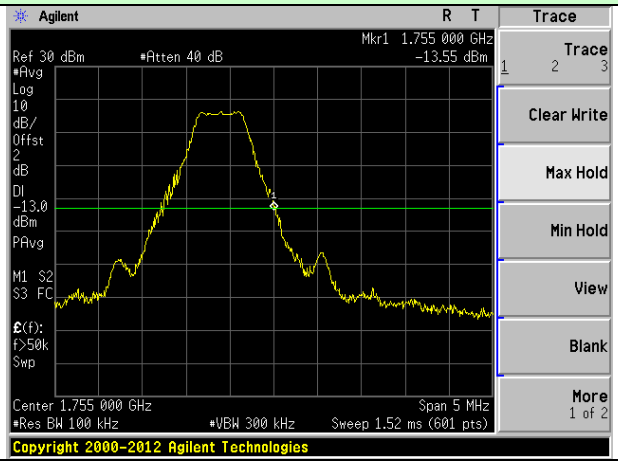
20MHz Bandwidth (RB size:1# RB offset:0#)	20MHz Bandwidth (RB size:1# RB offset:99#)
	
Lowest channel	Highest channel

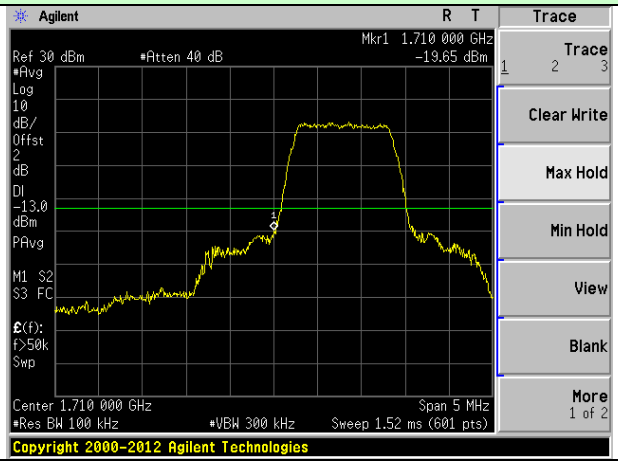
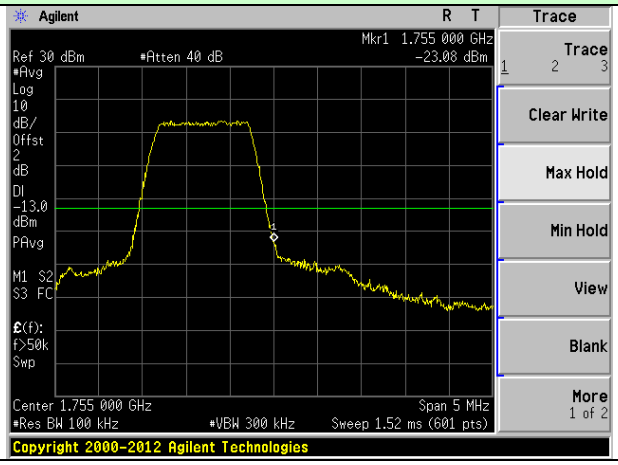
20MHz Bandwidth (RB size:50# RB offset:0#)	20MHz Bandwidth (RB size:50# RB offset:50#)
	
Lowest channel	Highest channel

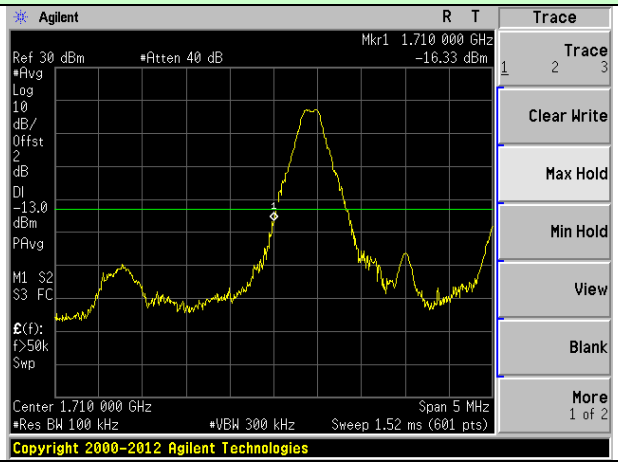
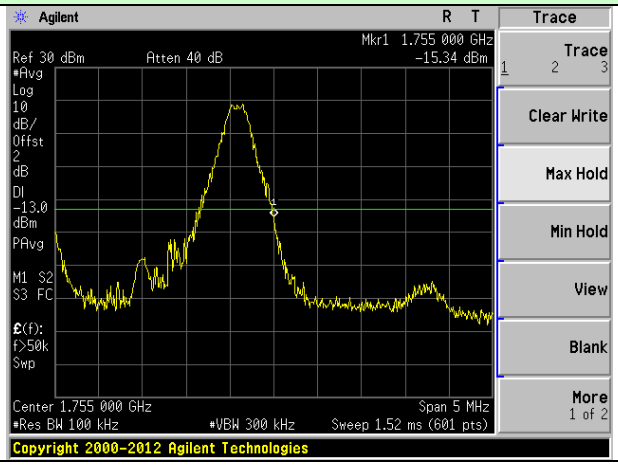
20MHz Bandwidth (RB size:100# RB offset:0#)	20MHz Bandwidth (RB size:100# RB offset:0#)
	
Lowest channel	Highest channel

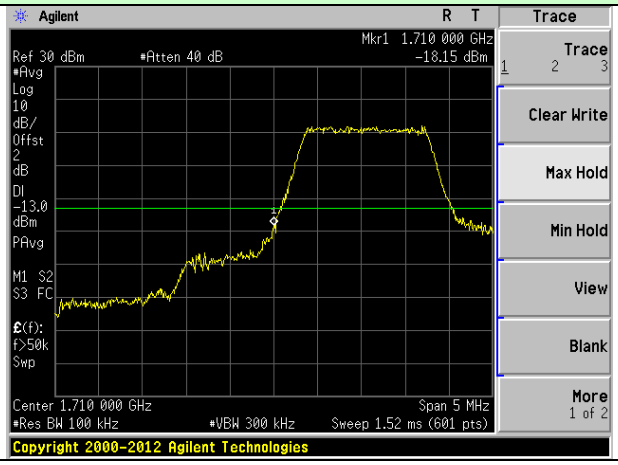
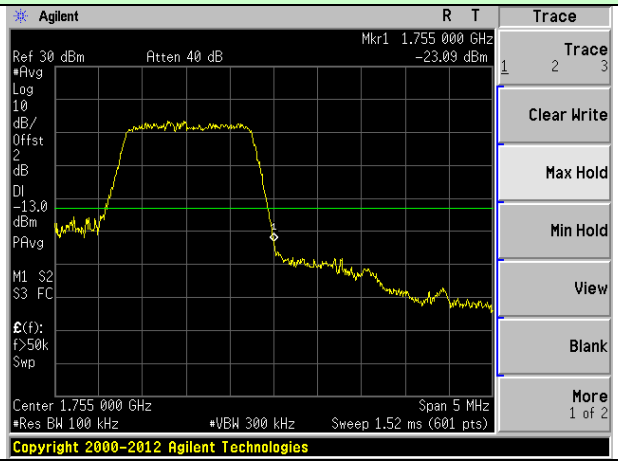
LTE Band 4(QPSK mode)

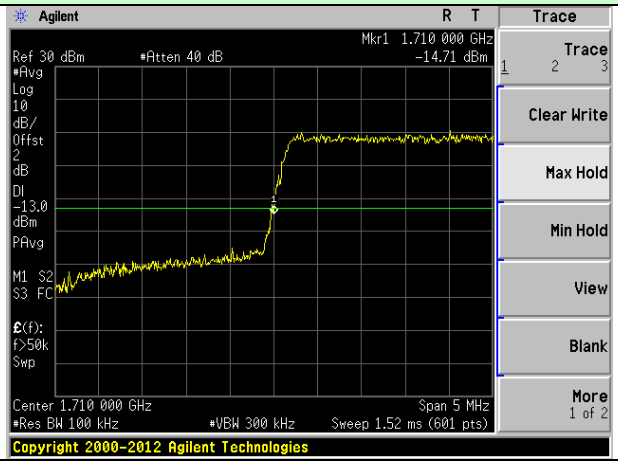
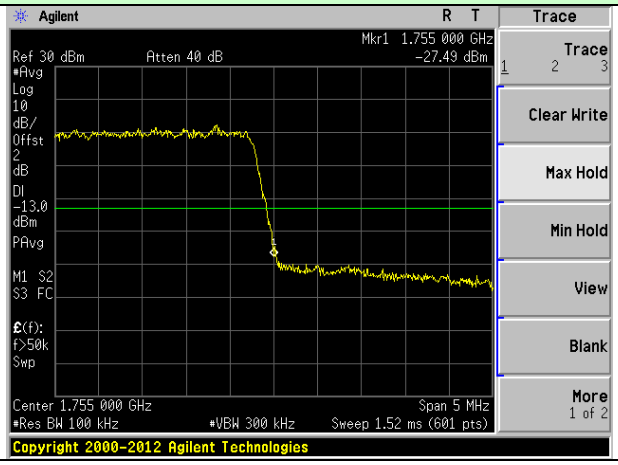
1.4MHz Bandwidth (RB size:1# RB offset:0#)	1.4MHz Bandwidth (RB size:1# RB offset:5#)
	
Lowest channel	Highest channel

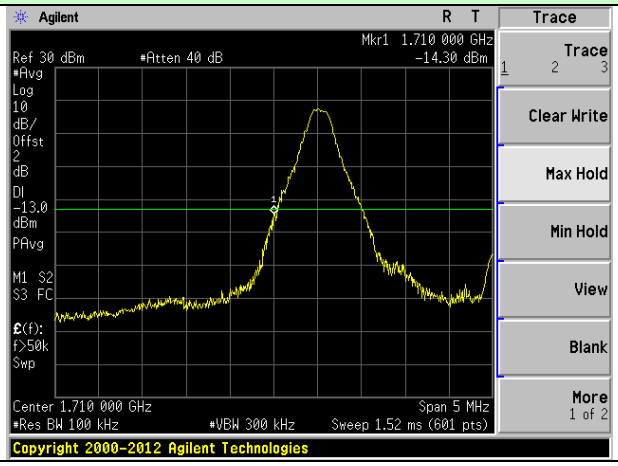
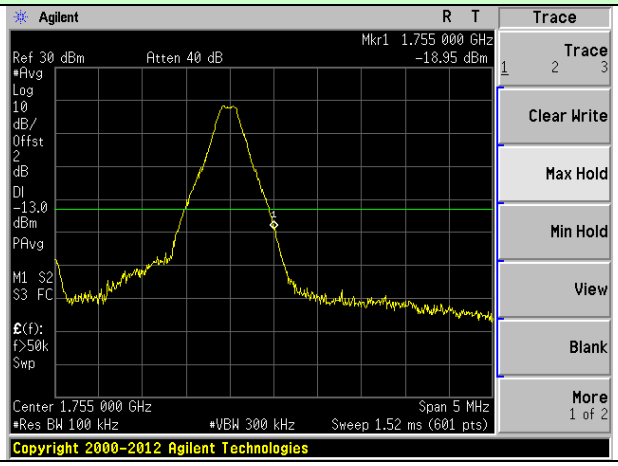
1.4MHz Bandwidth (RB size:3# RB offset:0#)	1.4MHz Bandwidth (RB size:3# RB offset:2#)
	
Lowest channel	Highest channel

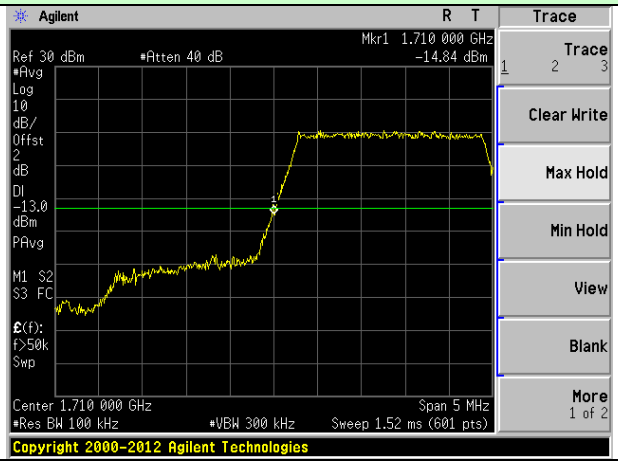
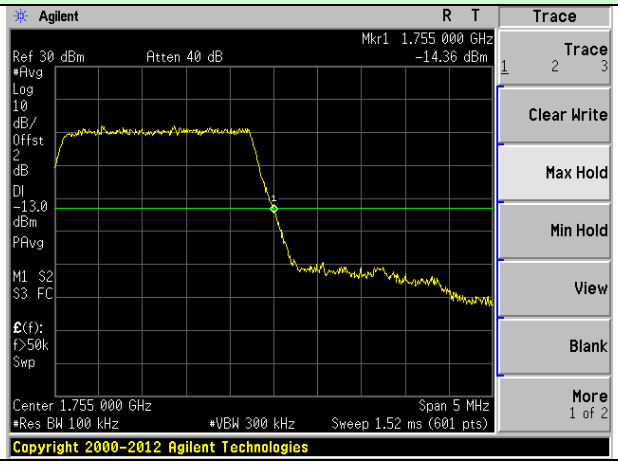
1.4MHz Bandwidth (RB size:6# RB offset:0#)	1.4MHz Bandwidth (RB size:6# RB offset:0#)
	
Lowest channel	Highest channel

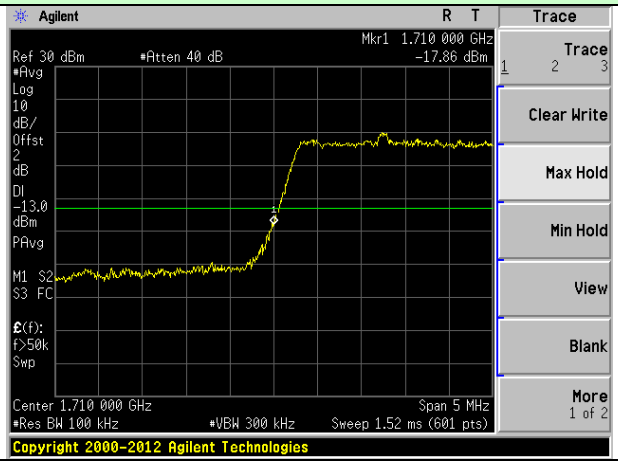
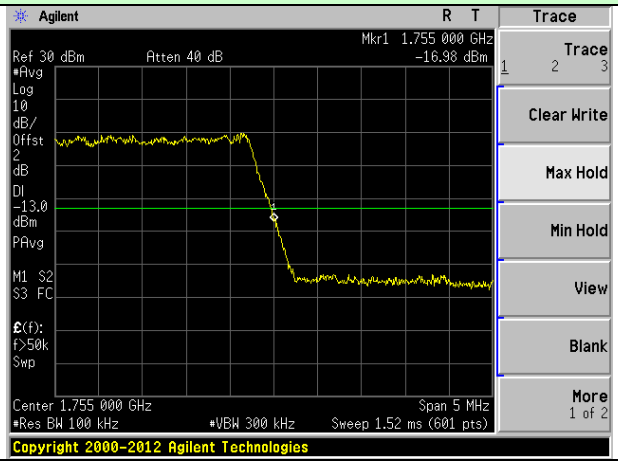
3MHz Bandwidth (RB size:1# RB offset:0#)	3MHz Bandwidth (RB size:1# RB offset:14#)
	
Lowest channel	Highest channel

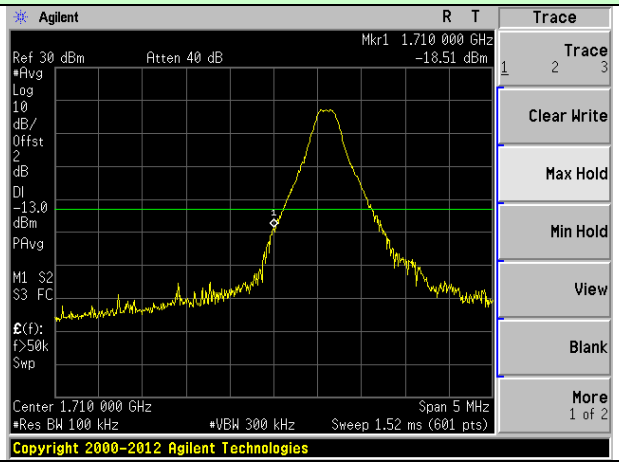
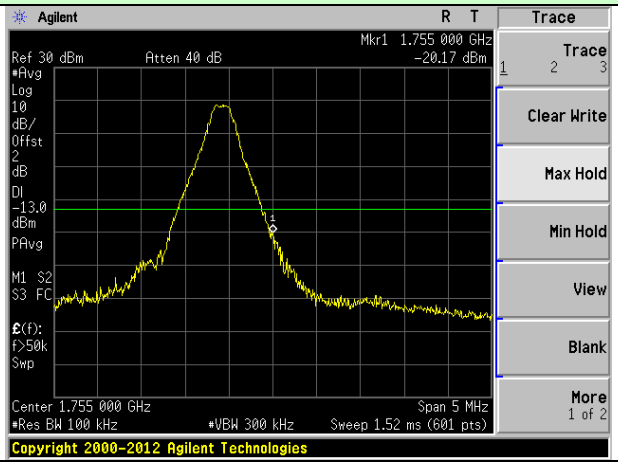
3MHz Bandwidth (RB size:8# RB offset:0#)	3MHz Bandwidth (RB size:8# RB offset:7#)
	
Lowest channel	Highest channel

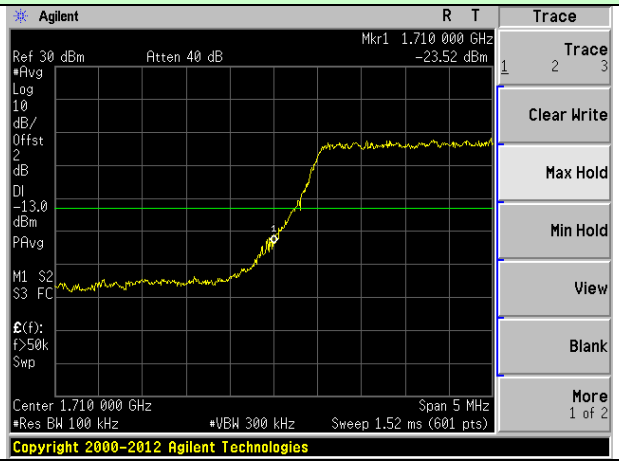
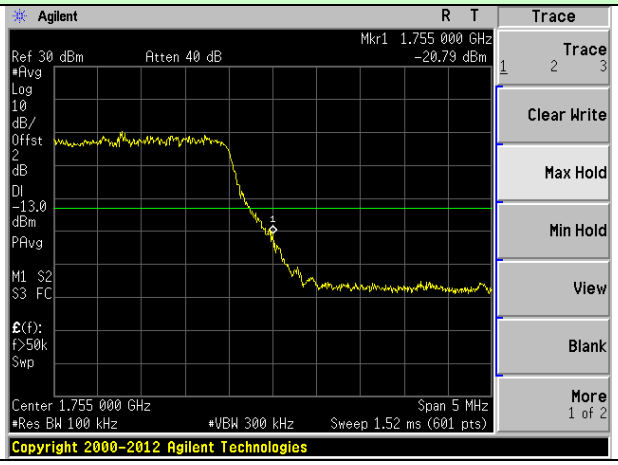
3MHz Bandwidth (RB size:15# RB offset:0#)	3MHz Bandwidth (RB size:15# RB offset:0#)
	
Lowest channel	Highest channel

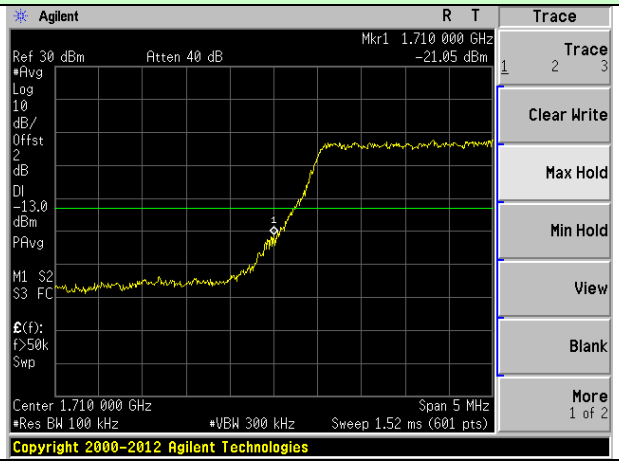
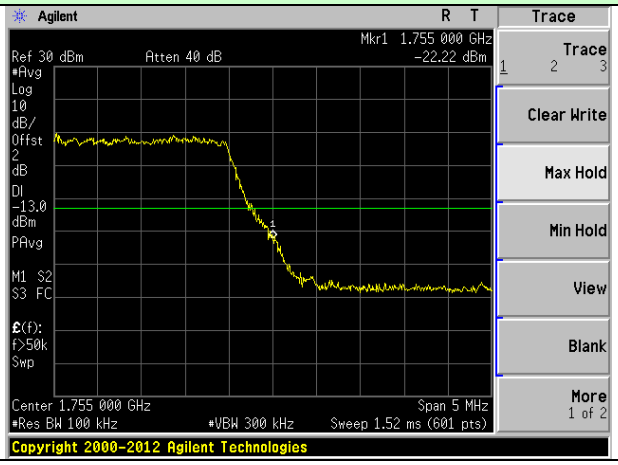
5MHz Bandwidth (RB size:1# RB offset:0#)	5MHz Bandwidth (RB size:1# RB offset:24#)
	
Lowest channel	Highest channel

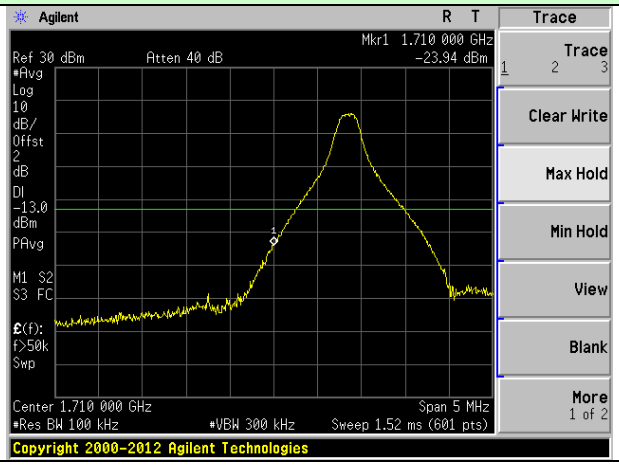
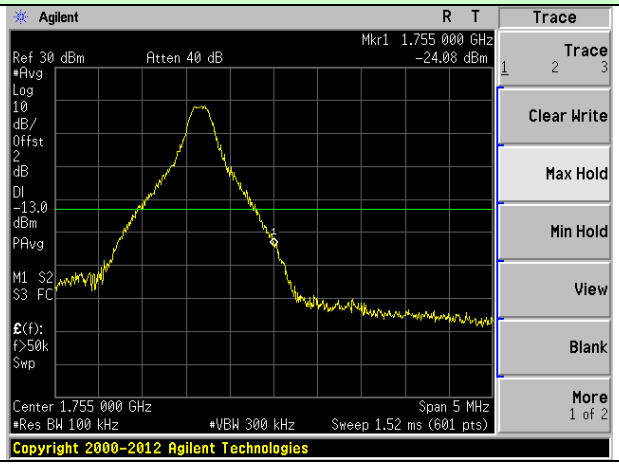
5MHz Bandwidth (RB size:12# RB offset:0#)	5MHz Bandwidth (RB size:12# RB offset:13#)
	
Lowest channel	Highest channel

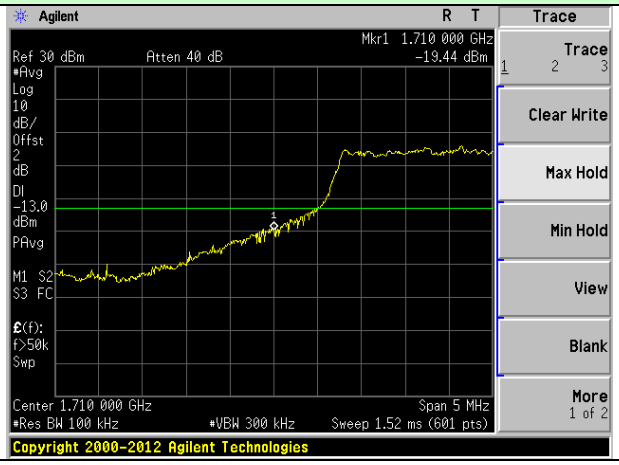
5MHz Bandwidth (RB size:25# RB offset:0#)	5MHz Bandwidth (RB size:25# RB offset:0#)
	
Lowest channel	Highest channel

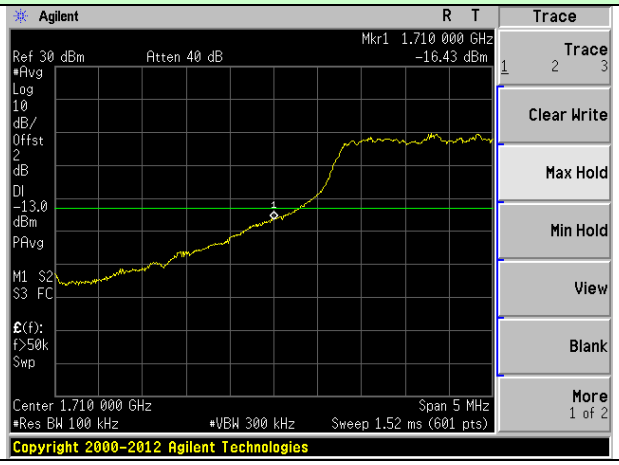
10MHz Bandwidth (RB size:1# RB offset:0#)	10MHz Bandwidth (RB size:1# RB offset:49#)
	
Lowest channel	Highest channel

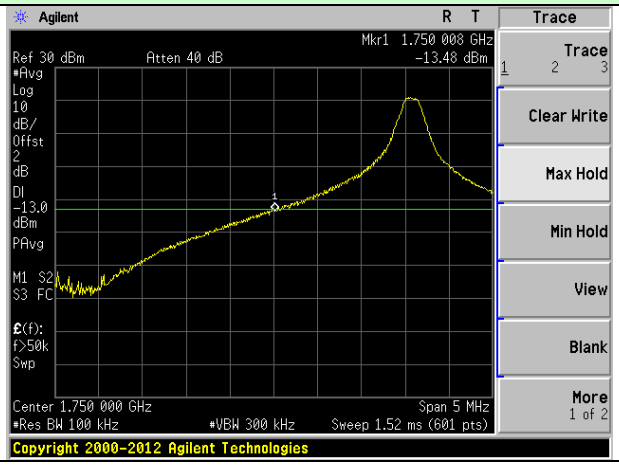
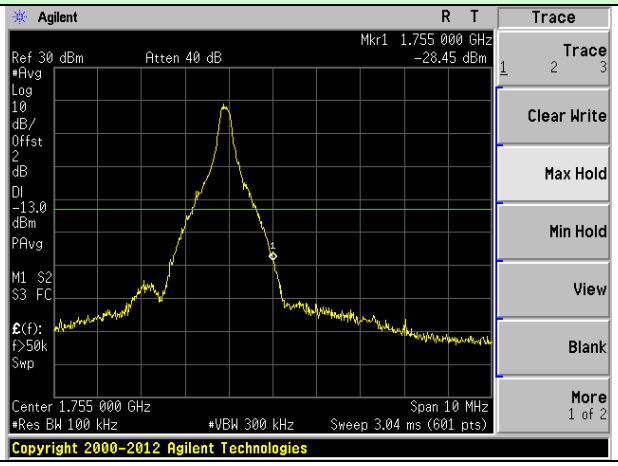
10MHz Bandwidth (RB size:25# RB offset:0#)	10MHz Bandwidth (RB size:25# RB offset:25#)
	
Lowest channel	Highest channel

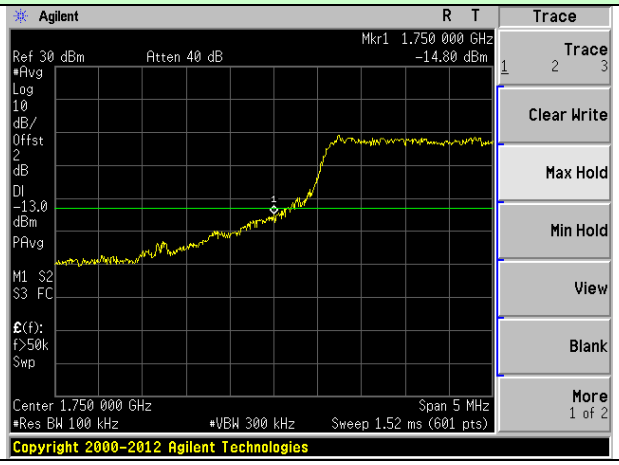
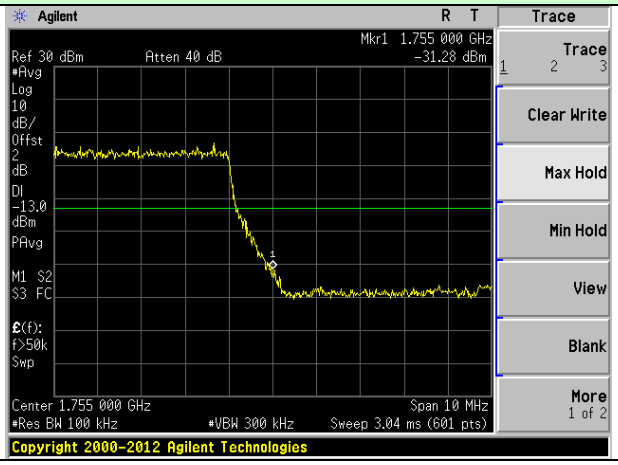
10MHz Bandwidth (RB size:50# RB offset:0#)	10MHz Bandwidth (RB size:50# RB offset:0#)
	
Lowest channel	Highest channel

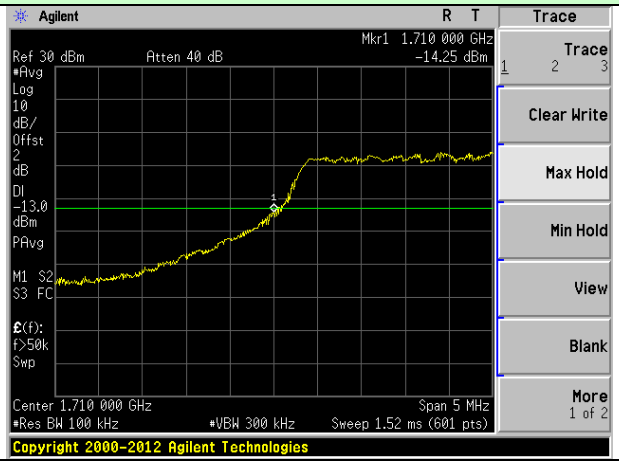
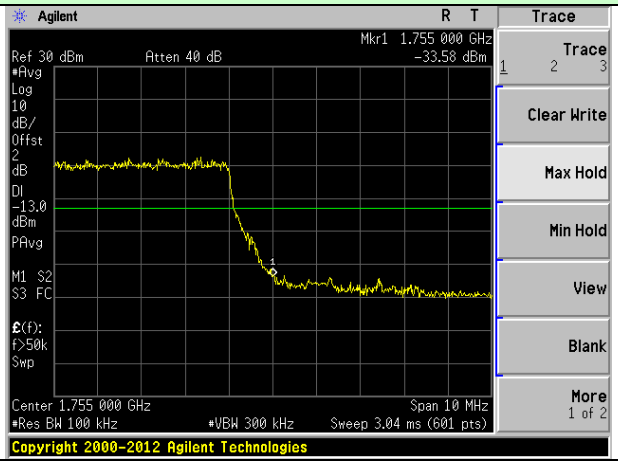
15MHz Bandwidth (RB size:1# RB offset:0#)	15MHz Bandwidth (RB size:1# RB offset:74#)
	
Lowest channel	Highest channel

15MHz Bandwidth (RB size:36# RB offset:0#)	15MHz Bandwidth (RB size:36# RB offset:39#)
	
Lowest channel	Highest channel

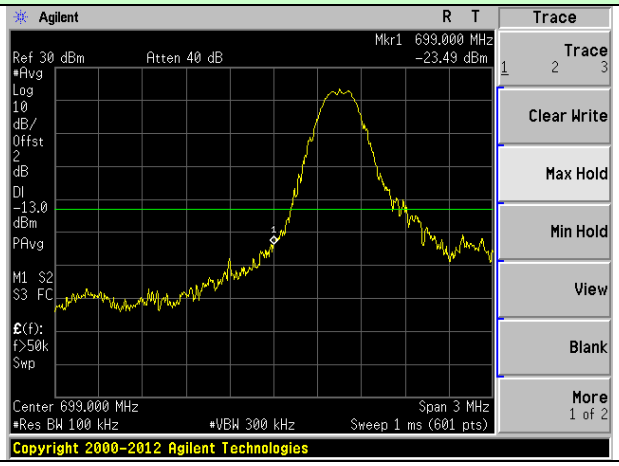
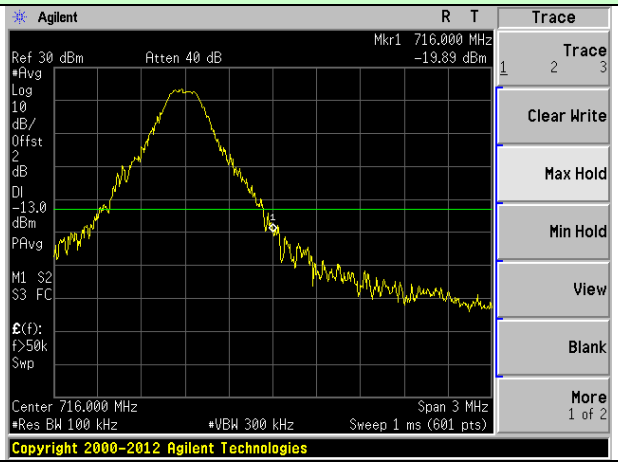
15MHz Bandwidth (RB size:75# RB offset:0#)	15MHz Bandwidth (RB size:75# RB offset:0#)
	
Lowest channel	Highest channel

20MHz Bandwidth (RB size:1# RB offset:0#)	20MHz Bandwidth (RB size:1# RB offset:99#)
	
Lowest channel	Highest channel

20MHz Bandwidth (RB size:50# RB offset:0#)	20MHz Bandwidth (RB size:50# RB offset:50#)
	
Lowest channel	Highest channel

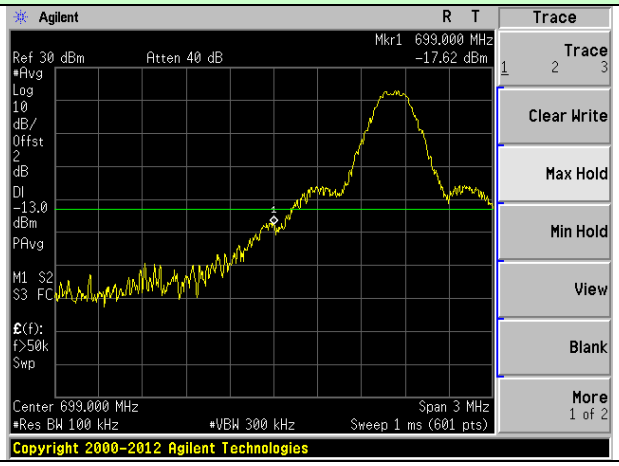
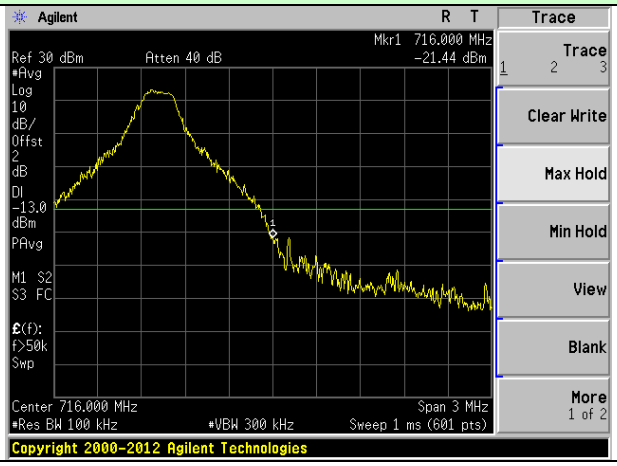
20MHz Bandwidth (RB size:100# RB offset:0#)	20MHz Bandwidth (RB size:100# RB offset:0#)
	
Lowest channel	Highest channel

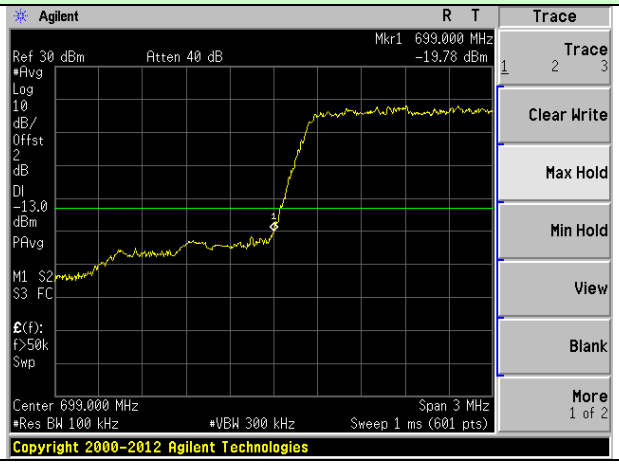
LTE Band 12(QPSK mode)

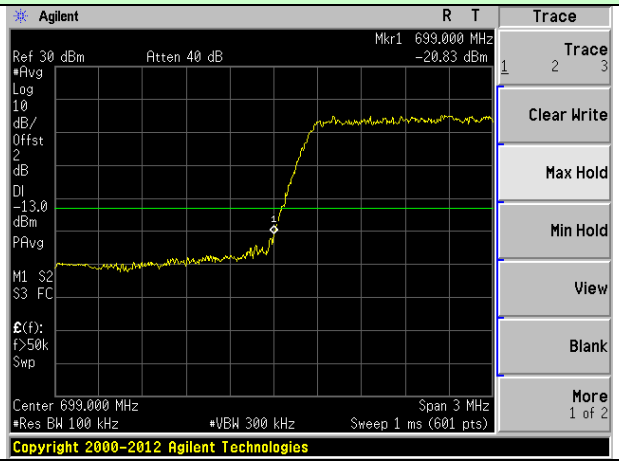
1.4MHz Bandwidth (RB size:1# RB offset:0#)	1.4MHz Bandwidth (RB size:1# RB offset:5#)
	
Lowest channel	Highest channel

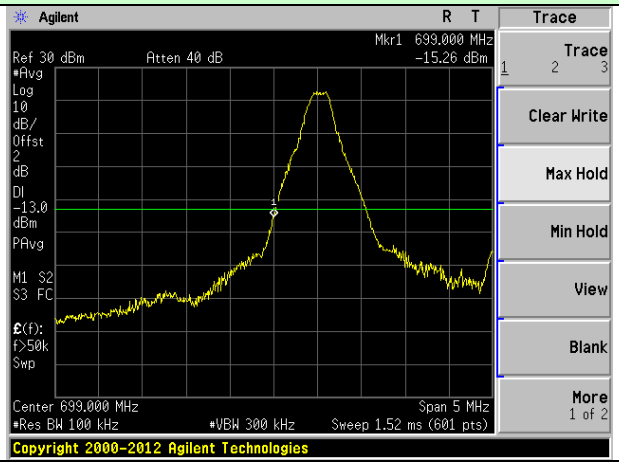
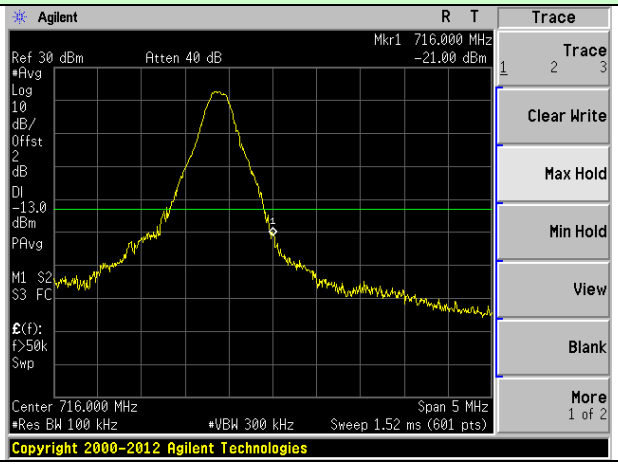
1.4MHz Bandwidth (RB size:3# RB offset:0#)	1.4MHz Bandwidth (RB size:3# RB offset:2#)
	
Lowest channel	Highest channel

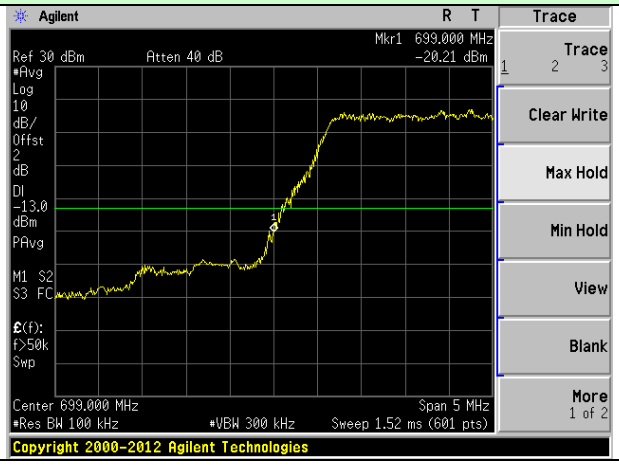
1.4MHz Bandwidth (RB size 6# RB offset:0#)	1.4MHz Bandwidth (RB size:6# RB offset:0#)
	
Lowest channel	Highest channel

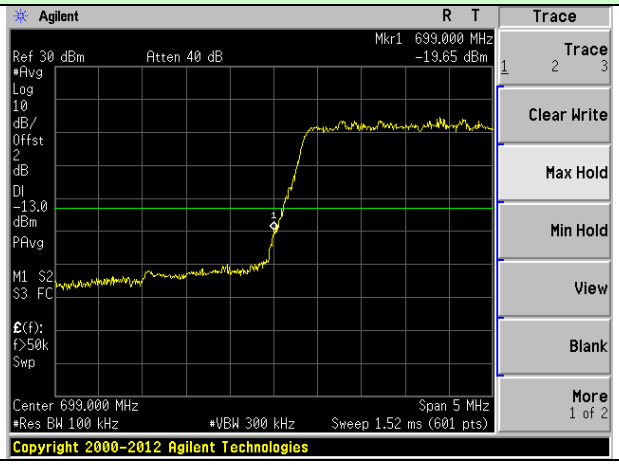
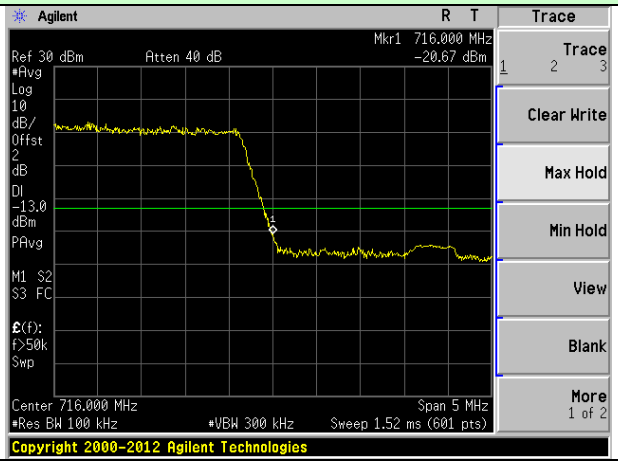
3MHz Bandwidth (RB size:1# RB offset:0#)	3MHz Bandwidth (RB size:1# RB offset:14#)
	
Lowest channel	Highest channel

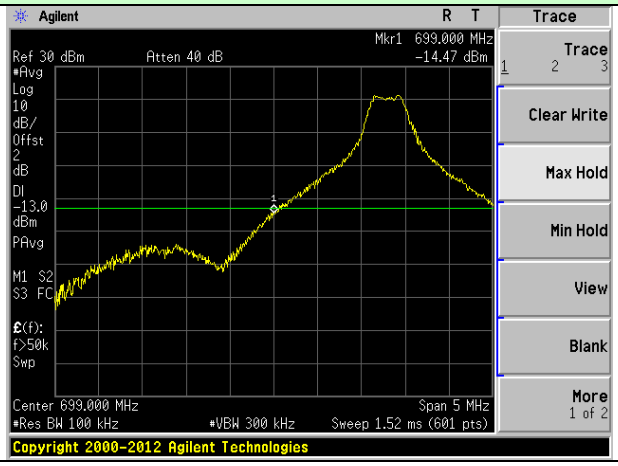
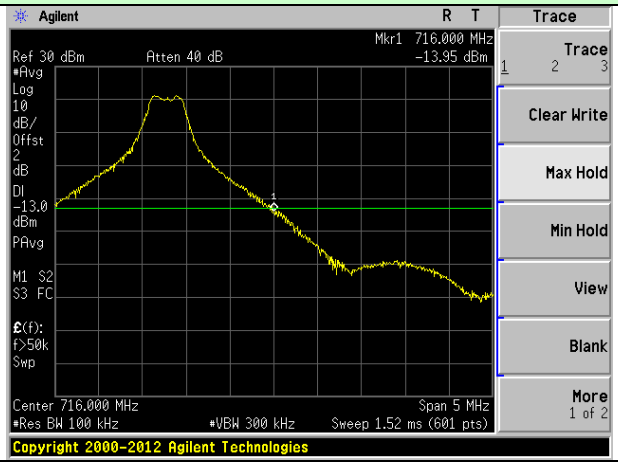
3MHz Bandwidth (RB size:8# RB offset:0#)	3MHz Bandwidth (RB size:8# RB offset:7#)
	
Lowest channel	Highest channel

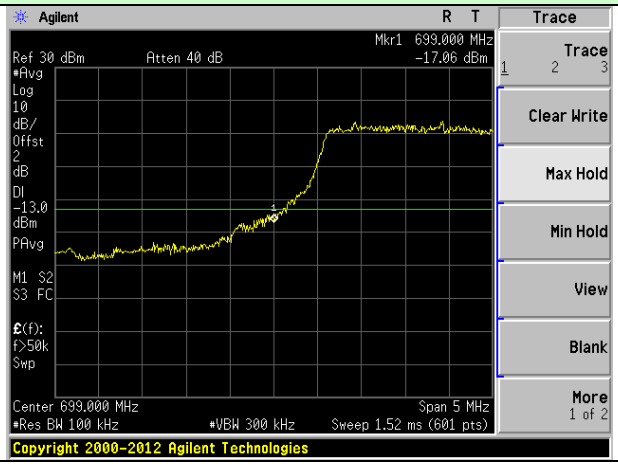
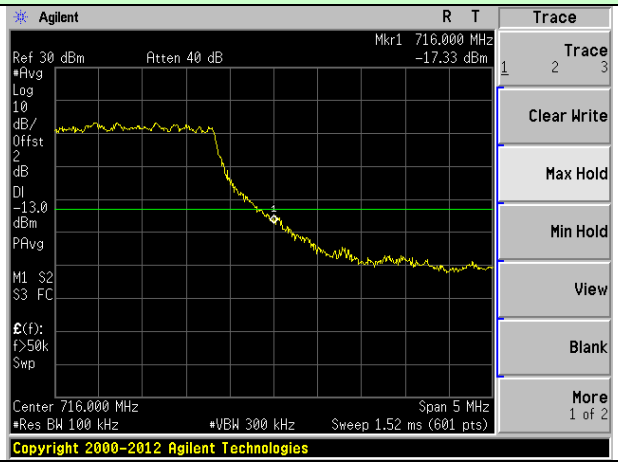
3MHz Bandwidth (RB size:15# RB offset:0#)	3MHz Bandwidth (RB size:15# RB offset:0#)
	
Lowest channel	Highest channel

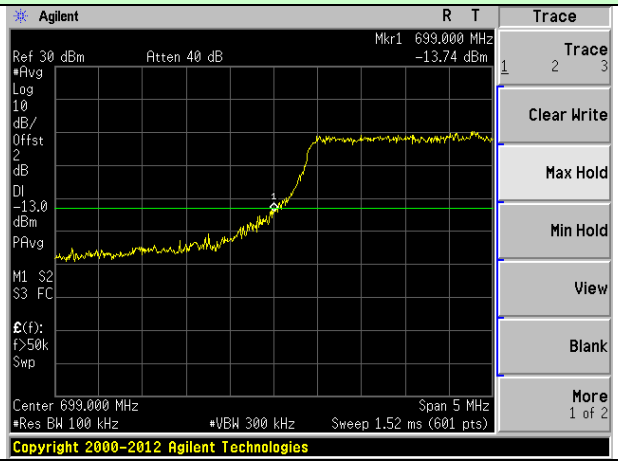
5MHz Bandwidth (RB size:1# RB offset:0#)	5MHz Bandwidth (RB size:1# RB offset:24#)
	
Lowest channel	Highest channel

5MHz Bandwidth (RB size:12# RB offset:0#)	5MHz Bandwidth (RB size:12# RB offset:13#)
	
Lowest channel	Highest channel

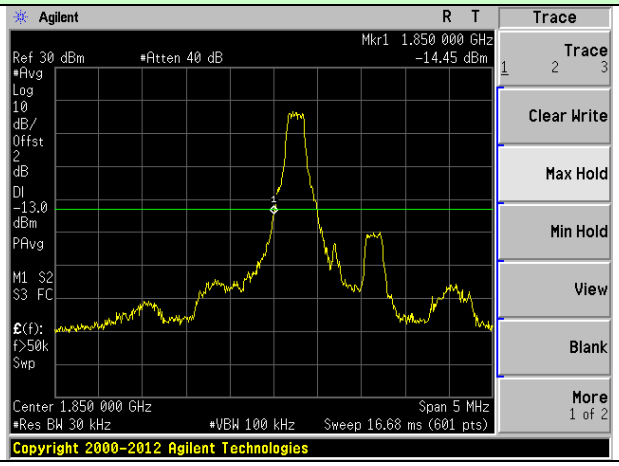
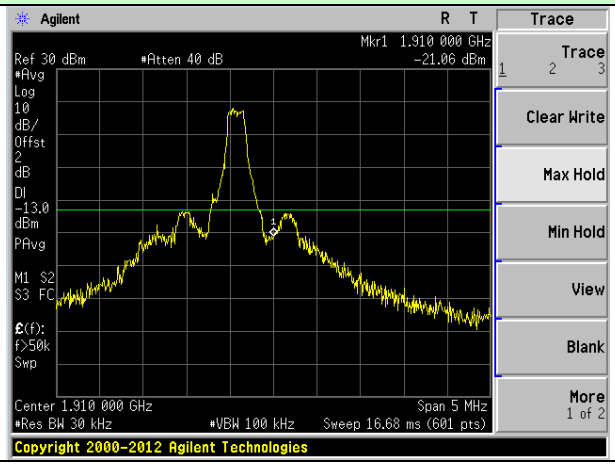
5MHz Bandwidth (RB size:25# RB offset:0#)	5MHz Bandwidth (RB size:25# RB offset:0#)
	
Lowest channel	Highest channel

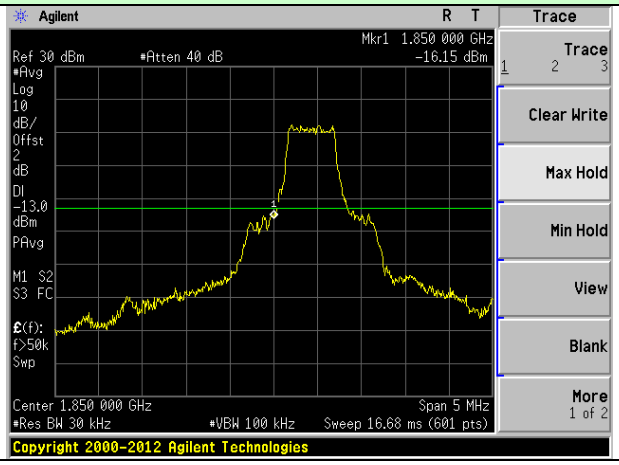
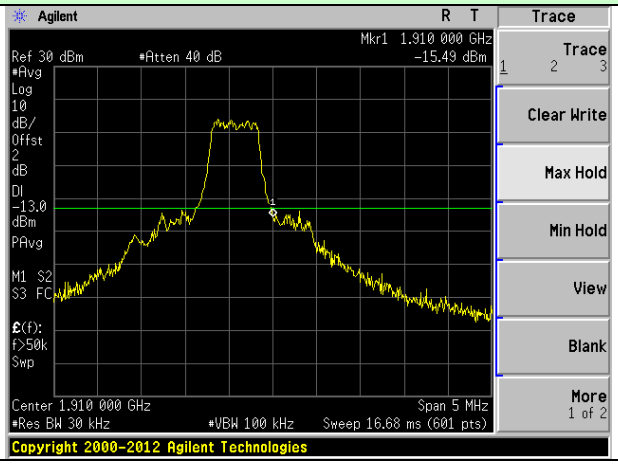
10MHz Bandwidth (RB size:1# RB offset:0#)	10MHz Bandwidth (RB size:1# RB offset:49#)
	
Lowest channel	Highest channel

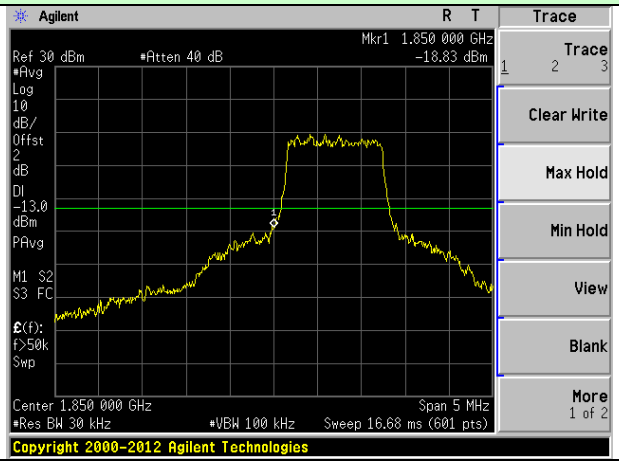
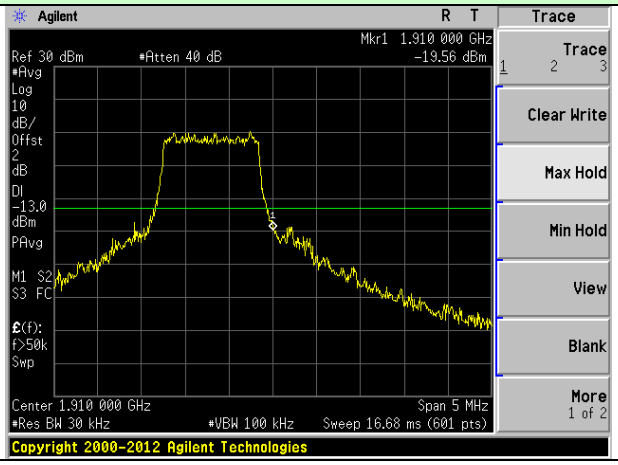
10MHz Bandwidth (RB size:25# RB offset:0#)	10MHz Bandwidth (RB size:25# RB offset:25#)
	
Lowest channel	Highest channel

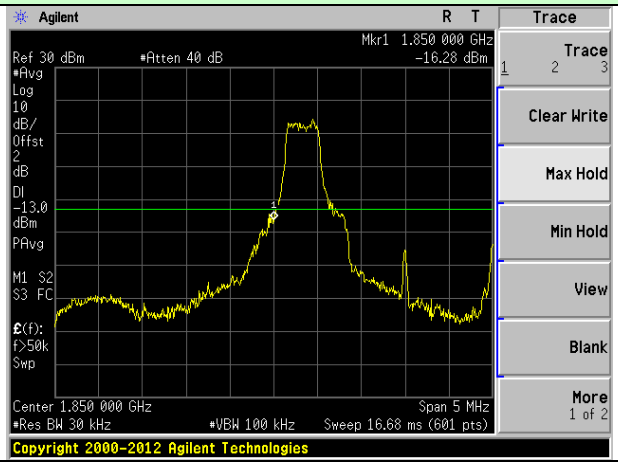
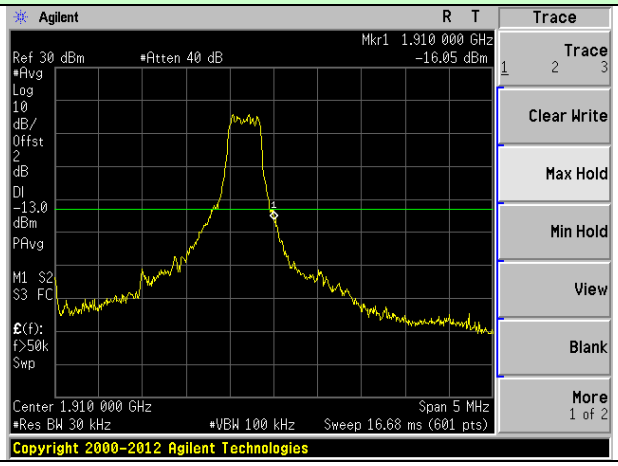
10MHz Bandwidth (RB size:50# RB offset:0#)	10MHz Bandwidth (RB size:50# RB offset:0#)
	
Lowest channel	Highest channel

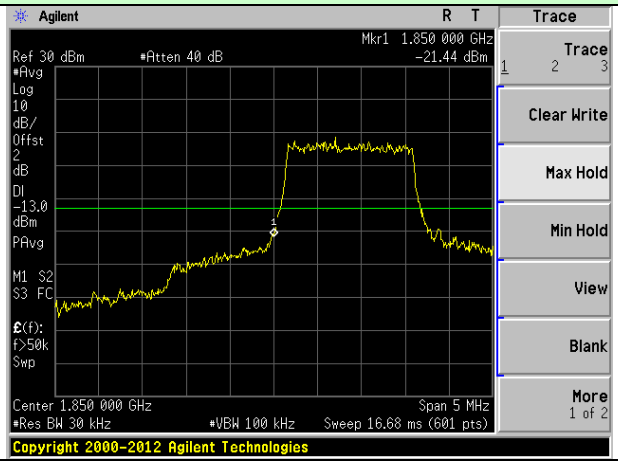
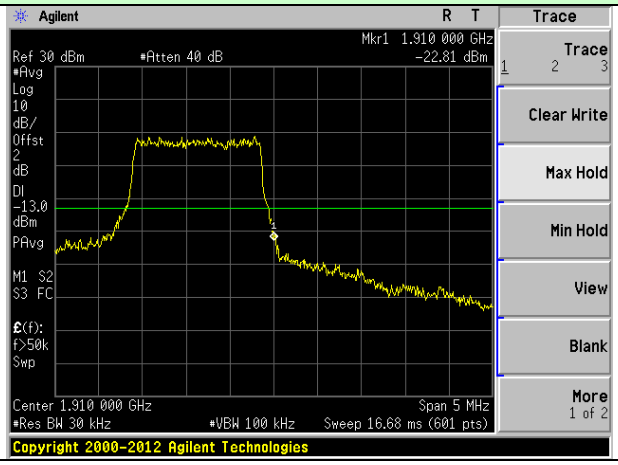
LTE Band 2 (16QAM mode):

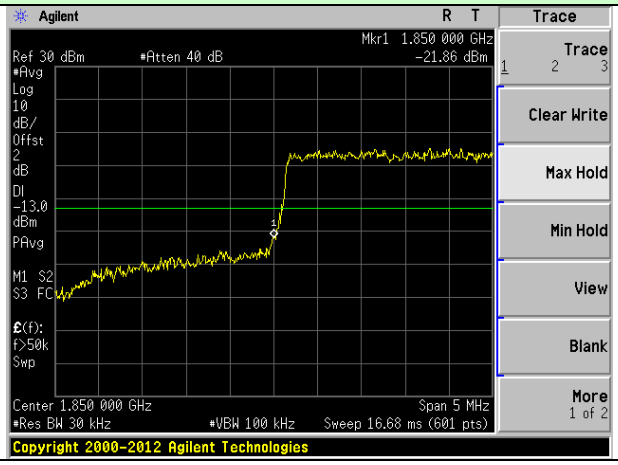
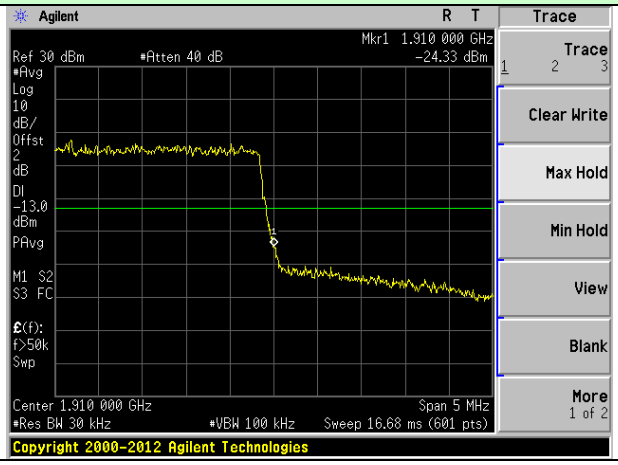
1.4MHz Bandwidth (RB size:1# RB offset:0#)	1.4MHz Bandwidth (RB size:1# RB offset:5#)
	
Lowest channel	Highest channel

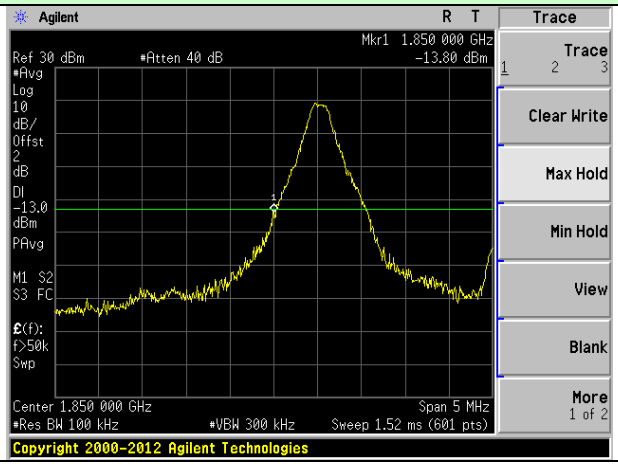
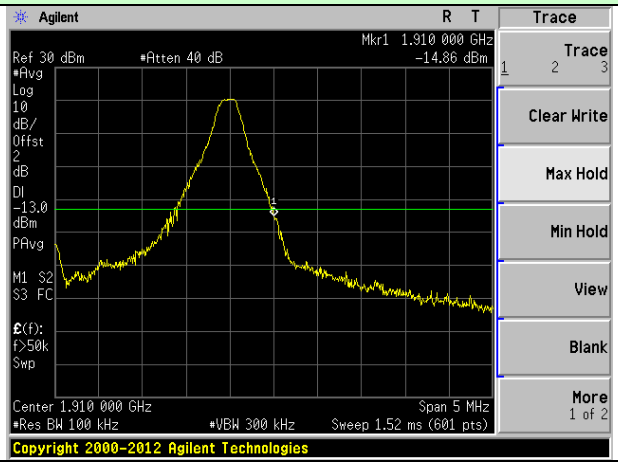
1.4MHz Bandwidth (RB size:3# RB offset:0#)	1.4MHz Bandwidth (RB size:3# RB offset:2#)
	
Lowest channel	Highest channel

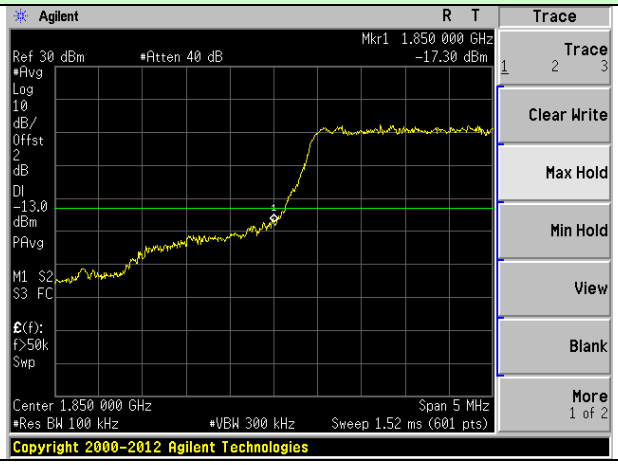
1.4MHz Bandwidth (RB size:6# RB offset:0#)	1.4MHz Bandwidth (RB size:6# RB offset:0#)
	
Lowest channel	Highest channel

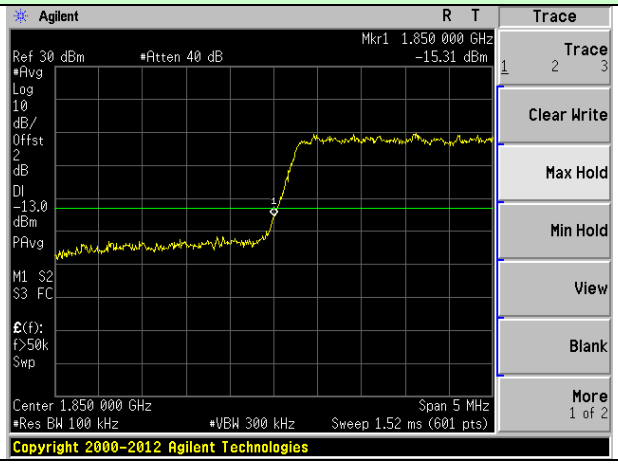
3MHz Bandwidth (RB size:1# RB offset:0#)	3MHz Bandwidth (RB size:1# RB offset:14#)
	
Lowest channel	Highest channel

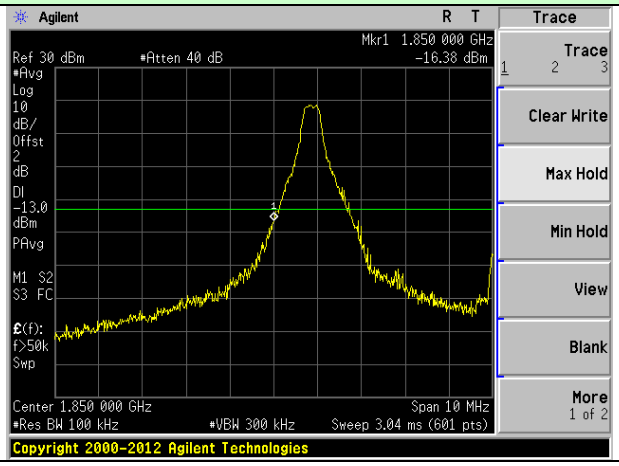
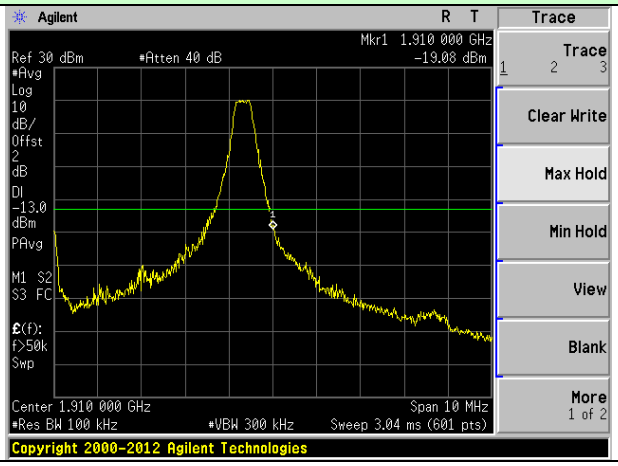
3MHz Bandwidth (RB size:8# RB offset:0#)	3MHz Bandwidth (RB size:8# RB offset:7#)
	
Lowest channel	Highest channel

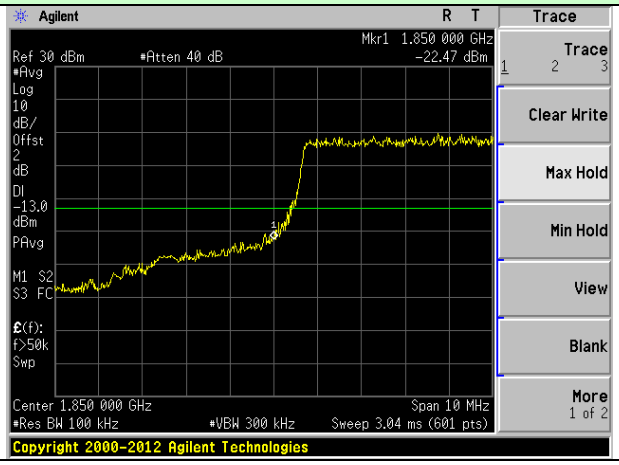
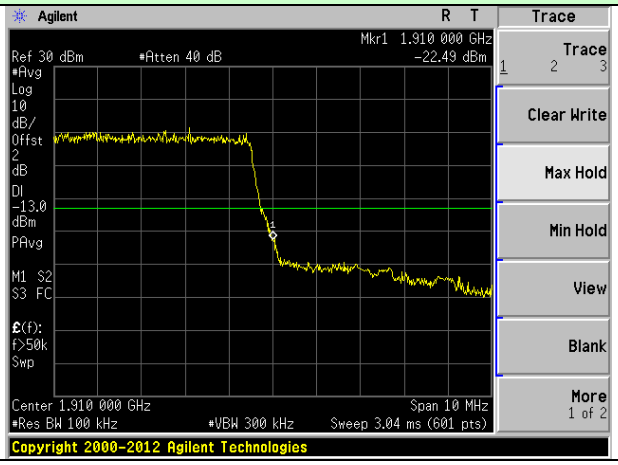
3MHz Bandwidth (RB size:15# RB offset:0#)	3MHz Bandwidth (RB size:15# RB offset:0#)
	
Lowest channel	Highest channel

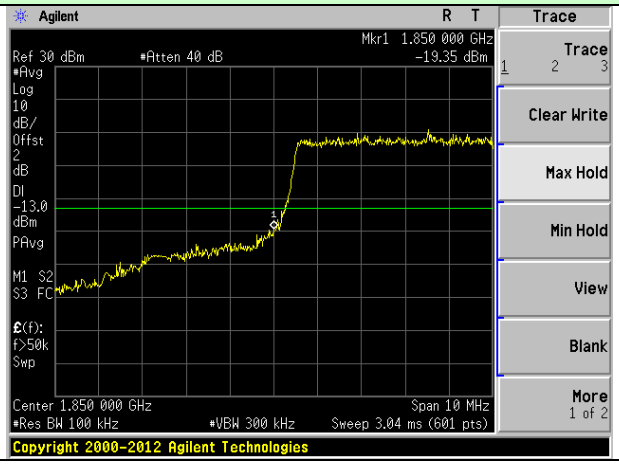
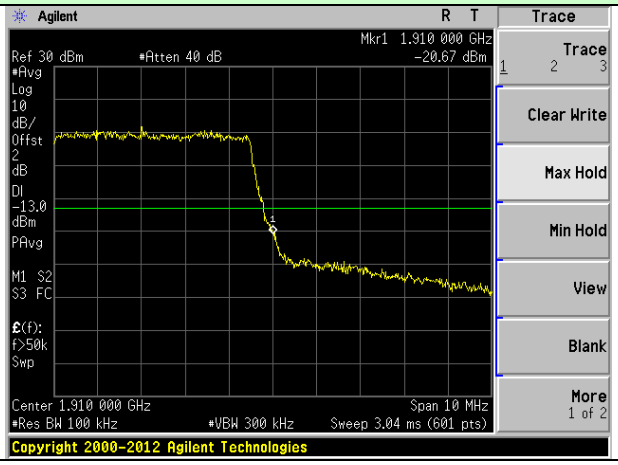
5MHz Bandwidth (RB size:1# RB offset:0#)	5MHz Bandwidth (RB size:1# RB offset:24#)
	
Lowest channel	Highest channel

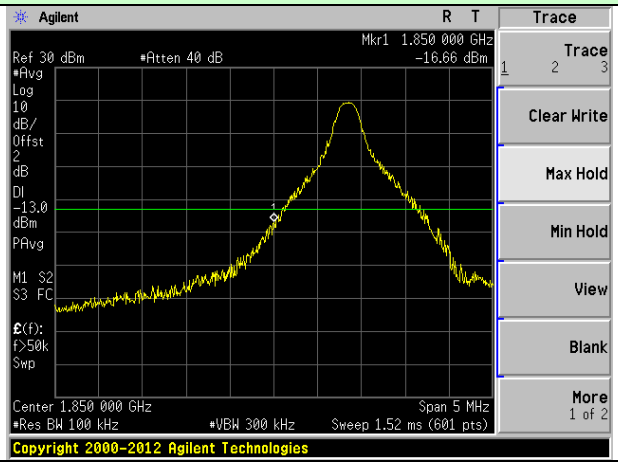
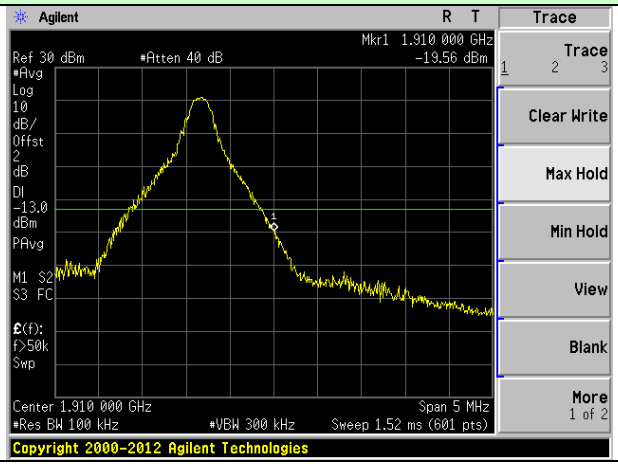
5MHz Bandwidth (RB size:12# RB offset:0#)	5MHz Bandwidth (RB size:12# RB offset:13#)
	
Lowest channel	Highest channel

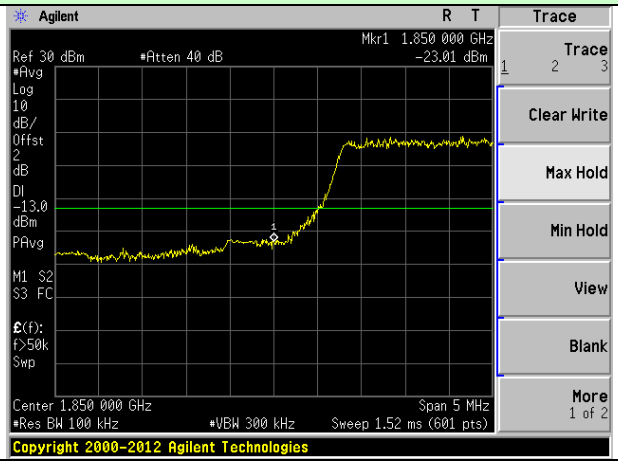
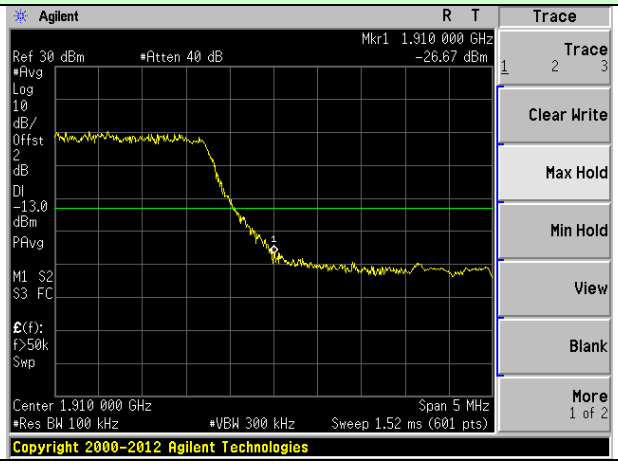
5MHz Bandwidth (RB size:25# RB offset:0#)	5MHz Bandwidth (RB size:25# RB offset:0#)
	
Lowest channel	Highest channel

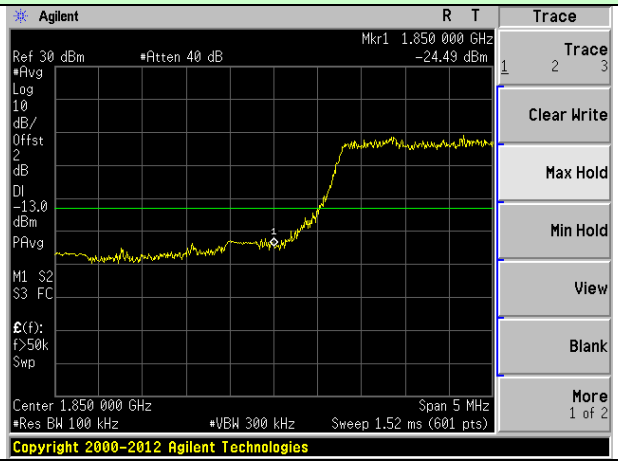
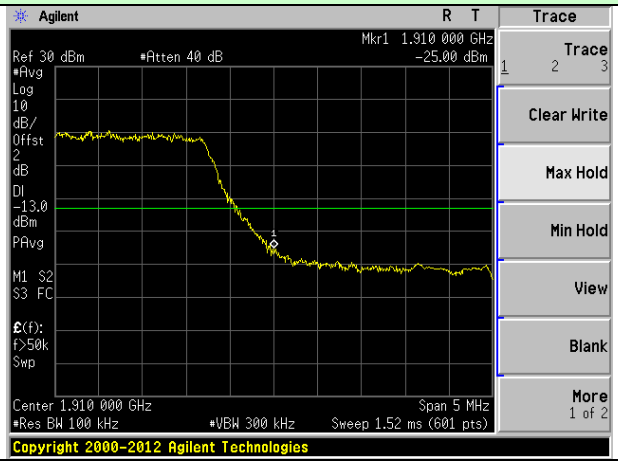
10MHz Bandwidth (RB size:1# RB offset:0#)	10MHz Bandwidth (RB size:1# RB offset:49#)
	
Lowest channel	Highest channel

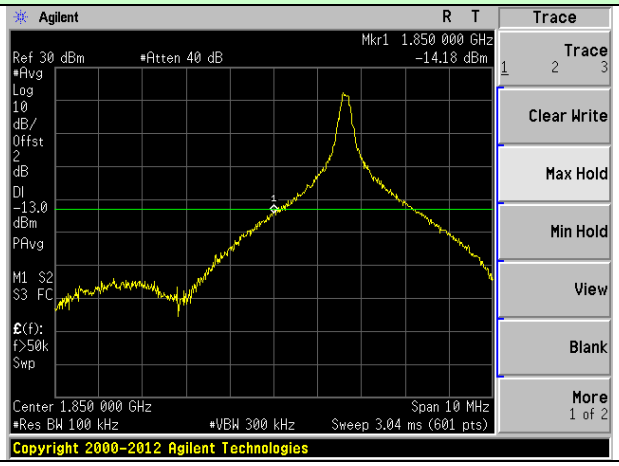
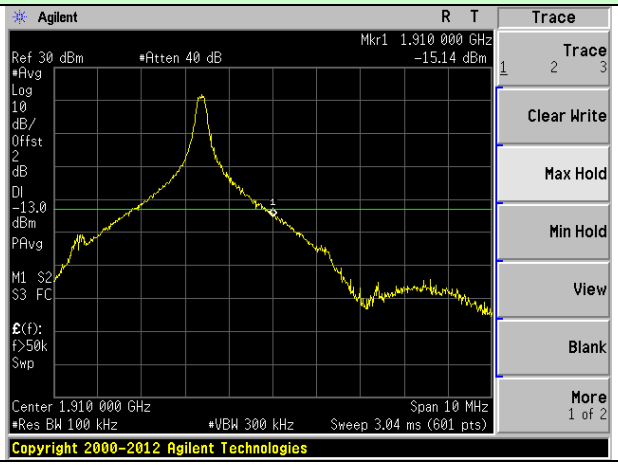
10MHz Bandwidth (RB size:25# RB offset:0#)	10MHz Bandwidth (RB size:25# RB offset:25#)
	
Lowest channel	Highest channel

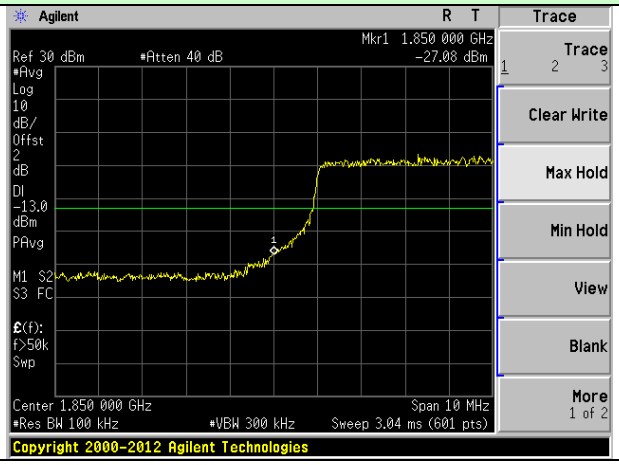
10MHz Bandwidth (RB size:50# RB offset:0#)	10MHz Bandwidth (RB size:50# RB offset:0#)
	
Lowest channel	Highest channel

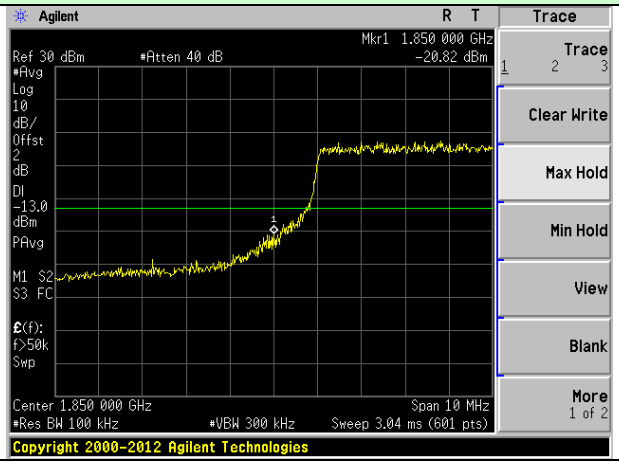
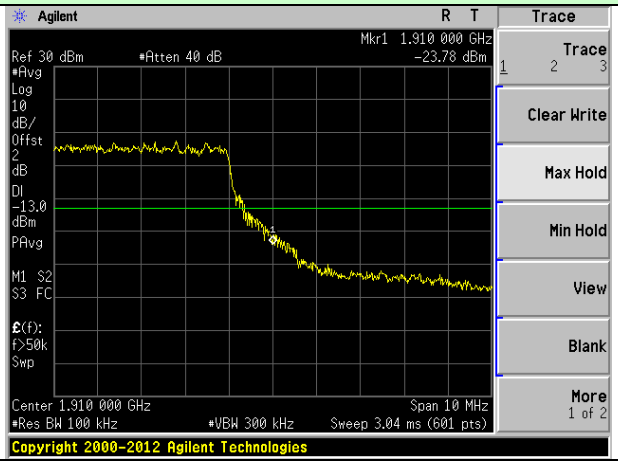
15MHz Bandwidth (RB size:1# RB offset:0#)	15MHz Bandwidth (RB size:1# RB offset:74#)
	
Lowest channel	Highest channel

15MHz Bandwidth (RB size:36# RB offset:0#)	15MHz Bandwidth (RB size:36# RB offset:39#)
	
Lowest channel	Highest channel

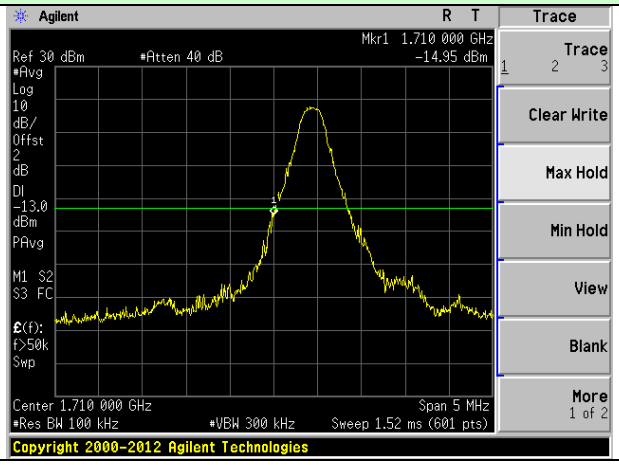
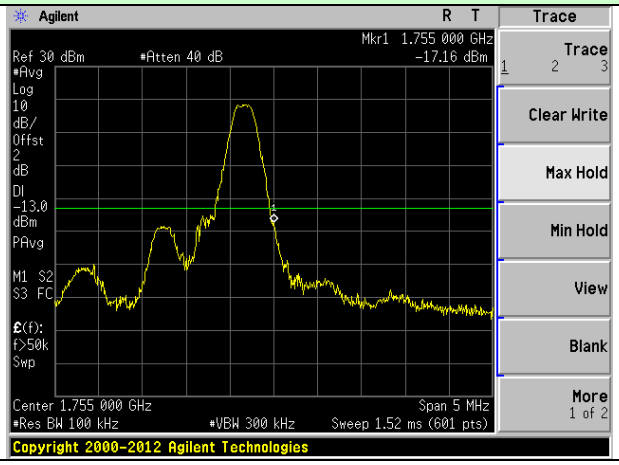
15MHz Bandwidth (RB size:75# RB offset:0#)	15MHz Bandwidth (RB size:75# RB offset:0#)
	
Lowest channel	Highest channel

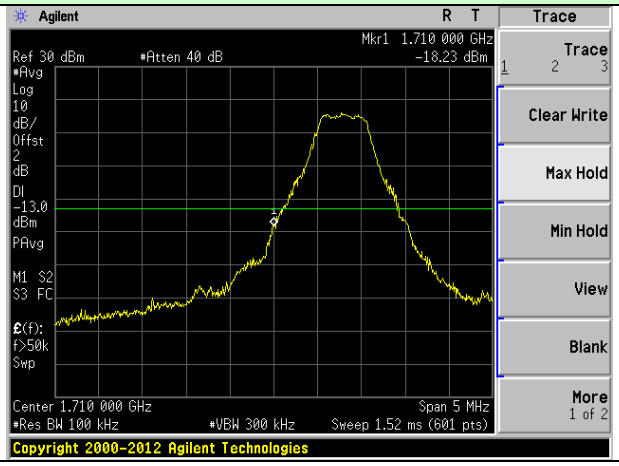
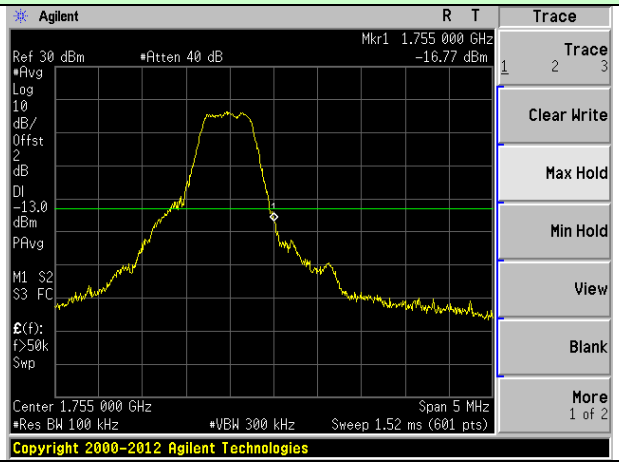
20MHz Bandwidth (RB size:1# RB offset:0#)	20MHz Bandwidth (RB size:1# RB offset:99#)
	
Lowest channel	Highest channel

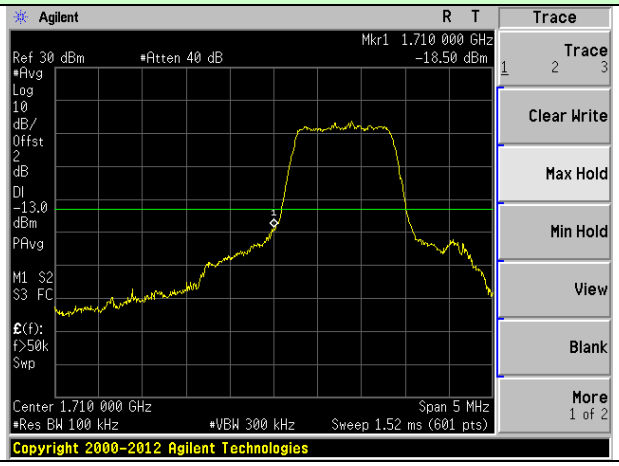
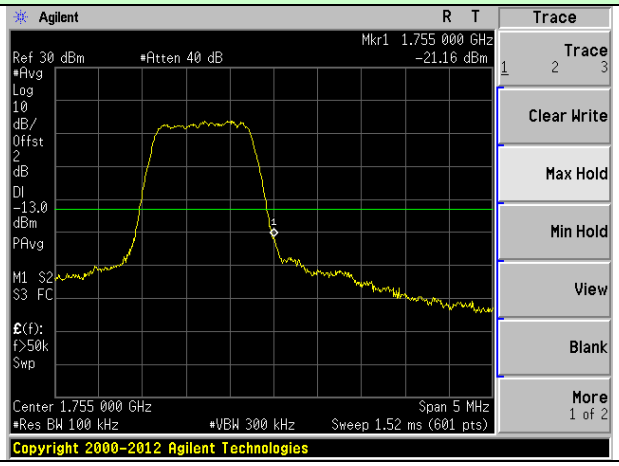
20MHz Bandwidth (RB size:50# RB offset:0#)	20MHz Bandwidth (RB size:50# RB offset:50#)
	
Lowest channel	Highest channel

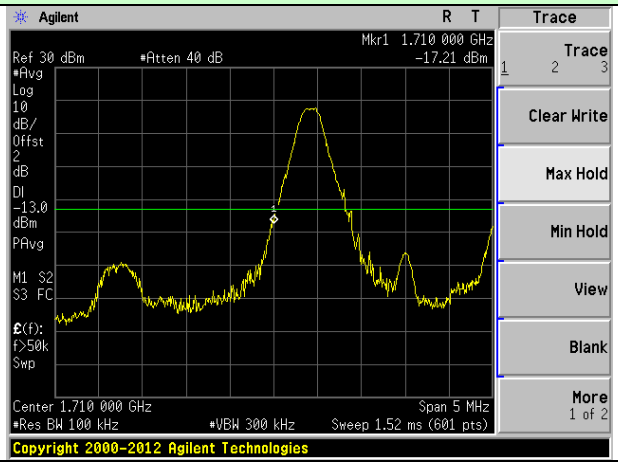
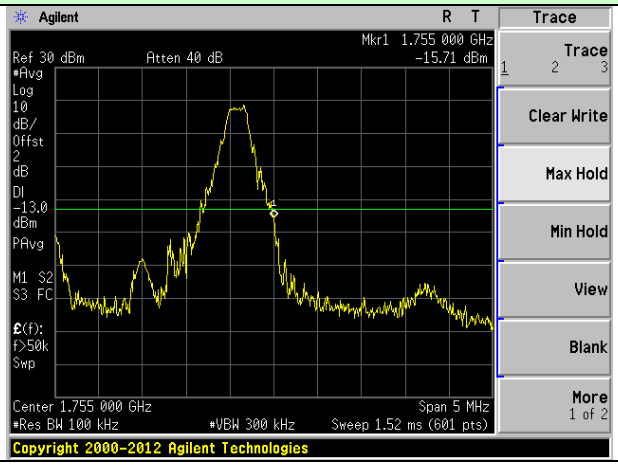
20MHz Bandwidth (RB size:100# RB offset:0#)	20MHz Bandwidth (RB size:100# RB offset:0#)
	
Lowest channel	Highest channel

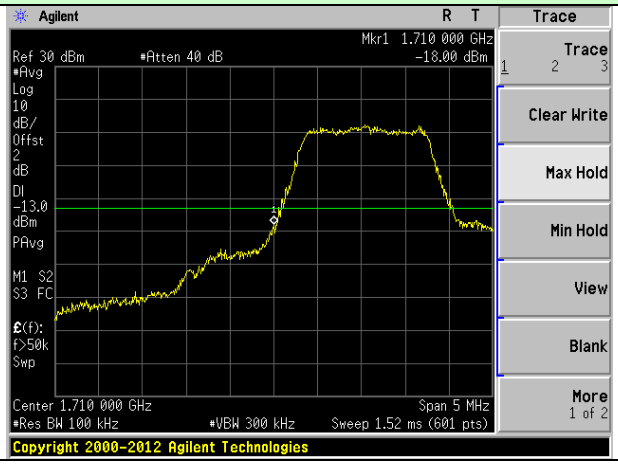
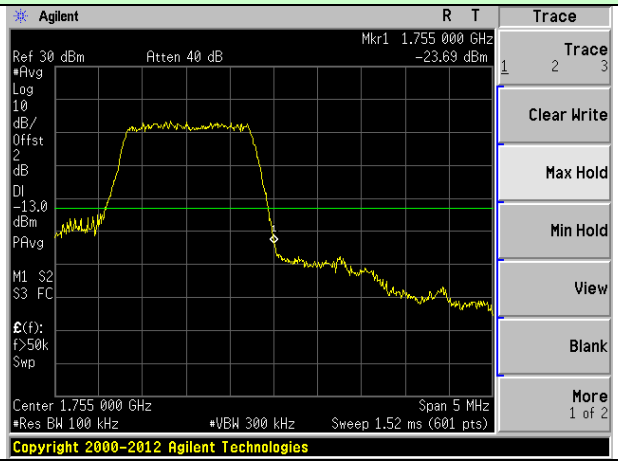
LTE Band 4 (16QAM mode):

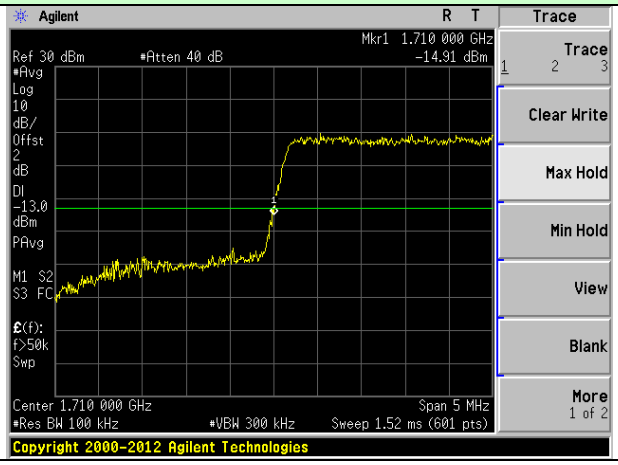
1.4MHz Bandwidth (RB size:1# RB offset:0#)	1.4MHz Bandwidth (RB size:1# RB offset:5#)
	
Lowest channel	Highest channel

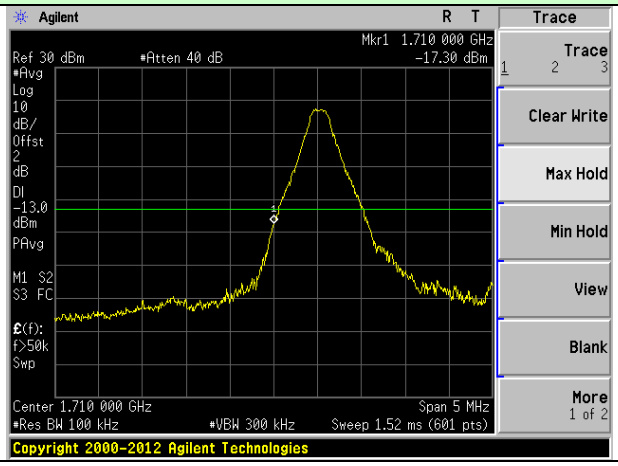
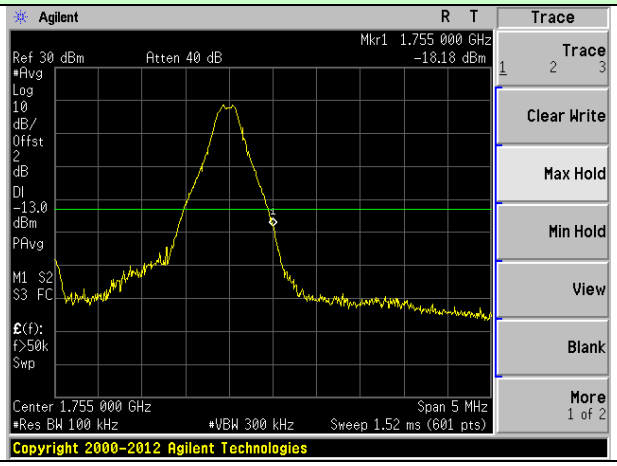
1.4MHz Bandwidth (RB size:3# RB offset:0#)	1.4MHz Bandwidth (RB size:3# RB offset:2#)
	
Lowest channel	Highest channel

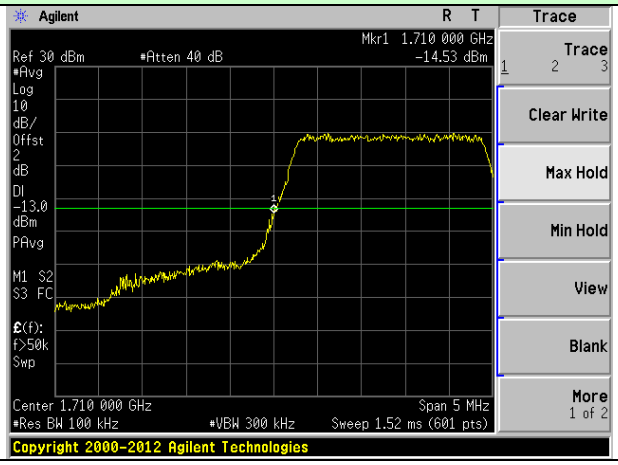
1.4MHz Bandwidth (RB size:6# RB offset:0#)	1.4MHz Bandwidth (RB size:6# RB offset:0#)
	
Lowest channel	Highest channel

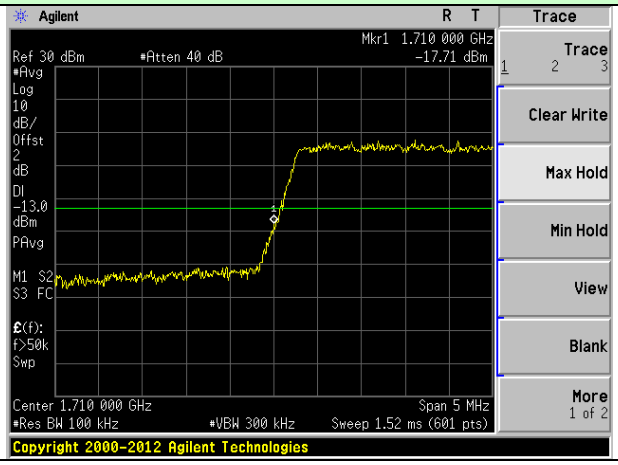
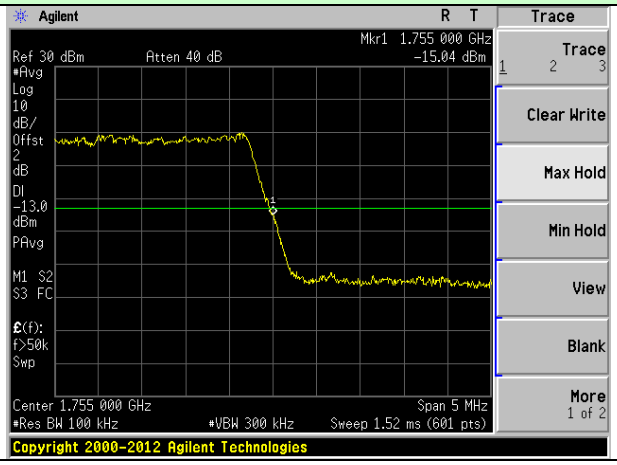
3MHz Bandwidth (RB size:1# RB offset:0#)	3MHz Bandwidth (RB size:1# RB offset:14#)
	
Lowest channel	Highest channel

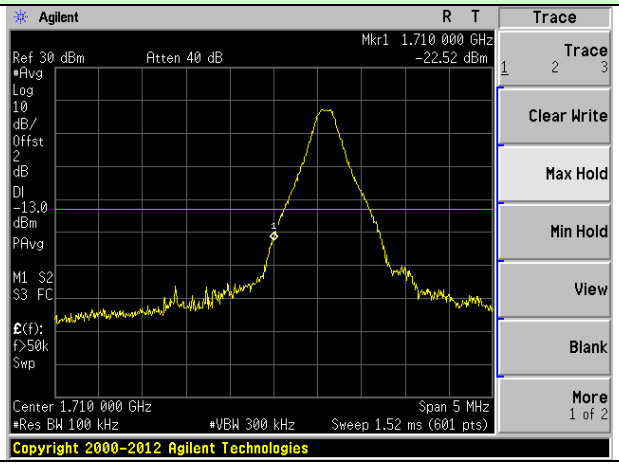
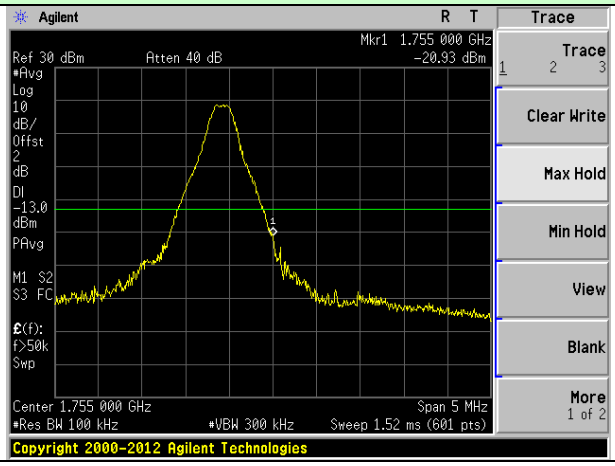
3MHz Bandwidth (RB size:8# RB offset:0#)	3MHz Bandwidth (RB size:8# RB offset:7#)
	
Lowest channel	Highest channel

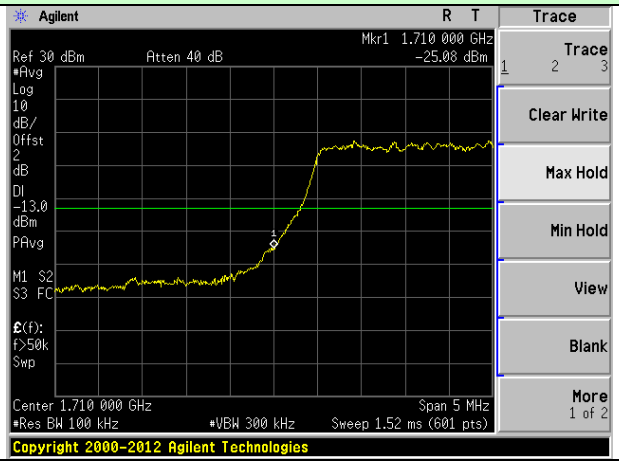
3MHz Bandwidth (RB size:15# RB offset:0#)	3MHz Bandwidth (RB size:15# RB offset:0#)
	
Lowest channel	Highest channel

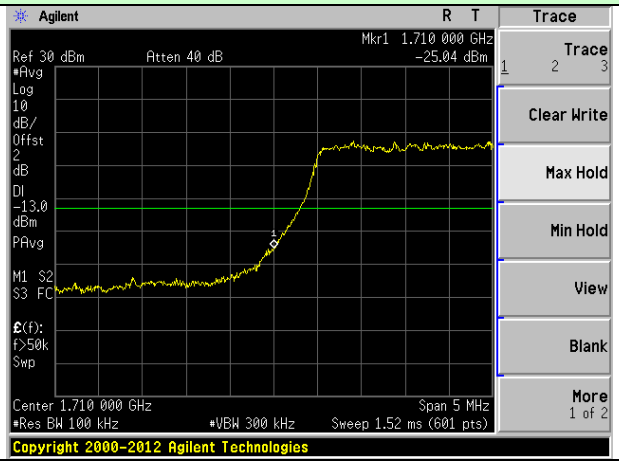
5MHz Bandwidth (RB size:1# RB offset:0#)	5MHz Bandwidth (RB size:1# RB offset:24#)
	
Lowest channel	Highest channel

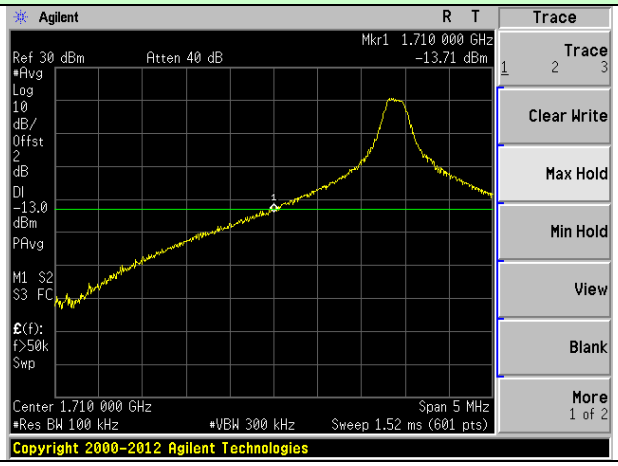
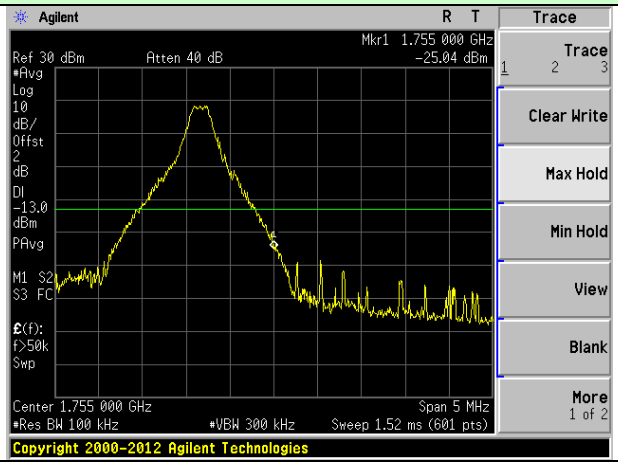
5MHz Bandwidth (RB size:12# RB offset:0#)	5MHz Bandwidth (RB size:12# RB offset:13#)
	
Lowest channel	Highest channel

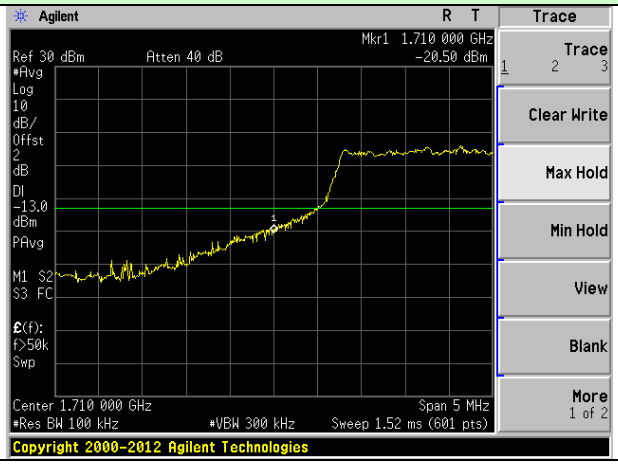
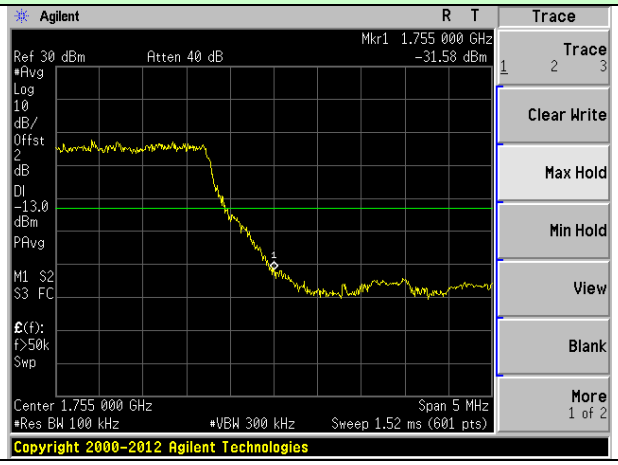
5MHz Bandwidth (RB size:25# RB offset:0#)	5MHz Bandwidth (RB size:25# RB offset:0#)
	
Lowest channel	Highest channel

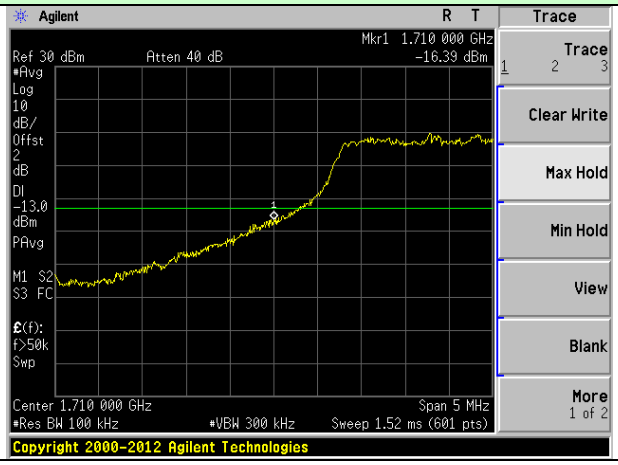
10MHz Bandwidth (RB size:1# RB offset:0#)	10MHz Bandwidth (RB size:1# RB offset:49#)
	
Lowest channel	Highest channel

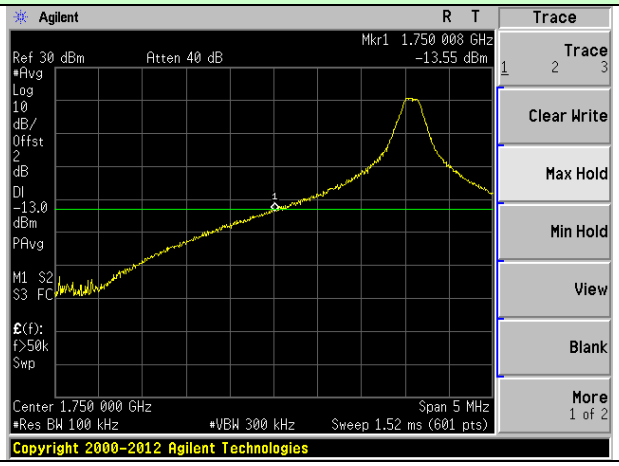
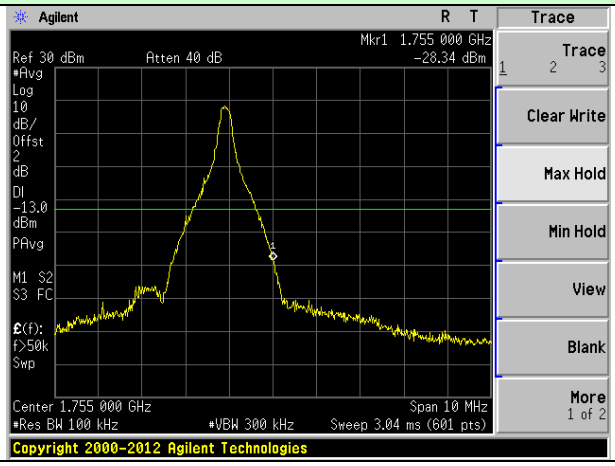
10MHz Bandwidth (RB size:25# RB offset:0#)	10MHz Bandwidth (RB size:25# RB offset:25#)
	
Lowest channel	Highest channel

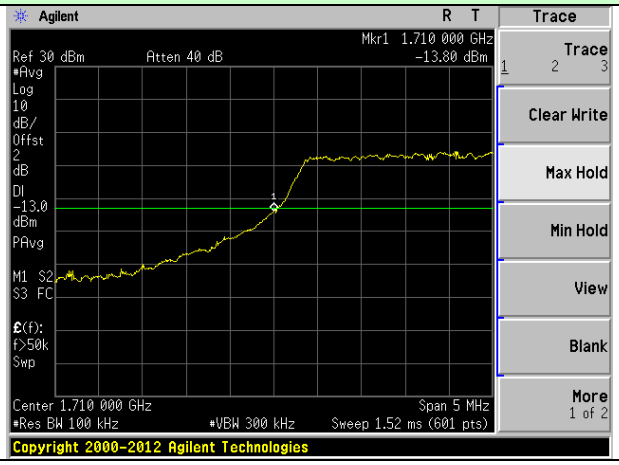
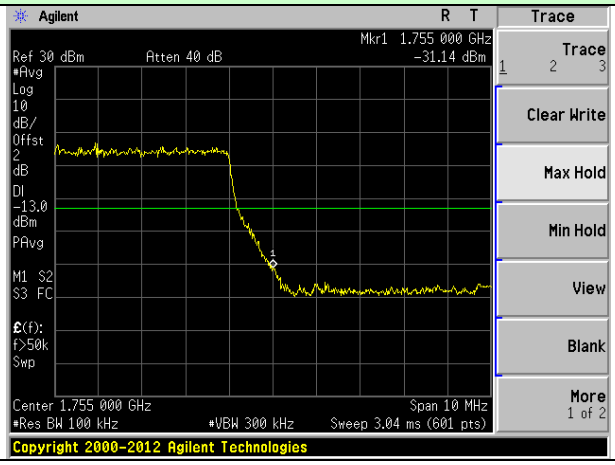
10MHz Bandwidth (RB size:50# RB offset:0#)	10MHz Bandwidth (RB size:50# RB offset:0#)
	
Lowest channel	Highest channel

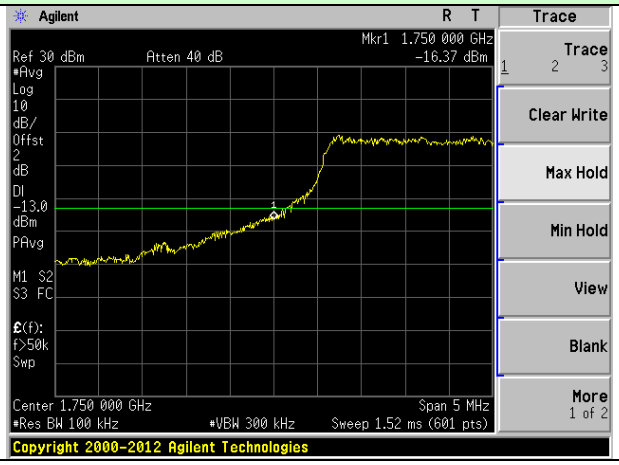
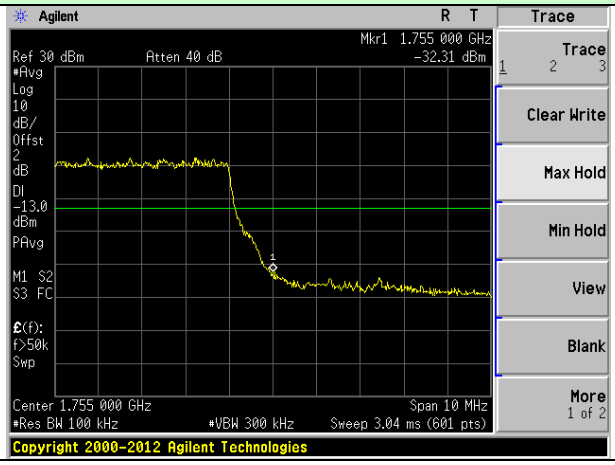
15MHz Bandwidth (RB size:1# RB offset:0#)	15MHz Bandwidth (RB size:1# RB offset:74#)
	
Lowest channel	Highest channel

15MHz Bandwidth (RB size:36# RB offset:0#)	15MHz Bandwidth (RB size:36# RB offset:39#)
	
Lowest channel	Highest channel

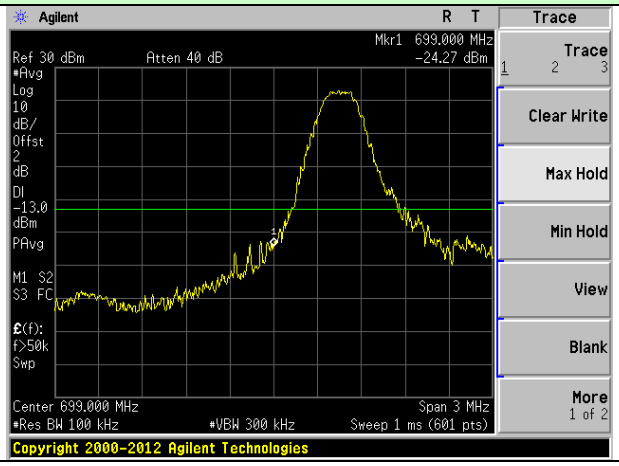
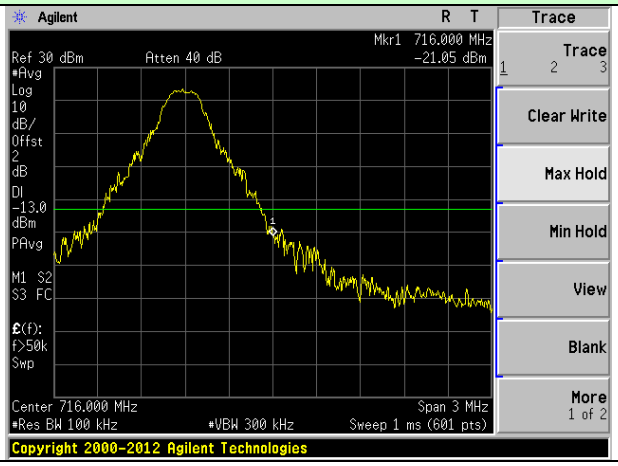
15MHz Bandwidth (RB size:75# RB offset:0#)	15MHz Bandwidth (RB size:75# RB offset:0#)
	
Lowest channel	Highest channel

20MHz Bandwidth (RB size:1# RB offset:0#)	20MHz Bandwidth (RB size:1# RB offset:99#)
	
Lowest channel	Highest channel

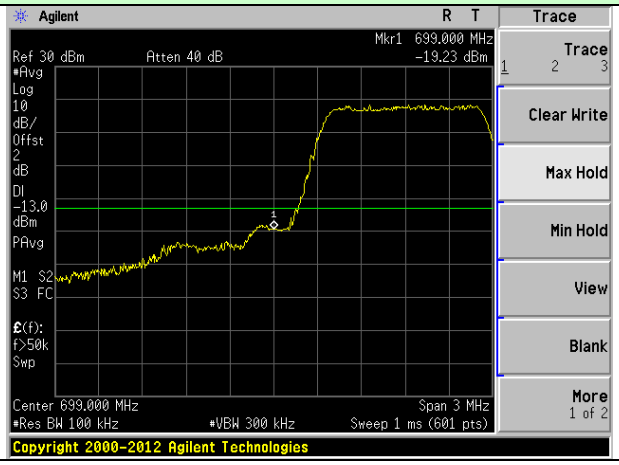
20MHz Bandwidth (RB size:50# RB offset:0#)	20MHz Bandwidth (RB size:50# RB offset:50#)
	
Lowest channel	Highest channel

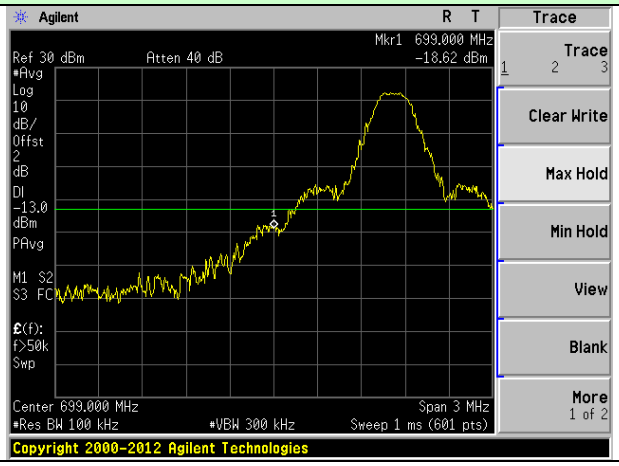
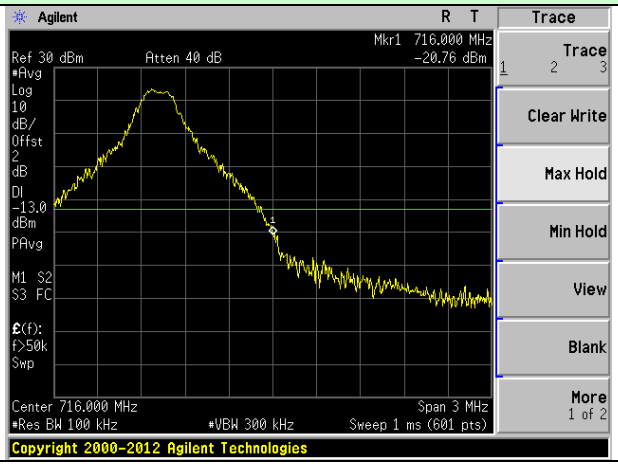
20MHz Bandwidth (RB size:100# RB offset:0#)	20MHz Bandwidth (RB size:100# RB offset:0#)
	
Lowest channel	Highest channel

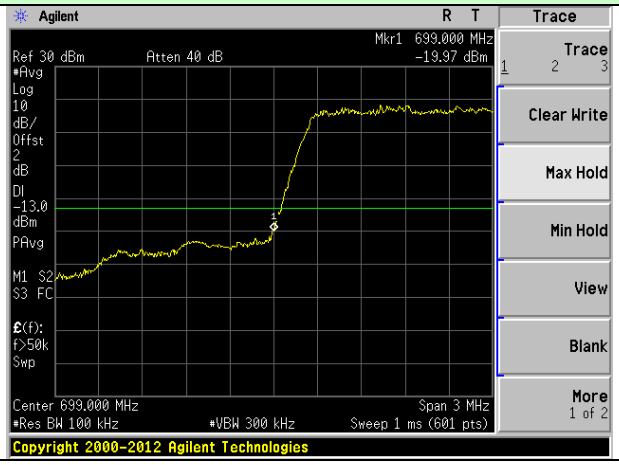
LTE Band 12 (16QAM mode):

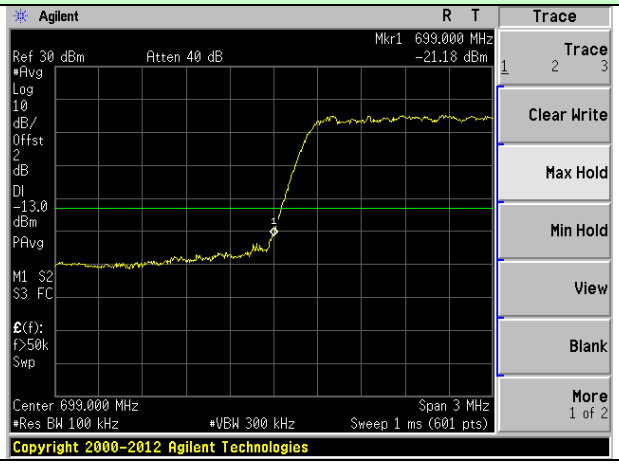
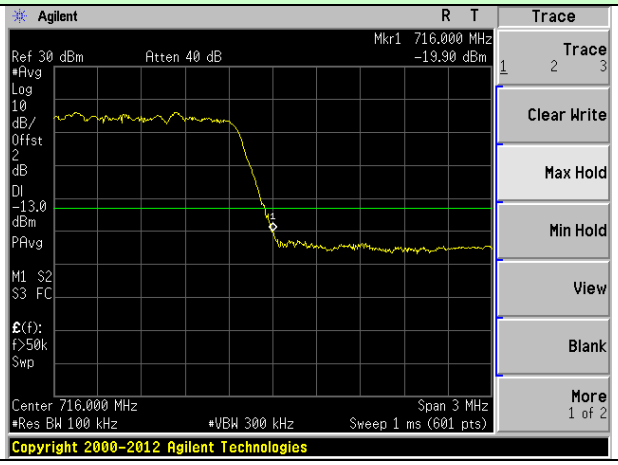
1.4MHz Bandwidth (RB size:1# RB offset:0#)	1.4MHz Bandwidth (RB size:1# RB offset:5#)
	
Lowest channel	Highest channel

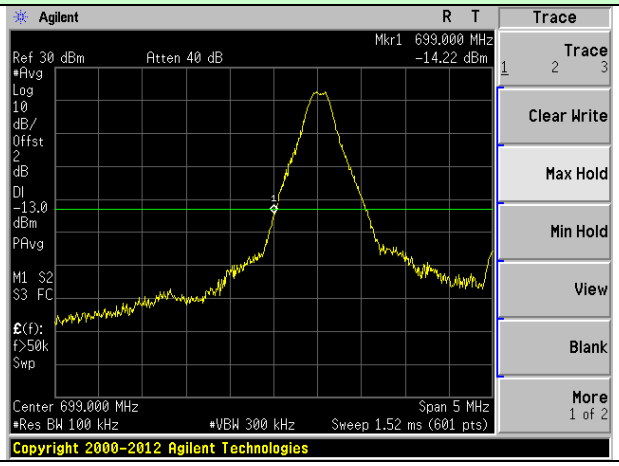
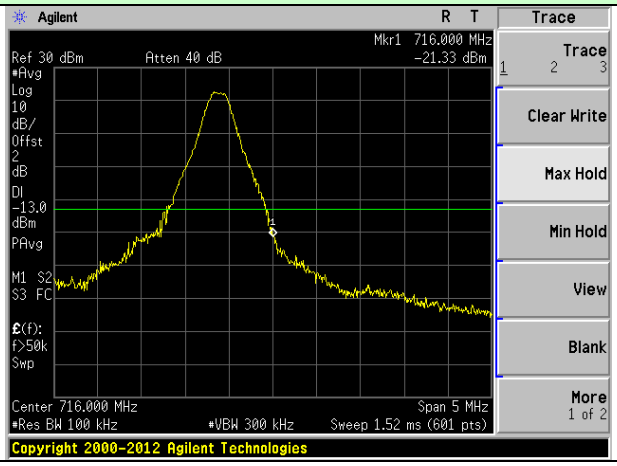
1.4MHz Bandwidth (RB size:3# RB offset:0#)	1.4MHz Bandwidth (RB size:3# RB offset:2#)
	
Lowest channel	Highest channel

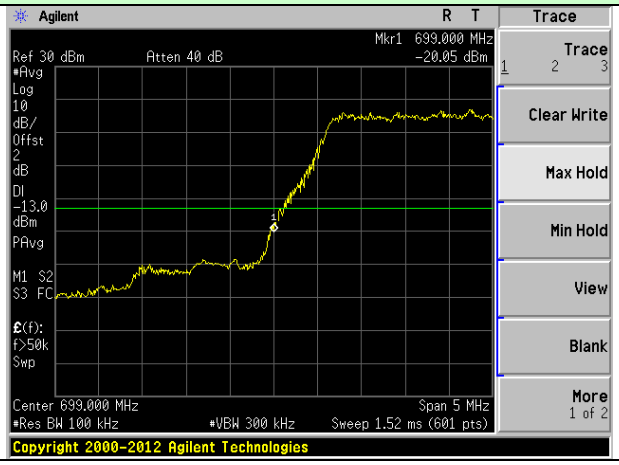
1.4MHz Bandwidth (RB size 6# RB offset:0#)	1.4MHz Bandwidth (RB size:6# RB offset:0#)
	
Lowest channel	Highest channel

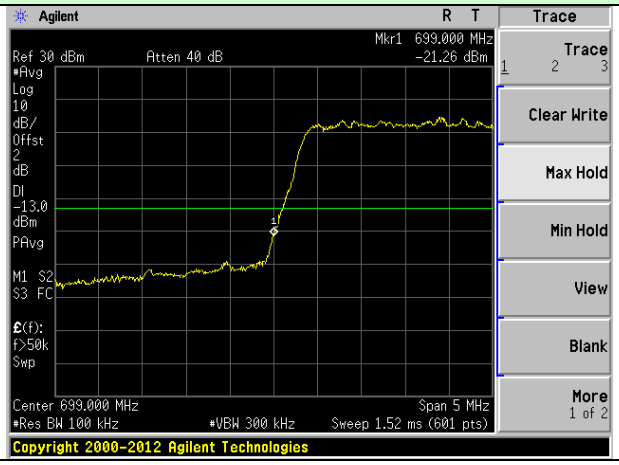
3MHz Bandwidth (RB size:1# RB offset:0#)	3MHz Bandwidth (RB size:1# RB offset:14#)
	
Lowest channel	Highest channel

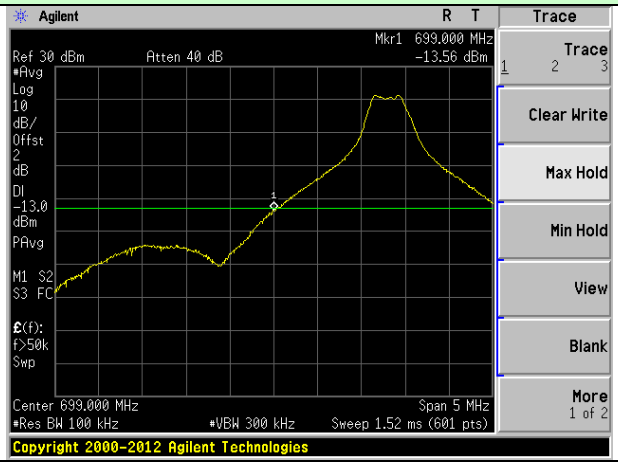
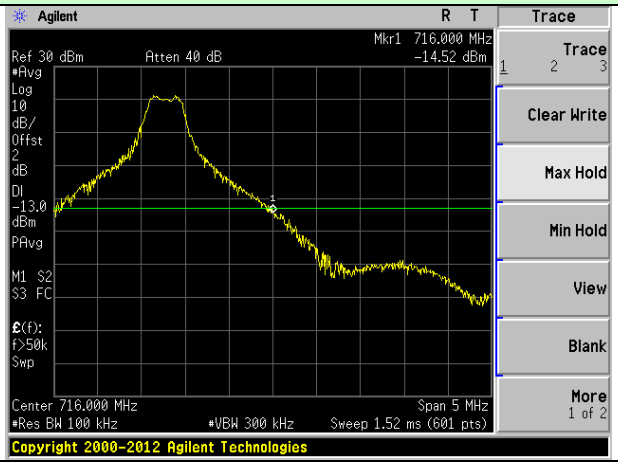
3MHz Bandwidth (RB size:8# RB offset:0#)	3MHz Bandwidth (RB size:8# RB offset:7#)
	
Lowest channel	Highest channel

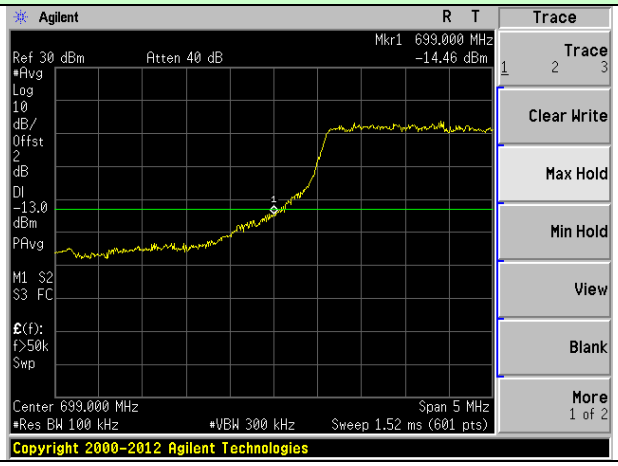
3MHz Bandwidth (RB size:15# RB offset:0#)	3MHz Bandwidth (RB size:15# RB offset:0#)
	
Lowest channel	Highest channel

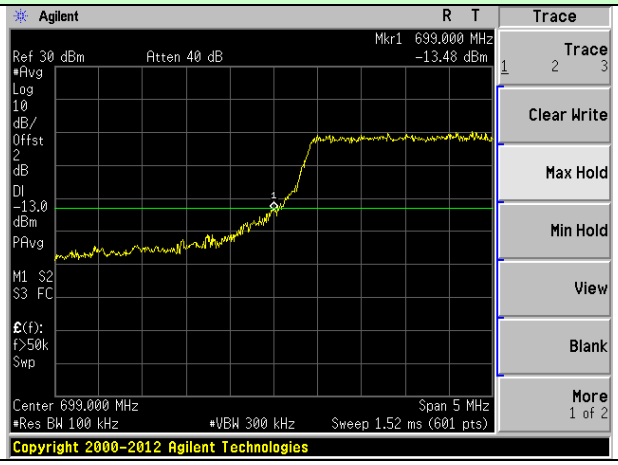
5MHz Bandwidth (RB size:1# RB offset:0#)	5MHz Bandwidth (RB size:1# RB offset:24#)
	
Lowest channel	Highest channel

5MHz Bandwidth (RB size:12# RB offset:0#)	5MHz Bandwidth (RB size:12# RB offset:13#)
	
Lowest channel	Highest channel

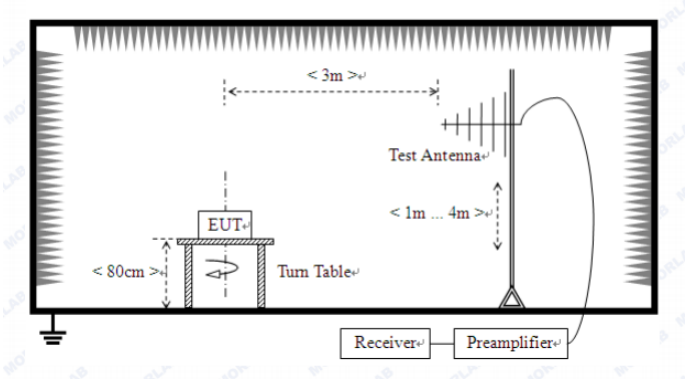
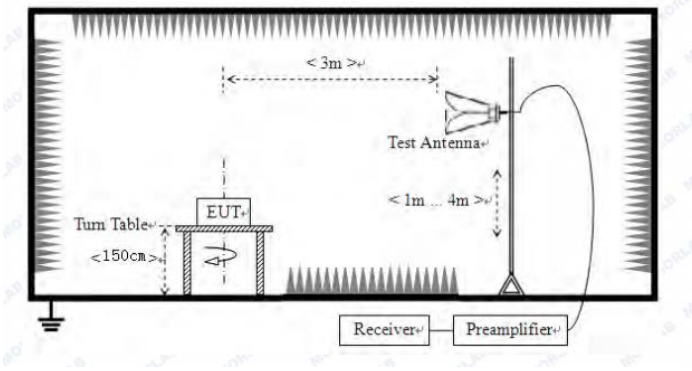
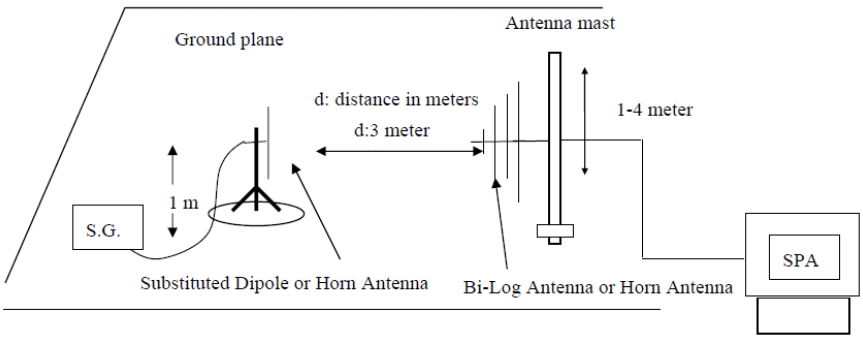
5MHz Bandwidth (RB size:25# RB offset:0#)	5MHz Bandwidth (RB size:25# RB offset:0#)
	
Lowest channel	Highest channel

10MHz Bandwidth (RB size:1# RB offset:0#)	10MHz Bandwidth (RB size:1# RB offset:49#)
	
Lowest channel	Highest channel

10MHz Bandwidth (RB size:25# RB offset:0#)	10MHz Bandwidth (RB size:25# RB offset:25#)
	
Lowest channel	Highest channel

10MHz Bandwidth (RB size:50# RB offset:0#)	10MHz Bandwidth (RB size:50# RB offset:0#)
	
Lowest channel	Highest channel

7.8 ERP, EIRP Measurement

Test Requirement:	Part 24.238 (a); Part 27.50(c)(10)/(d)(4)
Test Method:	FCC part2.1046 and ANSI C63.26:2015
Limit:	LTE Band 2: 2W (EIRP) LTE Band 4: 1W (EIRP) LTE Band 12: 3W (ERP)
Test setup:	Below 1GHz  Above 1GHz  Substituted method: 

Test Procedure:	1. The EUT was placed on an non-conductive turntable using a non-conductive support. The radiated emission at the fundamental frequency was measured at 3 m with a test antenna and EMI spectrum analyzer. 2. During the measurement, the EUT was communication with the station. The highest emission was recorded with the rotation of the turntable and the lowering of the test antenna from 4m to 1m. The reading was recorded and the field strength (E in dBuV/m) was calculated. 3. ERP in frequency band 777–787MHz were measured using a substitution method. The EUT was replaced by dipole antenna connected, the S.G. output was recorded and ERP was calculated asfollows: ERP = S.G. output (dBm) + Antenna Gain (dBd) – Cable Loss (dB) 4. EIRP in frequency band 1710–1755MHz were measured using a substitution method. The EUT was replaced by or horn antenna connected, the S.G. output was recorded and EIRP was calculated as follows: EIRP = S.G. output (dBm) + Antenna Gain (dBi) – Cable Loss (dB)
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 7.1 for details
Test results:	Pass

Measurement Data

Modulation Mode：QPSK Mode

LTE Band 2(QPSK mode)						
EUT mode	**Channel**	**EUT Pol.**	**Antenna Pol.**	**EIRP(dBm)**	**Limit (dBm)**	**Result**
LTE Band 2 (1.4MHz)	Lowest	H	V	22.14	33.00	Pass
			H	20.27		
		E1	V	21.96		
			H	19.54		
		E2	V	21.12		
			H	18.26		
	Middle	H	V	22.11	33.00	Pass
			H	19.49		
		E1	V	21.70		
			H	19.21		
		E2	V	21.59		
			H	18.44		
	Highest	H	V	21.99	33.00	Pass
			H	19.67		
		E1	V	21.71		
			H	19.36		
		E2	V	21.53		
			H	18.92		
LTE Band 2 (3MHz)	Lowest	H	V	22.05	33.00	Pass
			H	20.44		
		E1	V	22.10		
			H	19.75		
		E2	V	21.35		
			H	18.51		
	Middle	H	V	22.07	33.00	Pass
			H	19.75		
		E1	V	21.98		
			H	19.51		
		E2	V	21.84		
			H	18.71		
	Highest	H	V	22.01	33.00	Pass
			H	19.90		
		E1	V	21.96		
			H	19.63		
		E2	V	21.71		
			H	19.12		

LTE Band 2(QPSK mode)						
EUT mode	**Channel**	**EUT Pol.**	**Antenna Pol.**	**EIRP(dBm)**	**Limit (dBm)**	**Result**
LTE Band 2 (5MHz)	Lowest	H	V	22.06	33.00	Pass
			H	20.57		
		E1	V	22.09		
			H	19.90		
		E2	V	21.52		
			H	18.69		
	Middle	H	V	22.02	33.00	Pass
			H	19.95		
		E1	V	22.00		
			H	19.74		
		E2	V	22.04		
			H	18.92		
	Highest	H	V	22.16	33.00	Pass
			H	20.08		
		E1	V	22.13		
			H	19.83		
		E2	V	21.85		
			H	19.28		
LTE Band 2 (10MHz)	Lowest	H	V	22.03	33.00	Pass
			H	20.66		
		E1	V	22.00		
			H	20.02		
		E2	V	21.65		
			H	18.83		
	Middle	H	V	22.15	33.00	Pass
			H	20.10		
		E1	V	22.16		
			H	19.92		
		E2	V	22.18		
			H	19.08		
	Highest	H	V	22.18	33.00	Pass
			H	20.21		
		E1	V	22.21		
			H	19.99		
		E2	V	21.96		
			H	19.39		

LTE Band 2(QPSK mode)						
EUT mode	**Channel**	**EUT Pol.**	**Antenna Pol.**	**EIRP (dBm)**	**Limit (dBm)**	**Result**
LTE Band 2 (15MHz)	Lowest	H	V	22.15	33.00	Pass
			H	20.74		
		E1	V	22.18		
			H	20.11		
		E2	V	21.75		
			H	18.94		
	Middle	H	V	22.24	33.00	Pass
			H	20.21		
		E1	V	22.19		
			H	20.05		
		E2	V	22.10		
			H	19.20		
	Highest	H	V	22.08	33.00	Pass
			H	20.31		
		E1	V	22.21		
			H	20.11		
		E2	V	22.04		
			H	19.48		
LTE Band 2 (20MHz)	Lowest	H	V	22.05	33.00	Pass
			H	20.79		
		E1	V	22.04		
			H	20.18		
		E2	V	21.82		
			H	19.02		
	Middle	H	V	22.11	33.00	Pass
			H	20.30		
		E1	V	22.18		
			H	20.15		
		E2	V	22.08		
			H	19.29		
	Highest	H	V	22.15	33.00	Pass
			H	20.39		
		E1	V	22.09		
			H	20.20		
		E2	V	22.10		
			H	19.55		

LTE Band 4(QPSK mode)						
EUT mode	**Channel**	**EUT Pol.**	**Antenna Pol.**	**EIRP(dBm)**	**Limit (dBm)**	**Result**
LTE Band 4 (1.4MHz)	Lowest	H	V	22.09	30.00	Pass
			H	20.71		
		E1	V	22.34		
			H	20.18		
		E2	V	21.82		
			H	19.02		
	Middle	H	V	22.21		
			H	20.29		
		E1	V	22.08		
			H	20.14		
		E2	V	22.18		
			H	19.29		
	Highest	H	V	22.14		
			H	20.38		
		E1	V	22.05		
			H	20.19		
		E2	V	22.09		
			H	19.54		
LTE Band 4 (3MHz)	Lowest	H	V	22.07		
			H	20.53		
		E1	V	22.15		
			H	19.86		
		E2	V	21.47		
			H	18.64		
	Middle	H	V	22.08		
			H	19.90		
		E1	V	22.14		
			H	19.69		
		E2	V	21.99		
			H	18.87		
	Highest	H	V	22.12		
			H	20.03		
		E1	V	22.10		
			H	19.78		
		E2	V	21.82		
			H	19.24		

LTE Band 4(QPSK mode)						
EUT mode	**Channel**	**EUT Pol.**	**Antenna Pol.**	**EIRP(dBm)**	**Limit (dBm)**	**Result**
LTE Band 4 (5MHz)	Lowest	H	V	22.01	30.00	Pass
			H	20.35		
		E1	V	22.05		
			H	19.64		
		E2	V	21.23		
			H	18.38		
	Middle	H	V	22.14		
			H	19.62		
		E1	V	21.84		
			H	19.36		
		E2	V	21.72		
			H	18.58		
	Highest	H	V	22.09		
			H	19.78		
		E1	V	21.83		
			H	19.49		
		E2	V	21.62		
			H	19.02		
LTE Band 4 (10MHz)	Lowest	H	V	22.16		
			H	20.07		
		E1	V	21.74		
			H	19.29		
		E2	V	20.85		
			H	17.97		
	Middle	H	V	21.98		
			H	19.18		
		E1	V	21.36		
			H	18.85		
		E2	V	21.29		
			H	18.11		
	Highest	H	V	21.74		
			H	19.39		
		E1	V	21.41		
			H	19.04		
		E2	V	21.31		
			H	18.68		

LTE Band 4(QPSK mode)						
EUT mode	**Channel**	**EUT Pol.**	**Antenna Pol.**	**EIRP(dBm)**	**Limit (dBm)**	**Result**
LTE Band 4 (15MHz)	Lowest	H	V	22.08	30.00	Pass
			H	19.97		
		E1	V	21.63		
			H	19.18		
		E2	V	20.72		
			H	17.83		
	Middle	H	V	21.86	30.00	Pass
			H	19.03		
		E1	V	21.20		
			H	18.68		
		E2	V	21.14		
			H	17.96		
	Highest	H	V	21.62	30.00	Pass
			H	19.26		
		E1	V	21.27		
			H	18.89		
		E2	V	21.21		
			H	18.56		
LTE Band 4 (20MHz)	Lowest	H	V	22.06	30.00	Pass
			H	20.97		
		E1	V	22.04		
			H	20.40		
		E2	V	22.06		
			H	19.28		
	Middle	H	V	22.14	30.00	Pass
			H	20.57		
		E1	V	22.31		
			H	20.47		
		E2	V	22.65		
			H	19.58		
	Highest	H	V	22.17	30.00	Pass
			H	20.63		
		E1	V	22.15		
			H	20.48		
		E2	V	22.09		
			H	19.76		

LTE Band 12(QPSK mode)						
EUT mode	**Channel**	**EUT Pol.**	**Antenna Pol.**	**ERP(dBm)**	**Limit (dBm)**	**Result**
LTE Band 12 (1.4MHz)	Lowest	H	V	22.23	34.77	Pass
			H	20.48		
		E1	V	22.10		
			H	19.80		
		E2	V	21.40		
			H	18.57		
	Middle	H	V	22.11	34.77	Pass
			H	19.82		
		E1	V	22.06		
			H	19.59		
		E2	V	21.91		
			H	18.78		
	Highest	H	V	22.06	34.77	Pass
			H	19.96		
		E1	V	22.02		
			H	19.70		
		E2	V	21.76		
			H	19.17		
LTE Band 12 (3MHz)	Lowest	H	V	22.24	34.77	Pass
			H	20.50		
		E1	V	22.11		
			H	19.82		
		E2	V	21.42		
			H	18.59		
	Middle	H	V	22.13	34.77	Pass
			H	19.84		
		E1	V	22.08		
			H	19.62		
		E2	V	21.93		
			H	18.81		
	Highest	H	V	22.17	34.77	Pass
			H	19.98		
		E1	V	22.04		
			H	19.72		
		E2	V	21.77		
			H	19.19		

LTE Band 12(QPSK mode)						
EUT mode	**Channel**	**EUT Pol.**	**Antenna Pol.**	**ERP(dBm)**	**Limit (dBm)**	**Result**
LTE Band 12 (5MHz)	Lowest	H	V	22.00	34.77	Pass
			H	20.45		
		E1	V	22.12		
			H	19.76		
		E2	V	21.36		
			H	18.52		
	Middle	H	V	22.17	34.77	Pass
			H	19.76		
		E1	V	22.01		
			H	19.53		
		E2	V	21.86		
			H	18.73		
	Highest	H	V	22.01	34.77	Pass
			H	19.91		
		E1	V	21.97		
			H	19.64		
		E2	V	21.72		
			H	19.13		
LTE Band 12 (10MHz)	Lowest	H	V	22.07	34.77	Pass
			H	20.30		
		E1	V	22.03		
			H	19.58		
		E2	V	21.17		
			H	18.31		
	Middle	H	V	22.18	34.77	Pass
			H	19.54		
		E1	V	21.76		
			H	19.27		
		E2	V	21.64		
			H	18.50		
	Highest	H	V	22.03	34.77	Pass
			H	19.72		
		E1	V	21.76		
			H	19.41		
		E2	V	21.57		
			H	18.96		

Modulation Mode：16QAM Mode

LTE Band 2(16QAM mode)						
EUT mode	**Channel**	**EUT Pol.**	**Antenna Pol.**	**EIRP(dBm)**	**Limit (dBm)**	**Result**
LTE Band 2 (1.4MHz)	Lowest	H	V	21.92	33.00	Pass
			H	19.86		
		E1	V	21.74		
			H	19.15		
		E2	V	20.91		
			H	17.89		
	Middle	H	V	21.89	33.00	Pass
			H	19.10		
		E1	V	21.48		
			H	18.83		
		E2	V	21.37		
			H	18.26		
	Highest	H	V	21.77	33.00	Pass
			H	19.28		
		E1	V	21.49		
			H	19.17		
		E2	V	21.31		
			H	18.54		
LTE Band 2 (3MHz)	Lowest	H	V	21.83	33.00	Pass
			H	20.24		
		E1	V	21.88		
			H	19.36		
		E2	V	20.92		
			H	18.14		
	Middle	H	V	21.85	33.00	Pass
			H	19.36		
		E1	V	21.54		
			H	19.12		
		E2	V	21.62		
			H	18.34		
	Highest	H	V	21.57	33.00	Pass
			H	19.50		
		E1	V	21.74		
			H	19.24		
		E2	V	21.49		
			H	18.74		

LTE Band 2(16QAM mode)						
EUT mode	**Channel**	**EUT Pol.**	**Antenna Pol.**	**EIRP(dBm)**	**Limit (dBm)**	**Result**
LTE Band 2 (5MHz)	Lowest	H	V	21.84	33.00	Pass
			H	20.16		
		E1	V	21.87		
			H	19.50		
		E2	V	21.30		
			H	18.32		
	Middle	H	V	21.80	33.00	Pass
			H	19.55		
		E1	V	21.78		
			H	19.35		
		E2	V	21.82		
			H	18.73		
	Highest	H	V	21.94	33.00	Pass
			H	19.68		
		E1	V	21.91		
			H	19.63		
		E2	V	21.63		
			H	18.89		
LTE Band 2 (10MHz)	Lowest	H	V	21.81	33.00	Pass
			H	20.45		
		E1	V	21.78		
			H	19.62		
		E2	V	21.22		
			H	18.45		
	Middle	H	V	21.93	33.00	Pass
			H	19.70		
		E1	V	21.72		
			H	19.52		
		E2	V	21.96		
			H	18.70		
	Highest	H	V	21.74	33.00	Pass
			H	19.81		
		E1	V	21.99		
			H	19.59		
		E2	V	21.74		
			H	19.00		

LTE Band 2(16QAM mode)						
EUT mode	**Channel**	**EUT Pol.**	**Antenna Pol.**	**EIRP (dBm)**	**Limit (dBm)**	**Result**
LTE Band 2 (15MHz)	Lowest	H	V	21.93	33.00	Pass
			H	20.33		
		E1	V	21.96		
			H	19.71		
		E2	V	21.53		
			H	18.56		
	Middle	H	V	22.02	33.00	Pass
			H	19.81		
		E1	V	21.97		
			H	19.65		
		E2	V	21.88		
			H	19.01		
	Highest	H	V	21.86	33.00	Pass
			H	19.90		
		E1	V	21.99		
			H	19.91		
		E2	V	21.82		
			H	19.09		
LTE Band 2 (20MHz)	Lowest	H	V	21.83	33.00	Pass
			H	20.58		
		E1	V	21.82		
			H	19.78		
		E2	V	21.38		
			H	18.64		
	Middle	H	V	21.89	33.00	Pass
			H	19.89		
		E1	V	21.74		
			H	19.75		
		E2	V	21.86		
			H	18.90		
	Highest	H	V	21.71	33.00	Pass
			H	19.98		
		E1	V	21.87		
			H	19.80		
		E2	V	21.88		
			H	19.16		

LTE Band 4(16QAM mode)						
EUT mode	**Channel**	**EUT Pol.**	**Antenna Pol.**	**EIRP(dBm)**	**Limit (dBm)**	**Result**
LTE Band 4 (1.4MHz)	Lowest	H	V	21.87	30.00	Pass
			H	20.30		
		E1	V	22.12		
			H	19.78		
		E2	V	21.60		
			H	18.64		
	Middle	H	V	21.99		
			H	19.88		
		E1	V	21.86		
			H	19.74		
		E2	V	21.96		
			H	19.10		
	Highest	H	V	21.92		
			H	19.97		
		E1	V	21.83		
			H	19.99		
		E2	V	21.87		
			H	19.15		
LTE Band 4 (3MHz)	Lowest	H	V	21.85		
			H	20.32		
		E1	V	21.93		
			H	19.46		
		E2	V	21.04		
			H	18.27		
	Middle	H	V	21.86		
			H	19.50		
		E1	V	21.70		
			H	19.30		
		E2	V	21.77		
			H	18.49		
	Highest	H	V	21.68		
			H	19.63		
		E1	V	21.88		
			H	19.38		
		E2	V	21.60		
			H	18.86		

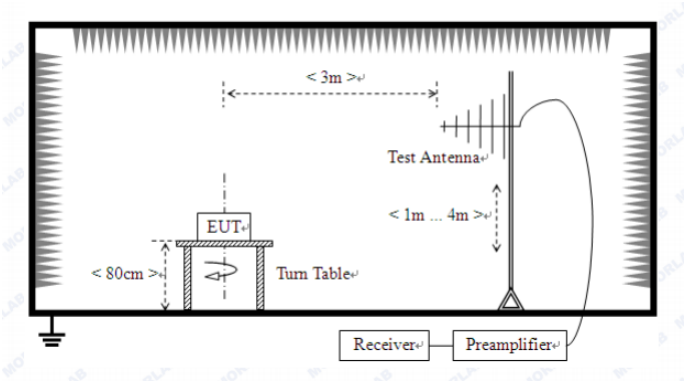
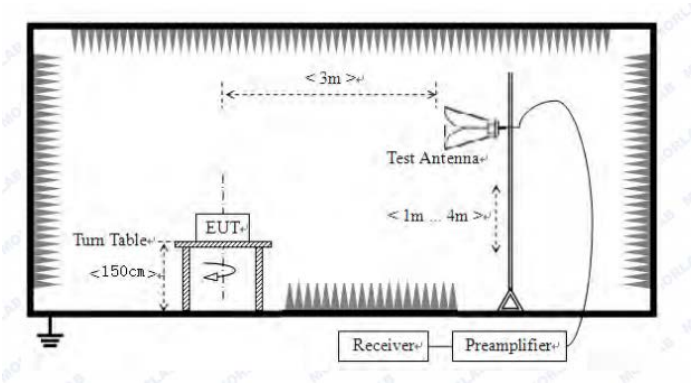
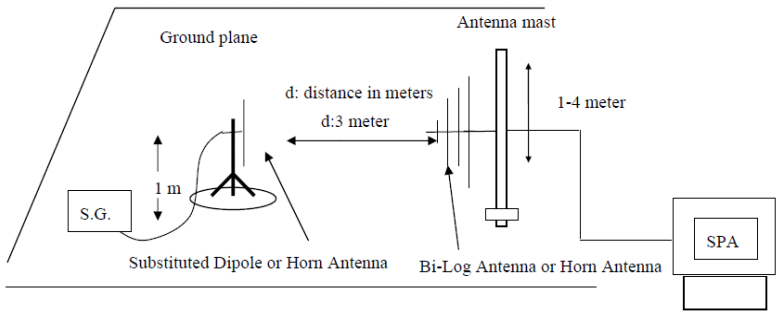
LTE Band 4(16QAM mode)						
EUT mode	**Channel**	**EUT Pol.**	**Antenna Pol.**	**EIRP(dBm)**	**Limit (dBm)**	**Result**
LTE Band 4 (5MHz)	Lowest	H	V	22.02	30.00	Pass
			H	20.15		
		E1	V	21.61		
			H	19.44		
		E2	V	20.81		
			H	18.20		
	Middle	H	V	21.70		
			H	19.42		
		E1	V	21.40		
			H	19.17		
		E2	V	21.29		
			H	18.39		
	Highest	H	V	21.87		
			H	19.58		
		E1	V	21.39		
			H	19.30		
		E2	V	21.40		
			H	18.83		
LTE Band 4 (10MHz)	Lowest	H	V	21.72		
			H	19.87		
		E1	V	21.52		
			H	19.10		
		E2	V	20.43		
			H	17.61		
	Middle	H	V	21.54		
			H	18.99		
		E1	V	20.93		
			H	18.47		
		E2	V	20.86		
			H	17.93		
	Highest	H	V	21.31		
			H	19.00		
		E1	V	20.98		
			H	18.85		
		E2	V	20.88		
			H	18.49		

LTE Band 4(16QAM mode)						
EUT mode	**Channel**	**EUT Pol.**	**Antenna Pol.**	**EIRP(dBm)**	**Limit (dBm)**	**Result**
LTE Band 4 (15MHz)	Lowest	H	V	21.86	30.00	Pass
			H	19.57		
		E1	V	21.41		
			H	18.80		
		E2	V	20.51		
			H	17.47		
	Middle	H	V	21.64	30.00	Pass
			H	18.65		
		E1	V	20.99		
			H	18.31		
		E2	V	20.93		
			H	17.78		
	Highest	H	V	21.40	30.00	Pass
			H	18.87		
		E1	V	21.06		
			H	18.70		
		E2	V	21.00		
			H	18.19		
LTE Band 4 (20MHz)	Lowest	H	V	21.84	30.00	Pass
			H	20.76		
		E1	V	21.82		
			H	19.99		
		E2	V	21.62		
			H	18.89		
	Middle	H	V	21.92	30.00	Pass
			H	20.16		
		E1	V	21.86		
			H	20.06		
		E2	V	22.42		
			H	19.19		
	Highest	H	V	21.73	30.00	Pass
			H	20.22		
		E1	V	21.93		
			H	20.07		
		E2	V	21.87		
			H	19.36		

LTE Band 12(16QAM mode)						
EUT mode	**Channel**	**EUT Pol.**	**Antenna Pol.**	**ERP(dBm)**	**Limit (dBm)**	**Result**
LTE Band 12 (1.4MHz)	Lowest	H	V	22.45	34.77	Pass
			H	20.68		
		E1	V	22.32		
			H	20.00		
		E2	V	21.61		
			H	18.76		
	Middle	H	V	22.33	34.77	Pass
			H	20.02		
		E1	V	22.28		
			H	19.79		
		E2	V	21.69		
			H	18.59		
	Highest	H	V	21.84	34.77	Pass
			H	19.76		
		E1	V	21.80		
			H	19.50		
		E2	V	21.54		
			H	18.98		
LTE Band 12 (3MHz)	Lowest	H	V	22.02	34.77	Pass
			H	20.30		
		E1	V	21.67		
			H	19.42		
		E2	V	20.99		
			H	18.22		
	Middle	H	V	21.69	34.77	Pass
			H	19.44		
		E1	V	21.64		
			H	19.23		
		E2	V	21.49		
			H	18.43		
	Highest	H	V	21.73	34.77	Pass
			H	19.58		
		E1	V	21.60		
			H	19.33		
		E2	V	21.33		
			H	18.81		

LTE Band 12(16QAM mode)						
EUT mode	**Channel**	**EUT Pol.**	**Antenna Pol.**	**ERP(dBm)**	**Limit (dBm)**	**Result**
LTE Band 12 (5MHz)	Lowest	H	V	22.22	34.77	Pass
			H	20.65		
		E1	V	22.34		
			H	19.96		
		E2	V	21.57		
			H	18.71		
	Middle	H	V	22.39	34.77	Pass
			H	19.96		
		E1	V	22.23		
			H	19.73		
		E2	V	21.64		
			H	18.54		
	Highest	H	V	21.79	34.77	Pass
			H	19.71		
		E1	V	21.75		
			H	19.44		
		E2	V	21.50		
			H	18.94		
LTE Band 12 (10MHz)	Lowest	H	V	21.85	34.77	Pass
			H	20.10		
		E1	V	21.59		
			H	19.19		
		E2	V	20.75		
			H	17.94		
	Middle	H	V	21.74	34.77	Pass
			H	19.15		
		E1	V	21.32		
			H	18.88		
		E2	V	21.21		
			H	18.13		
	Highest	H	V	21.59	34.77	Pass
			H	19.33		
		E1	V	21.32		
			H	19.02		
		E2	V	21.14		
			H	18.58		

7.9 Field strength of spurious radiation measurement

Test Requirement:	Part 24.238 (a); FCC Part 27.53(h)/(g)
Test Method:	FCC part2.1053 and ANSI C63.26:2015
Limit:	Band 2/4/12:-13dBm
Test setup:	Below 1GHz  Above 1GHz  Substituted method: 

Test Procedure:	1. The EUT was placed on an non-conductive turntable using a non-conductive support. The radiated emission at the fundamental frequency was measured at 3 m with a test antenna and EMI spectrum analyzer. 2. During the tests, the antenna height and the EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. This maximization process was repeated with the EUT positioned in each of its three orthogonal orientations. 3. The frequency range up to tenth harmonic was investigated for each of three fundamental frequency (low, middle and high channels). Once spurious emission was identified, the power of the emission was determined using the substitution method. 4. The spurious emissions attenuation was calculated as the difference between radiated power at the fundamental frequency and the spurious emissions frequency. ERP / EIRP = S.G. output (dBm) + Antenna Gain(dB/dBi) – Cable Loss (dB)
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 7.1 for details
Test results:	Pass

Measurement Data

Remarks：

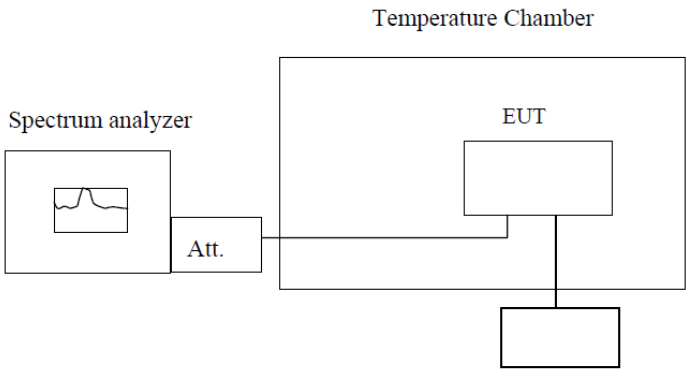
1. The emission behaviour belongs to narrowband spurious emission.
2. Remark”---“means that the emission level is too low to be measured.
3. The emission levels of below 1 GHz are very lower than the limit and not show in test report.

Test mode:	LTE Band 2(1.4MHz)		Test channel:	Lowest
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
3701.40	Vertical	-36.05	-13.00	Pass
5552.10	V	-38.78		
7402.80	V	-41.04		
9253.50	V	-43.20		
11104.20	V	---		
3701.40	Horizontal	-41.28	-13.00	Pass
5552.10	H	-45.14		
7402.80	H	-46.71		
9253.50	H	-49.44		
11104.20	H	---		
Test mode:	**LTE Band 2(1.4MHz)**		**Test channel:**	**Middle**
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
3760.00	Vertical	-37.42	-13.00	Pass
5640.00	V	-39.69		
7520.00	V	-41.58		
9400.00	V	-43.38		
11280.00	V	---		
3760.00	Horizontal	-41.78	-13.00	Pass
5640.00	H	-45.00		
7520.00	H	-46.30		
9400.00	H	-48.58		
11280.00	H	---		
Test mode:	**LTE Band 2(1.4MHz)**		**Test channel:**	**Highest**
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
3818.60	Vertical	-37.74	-13.00	Pass
5727.90	V	-39.76		
7637.20	V	-41.42		
9546.50	V	-43.03		
11455.80	V	---		
3818.60	Horizontal	-41.61	-13.00	Pass
5727.90	H	-44.47		
7637.20	H	-45.62		
9546.50	H	-47.64		
11455.80	H	---		

Test mode:	LTE Band 4(1.4MHz)		Test channel:	Lowest
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
3421.40	Vertical	-37.16	-13.00	Pass
5132.10	V	-39.53		
6842.80	V	-41.50		
8553.50	V	-43.39		
10264.20	V	---		
3421.40	Horizontal	-41.72	-13.00	Pass
5132.10	H	-45.09		
6842.80	H	-46.43		
8553.50	H	-48.80		
10264.20	H	---		
Test mode:	**LTE Band 4(1.4MHz)**		**Test channel:**	**Middle**
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
3465.00	Vertical	-35.02	-13.00	Pass
5197.50	V	-37.47		
6930.00	V	-39.49		
8662.50	V	-41.46		
10395.00	V	---		
3465.00	Horizontal	-39.74	-13.00	Pass
5197.50	H	-43.20		
6930.00	H	-44.60		
8662.50	H	-47.04		
10395.00	H	---		
Test mode:	**LTE Band 4(1.4MHz)**		**Test channel:**	**Highest**
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
3508.60	Vertical	-35.80	-13.00	Pass
5262.90	V	-38.19		
7017.20	V	-40.17		
8771.50	V	-42.07		
10525.80	V	---		
3508.60	Horizontal	-40.39	-13.00	Pass
5262.90	H	-43.78		
7017.20	H	-45.14		
8771.50	H	-47.53		
10525.80	H	---		

Test mode:	LTE Band 12(1.4MHz)		Test channel:	Lowest
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
1399.40	Vertical	-37.50	-13.00	Pass
2099.10	V	-41.24		
2798.80	V	-43.97		
3498.50	V	-41.50		
4198.20	V	---		
1399.40	Horizontal	-40.30	-13.00	Pass
2099.10	H	-42.98		
2798.80	H	-48.39		
3498.50	H	-52.01		
4198.20	H	---		
Test mode:	**LTE Band 12(1.4MHz)**		**Test channel:**	**Middle**
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
1415.00	Vertical	-39.69	-13.00	Pass
2122.50	V	-40.99		
2830.00	V	-44.60		
3537.50	V	-47.06		
4245.00	V	---		
1415.00	Horizontal	-42.13	-13.00	Pass
2122.50	H	-44.02		
2830.00	H	-48.69		
3537.50	H	-51.06		
4245.00	H	---		
Test mode:	**LTE Band 12(1.4MHz)**		**Test channel:**	**Highest**
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
1430.60	Vertical	-37.96	-13.00	Pass
2145.90	V	-40.39		
2861.20	V	-43.02		
3576.50	V	-45.91		
4291.80	V	---		
1430.60	Horizontal	-41.30	-13.00	Pass
2145.90	H	-43.72		
2861.20	H	-45.09		
3576.50	H	-51.28		
4291.80	H	---		

7.10 Frequency stability V.S. Temperature measurement

Test Requirement:	FCC Part2.1055(a)(1)(b)
Test Method:	FCC Part2.1055(a)(1)(b)
Limit:	2.5ppm
Test setup:	 **Note :** Measurement setup for testing on Antenna connector
Test procedure:	1. The equipment under test was connected to an external DC power supply and input rated voltage. 2. RF output was connected to a frequency counter or spectrum analyzer via feed through attenuators. 3. The EUT was placed inside the temperature chamber. 4. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure EUT 25°C operating frequency as reference frequency. 5. Turn EUT off and set the chamber temperature to –20°C. After the temperature stabilized for approximately 30 minutes recorded the frequency. 6. Repeat step measure with 10°C increased per stage until the highest temperature of +50°C reached.
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 7.1 for details
Test results:	Pass

Measurement Data

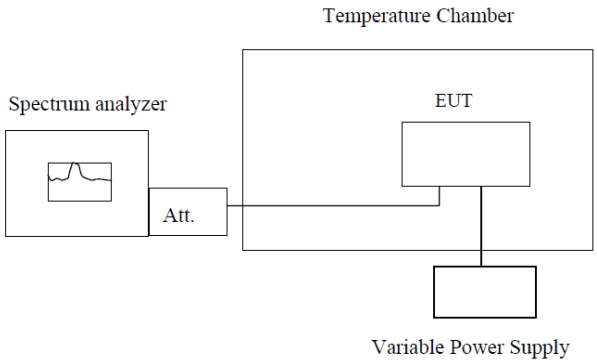
Modulation Mode：QPSK Mode

Reference Frequency: LTE Band 2 Middle channel=18900 channel=1880MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.70	-30	31	0.0166	2.5	Pass
	-20	35	0.0184		
	-10	30	0.0160		
	0	26	0.0136		
	10	29	0.0154		
	20	26	0.0136		
	30	39	0.0207		
	40	36	0.0189		
	50	35	0.0184		
Reference Frequency: LTE Band 4 Middle channel=20175 channel=1732.5MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.70	-30	14	0.0080	2.5	Pass
	-20	16	0.0094		
	-10	13	0.0074		
	0	10	0.0060		
	10	12	0.0067		
	20	9	0.0053		
	30	22	0.0128		
	40	17	0.0101		
	50	16	0.0094		
Reference Frequency: LTE Band 12 Middle channel=23095 channel=707.5MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error			Result
		Hz	ppm		
3.70	-30	40	0.0562	2.5	Pass
	-20	48	0.0684		
	-10	40	0.0562		
	0	33	0.0460		
	10	40	0.0562		
	20	34	0.0481		
	30	58	0.0827		
	40	50	0.0704		
	50	47	0.0664		

Modulation Mode：16QAM Mode

Reference Frequency: LTE Band 2 Middle channel=18900 channel=1880MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.70	-30	38	0.0201	2.5	Pass
	-20	42	0.0224		
	-10	36	0.0193		
	0	31	0.0163		
	10	35	0.0186		
	20	31	0.0163		
	30	48	0.0254		
	40	43	0.0231		
	50	42	0.0224		
Reference Frequency: LTE Band 4 Middle channel=20175 channel=1732.5MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.70	-30	15	0.0087	2.5	Pass
	-20	18	0.0101		
	-10	14	0.0080		
	0	12	0.0066		
	10	13	0.0073		
	20	10	0.0059		
	30	24	0.0136		
	40	19	0.0108		
	50	18	0.0101		
Reference Frequency: LTE Band 12 Middle channel=23095 channel=707.5MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error			Result
		Hz	ppm		
3.70	-30	38	0.0538	2.5	Pass
	-20	46	0.0654		
	-10	38	0.0538		
	0	31	0.0441		
	10	38	0.0538		
	20	33	0.0460		
	30	56	0.0789		
	40	48	0.0673		
	50	45	0.0634		

7.11 Frequency stability V.S. Voltage measurement

Test Requirement:	FCC Part2.1055(d)(1)(2)
Test Method:	FCC Part2.1055(d)(1)(2)
Limit:	2.5ppm
Test setup:	 **Note :** Measurement setup for testing on Antenna connector
Test procedure:	1. Set chamber temperature to 25°C. Use a variable DC power source to power the EUT and set the voltage to rated voltage. 2. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and recorded the frequency. 3. Reduce the input voltage to specified extreme voltage variation (+/- 15%) and endpoint, record the maximum frequency change.
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 7.1 for details
Test results:	Pass

Measurement Data

Modulation Mode：QPSK Mode

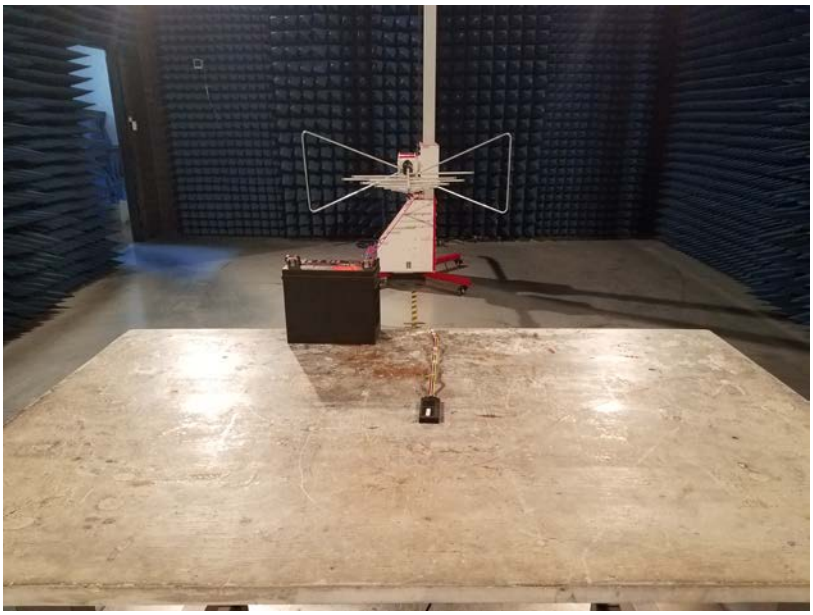
Reference Frequency: LTE Band 2 Middle channel=18900 channel=1880MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.70	4.25	19	0.0100	2.5	Pass
	3.70	21	0.0113		
	3.40	24	0.0125		
Reference Frequency: LTE Band 4 Middle channel=20175 channel=1732.5MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.70	4.25	25	0.0144	2.5	Pass
	3.70	17	0.0097		
	3.40	20	0.0113		
Reference Frequency: LTE Band 12 Middle channel=23095 channel=707.5MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.70	4.25	23	0.0326	2.5	Pass
	3.70	31	0.0434		
	3.40	31	0.0434		

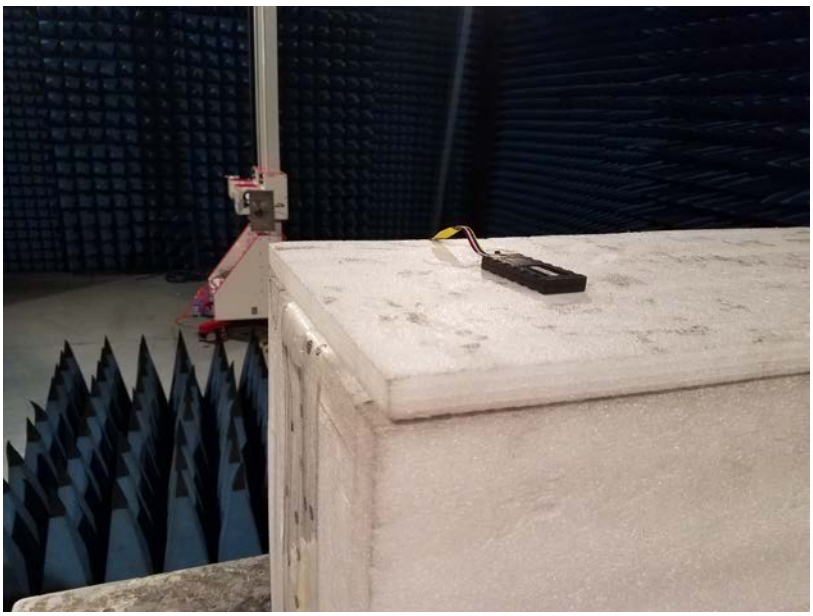
Modulation Mode：16QAM Mode

Reference Frequency: LTE Band 2 Middle channel=18900 channel=1880MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.70	4.25	20	0.0107	2.5	Pass
	3.70	23	0.0120		
	3.40	25	0.0133		
Reference Frequency: LTE Band 4 Middle channel=20175 channel=1732.5MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.70	4.25	26	0.0152	2.5	Pass
	3.70	18	0.0102		
	3.40	21	0.0119		
Reference Frequency: LTE Band 12 Middle channel=23095 channel=707.5MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.70	4.25	23	0.0319	2.5	Pass
	3.70	30	0.0419		
	3.40	30	0.0419		

8 Test Setup Photo

Radiated Emission





9 EUT Constructional Details

Reference to the test report No. : GTS201805000089F01

-----End------