FCC REPORT

Applicant: BTI Wireless

Address of Applicant: 6185 Phyllis Dr. Unit D Cypress California 90630 United States

Equipment Under Test (EUT)

Product Name: mBSC-C RU

Model No.: mBSC0850i-040-RUC11, mBSC0850i -040-RUC12, mBSC0850i-020-RUC11, mBSC0850i -020-RUC12

Trade Mark: BTI WIRELESS™

FCC ID: WBKMBSC850IRUC

Applicable standards: FCC CFR Title 47 Part 2:2016
FCC CFR Title 47 Part 15:2016
FCC CFR Title 47 Part22 Subpart H:2016

Date of sample receipt: April 10, 2016

Date of Test: April 10-25, 2016

Date of report issued: April 25, 2016

Test Result : PASS *

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

Authorized Signature:

Robinson Lo
Laboratory Manager

This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product and does not permit the use of the GTS product certification mark. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.
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2 Version

Version No.	Date	Description
00	*April 25, 2016*	*Original*

Prepared By:	Edward.Pan	***Date:***	*April 25, 2016*
	Project Engineer		
Check By:	hank. yan	***Date:***	*April 25, 2016*
	Reviewer		

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4 Test Summary

Test Item	Test Description	Result
Maximum Permissible exposure(MPE)	§ 1.1307(b)(1), § 2.1091	PASS* (Please refer to MPE Report)
RF Output Power	§ 2.1046; § 22.913(a) (2)	PASS
Modulation Characteristics	§ 2.1047	N/A*
Passband Gain and Bandwidth	§ 2.1049 § 22.917	PASS
Spurious Emissions at Antenna Terminal	§ 2.1051; § 22.917(a)	PASS
Intermodulation	§ 2.1051; § 22.917(a)	PASS
Field Strength of Spurious Radiation	§ 2.1053 § 22.917 (a)	PASS
Out of band emission, Band Edge	§ 22.917 (a)	PASS
Frequency stability vs. temperature Frequency stability vs. voltage	§ 2.1055 § 22.355	PASS
Out-of-Band Rejection	---	PASS
AC Power Line Conducted Emission Test	§ 15.207	PASS

Remark:

N/A*: Not application

5 General Information

5.1 Client Information

Applicant:	BTI Wireless
Address of Applicant:	6185 Phyllis Dr. Unit D Cypress California 90630 United States
Manufacturer:	BTI Wireless(ShenZhen)Co.,Ltd.
Address of Manufacturer:	No. 8 Building, The 3rd Zone, Tangtou Industrial Park Shiyan, Baoan District, Shenzhen, China
Factory:	BTI Wireless(ShenZhen)Co.,Ltd.
Address of Factory:	No. 8 Building, The 3rd Zone, Tangtou Industrial Park Shiyan, Baoan District, Shenzhen, China

5.2 General Description of EUT

Product Name:	mBSC-C RU	
Model No.:	mBSC0850i-040-RUC11, mBSC0850i -040-RUC12, mBSC0850i-020-RUC11, mBSC0850i -020-RUC12	
Power supply:	Input: AC 100-240V AC,50-60Hz , 5A Max Normal test voltage: AC 120V/60Hz	
Operating Temperature:	-20℃ to + 55℃	
Operating Humidity:	up to 95%	
Technical Parameter:		
Frequency Range	Downlink	869MHz~894MHz
	Uplink	824MHz~849MHz
Operating Bandwidth	25MHz	
Multiple Carrier Supported	4	
Channel Spacing(s) / Bandwidth(s)	WCDMA: 5MHz; GSM/EDGE: 200KHz; CDMA/CDMA EV-DO: 1.25MHz; LTE: 1.4M,3M,5M,10M;	
Maximun RF Output Power	Downlink: 46.29dBm(For 40W); 43.32dBm(For 20W); Uplink: 15.43dBm(For 40W); 15.37dBm(For 20W);	
Max Gain	Downlink: 62.42dB; Uplink: 62.41dB	
Type of modulation and Designator	WCDMA(F9W);CDMA/CDMA EV-DO (F9W); GSM/EDGE(GXW); LTE(W7D);	
Antenna Type	External antenna (N female)	
Antenna Gain	Maximum permissible antenna gain is 14dBi.	

5.3 Related Submittal(s) / Grant (s)

Title 47 Part 2	– General Requirements and Information for the Certification of Radio Apparatus
Title 47 Part 15	– General Requirements and Information for the Certification of Radio Apparatus
Title 47 Part 22	– Zone Enhancers for the Land Mobile Service

5.4 Test Methodology

Title 47 Part 2	– General Requirements and Information for the Certification of Radio Apparatus
Title 47 Part 15	– General Requirements and Information for the Certification of Radio Apparatus
Title 47 Part 22	– Zone Enhancers for the Land Mobile Service
KDB	AMPLIFIER, BOOSTER, AND REPEATER REMINDER SHEET
KDB 935210	D01 Signal Booster Definitions v02; D02 Signal Booster Certification v03 D03 Signal Booster Measurements v03 D04 Signal Booster Provider Specific v01r01 D05 Indus Booster Basic Meas v01

5.5 Test Facility

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

● FCC —Registration No.: 600491

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 600491, June 28, 2013.

● Industry Canada (IC)

The 3m Semi-anechoic chamber of China Certification & Inspection Services Co., Ltd. has been Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 9079A-2, June 26, 2013.

5.6 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 Industrrial Zone, Xixiang Road, Baoan District, Shenzhen, Guangdong, China 518102 Tel: 0755-27798480 Fax: 0755-27798960

5.7 Test Instruments list

Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (dd-mm-yy)	Cal.Due date (dd-mm-yy)
1	3m Semi- Anechoic Chamber	ZhongYu Electron	9.2(L)*6.2(W)* 6.4(H)	GTS250	Mar. 27 2015	Mar. 26 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	Jun. 29, 2015	Jun. 28, 2016
4	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	GTS214	Feb. 20 2016	Feb. 19 2017
5	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	9120D-829	GTS208	June 25 2015	June 24 2016
6	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
7	Coaxial Cable	GTS	N/A	GTS213	Mar. 26 2016	Mar. 26 2017
8	Coaxial Cable	GTS	N/A	GTS211	Mar. 26 2016	Mar. 26 2017
9	Coaxial cable	GTS	N/A	GTS210	Mar. 26 2016	Mar. 26 2017
10	Coaxial Cable	GTS	N/A	GTS212	Mar. 26 2016	Mar. 26 2017
11	Amplifier(100KHz-5GHz)	HP	8347A	GTS204	Jun. 29, 2015	Jun. 28, 2016
12	Amplifier(2GHz-20GHz)	HP	8349B	GTS206	Jun. 29, 2015	Jun. 28, 2016
13	Amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	June 25 2015	June 24 2016
14	Shielding Room	ZhongYu Electron	7.0(L)x3.0(W)x3.0(H)	GTS264	Sep. 05 2015	Sep. 04 2017
15	EMI Test Receiver	Rohde & Schwarz	ESCS30	GTS223	Jun. 29, 2015	Jun. 28, 2016
16	10dB Pulse Limita	Rohde & Schwarz	N/A	GTS224	Jun. 29, 2015	Jun. 28, 2016
17	LISN	SCHWARZBECK MESS-ELEKTRONIK	NSLK 8127	GTS226	Jun. 29, 2015	Jun. 28, 2016
18	Temp. Humidity/ Barometer	Oregon Scientific	BA-888	GTS248	May 08 2015	May 07 2017
19	Spectrum Analyzer	Agilent	E4440A	GTS 536	Oct.19 2015	Oct.18 2016
20	Spectrum Analyzer	Agilent	E4445A	MY41000047	Sept. 09 2015	Sept. 08 2017
21	Splitter	Agilent	11636B	GTS237	May 08 2015	May 07 2017
22	Signal Generator	Rohde & Schwarz	SML03	GTS236	May 08 2015	May 07 2017
23	Signal Generator	AEROFLEX	IFR3414	341300/019	Sept. 09 2015	Sept. 08 2016
24	Power Meter	Giga-tronics	8541C	1831177	Sept. 09 2015	Sept. 08 2016
25	Power Sensor	Giga-tronics	80601A	1831785	Sept. 09 2015	Sept. 08 2016
26	Power Attenuator	BTI	30dB/250W	040706090	Sept. 09 2015	Sept. 08 2016
27	Power Attenuator	BTI	20dB	040706089	Sept. 09 2015	Sept. 08 2016
28	Power Attenuator	BTI	10dB	040706088	Sept. 09 2015	Sept. 08 2016
29	Signal Generator	Agilent	E4438C	MY45093111	Oct.19 2015	Oct.18 2016
30	Signal Generator	Agilent	4432B	GB40051373	May 08 2015	May 07 2016

6 TEST CONFIGURATION AND CONDITIONS

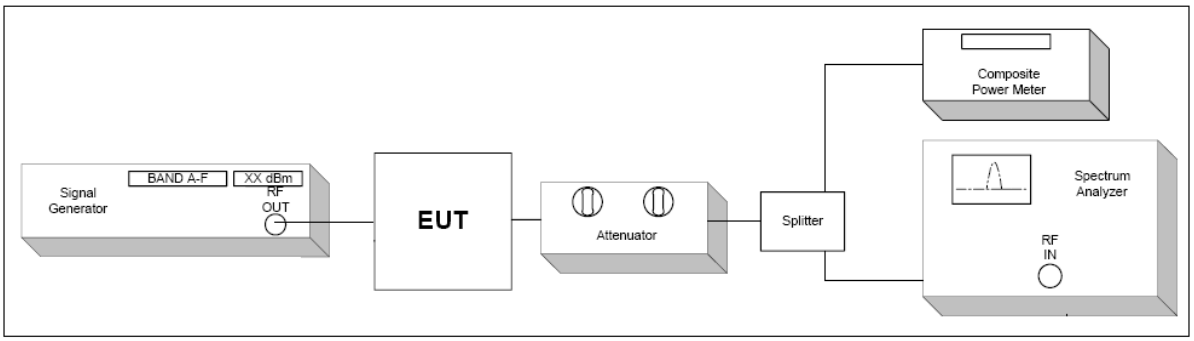
6.1 EUT Configuration

This mBSC0850i-040-RUCM11、mBSC0850i -040-RUCM12、mBSC0850i -020-RUCM11、mBSC0850i -020-RUCM12 are the Remote Unit on BTI CM system. This remote unit supports 850MHz band with the air standard GSM, EDGE, WCDMA, CDMA, CDMA EV-DO, and LTE. The unit consists of Duplexer, PA and CPU board. This product is designed to operate in an outdoor or indoor environment. The output power of the RUM at Antenna interface port is average 46.29dBm (for 40W) and 43.32dBm (for 20W) for Downlink path with Convection Cooling.

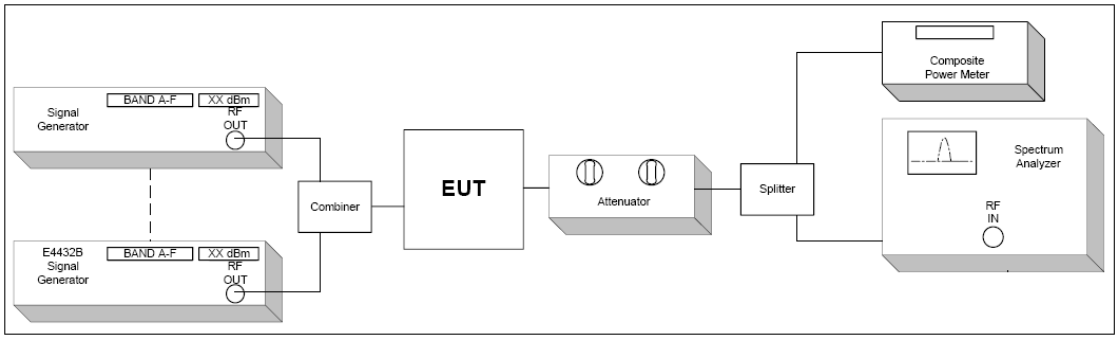
For details, refer to technical document and the user manual.

6.2 Configuration of Tested System

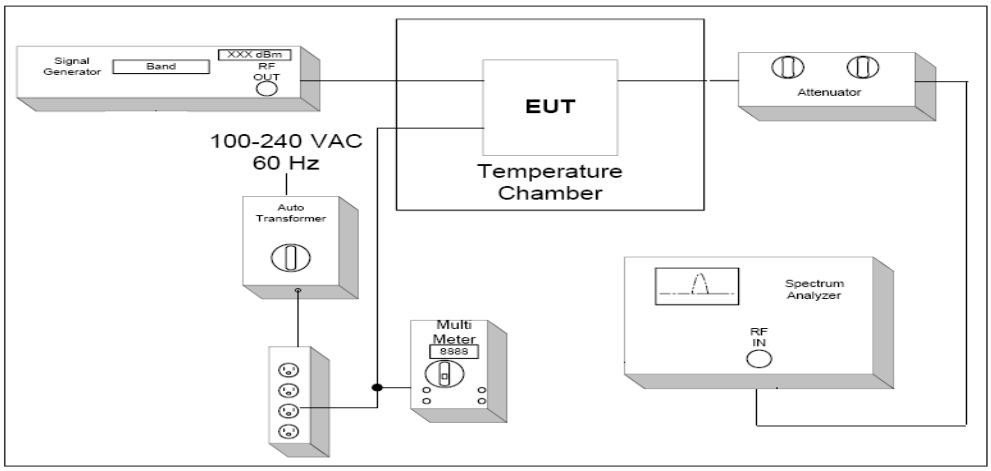
(A) RF Output Power, Occupied Bandwidth, Spurious Emissions at Antenna Terminal, Band Edge, Test Set-UP



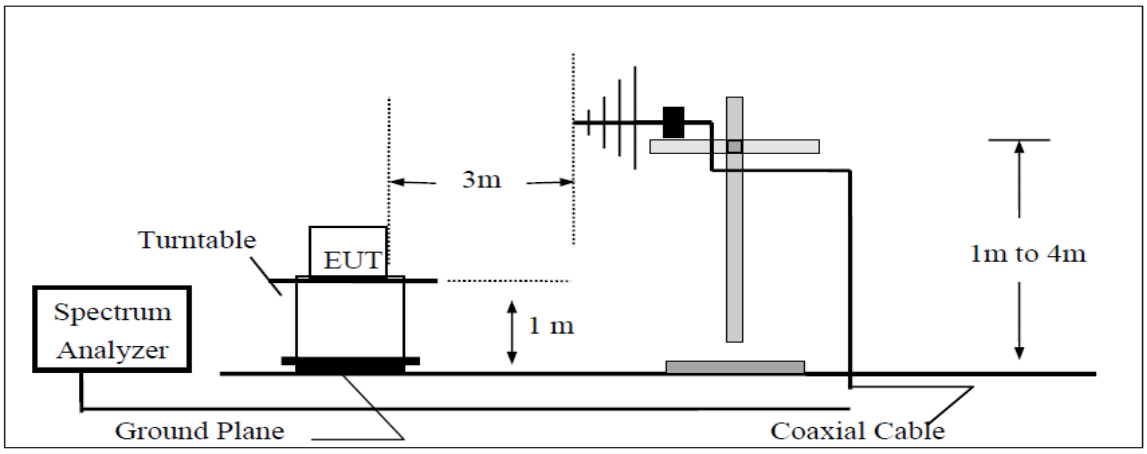
(B) Intermodulation Test Set-UP



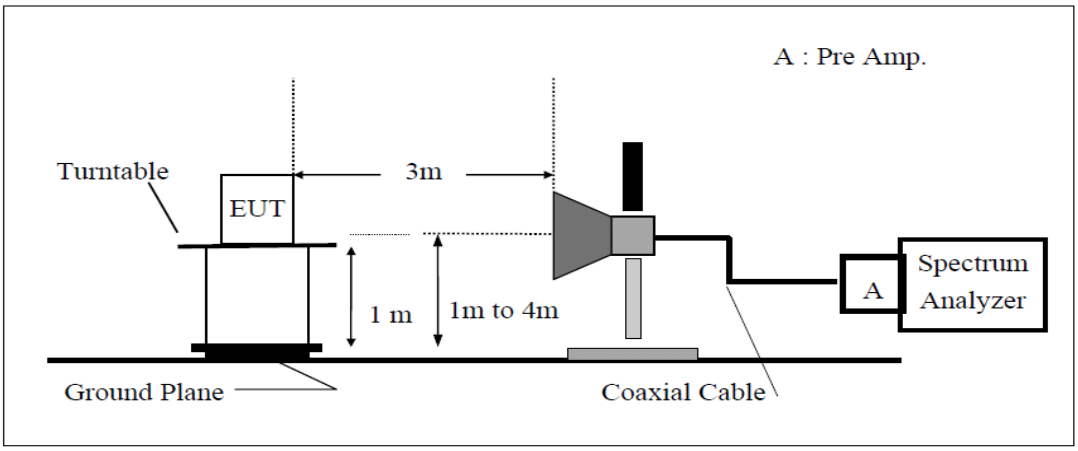
(C)Frequency stability Test Set-UP



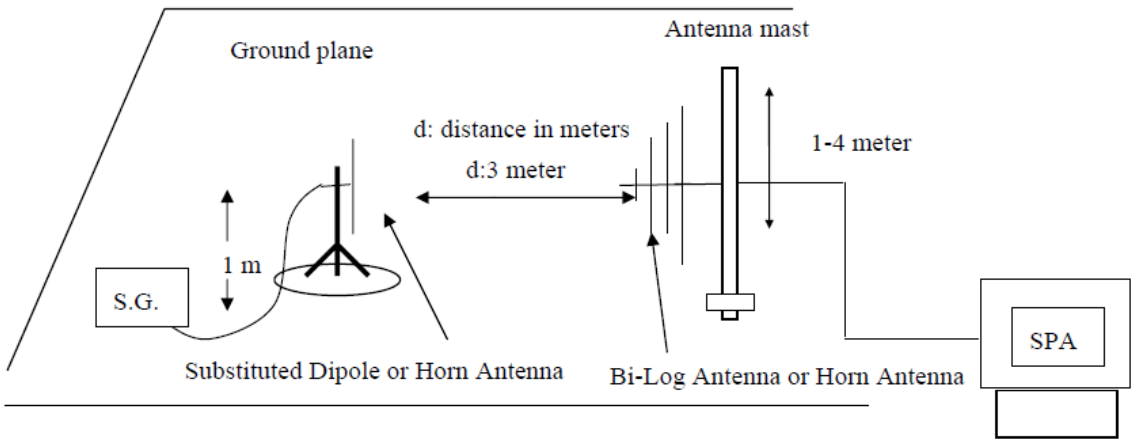
(D) Radiated Emission Test Set-Up, Frequency below 1000MHz



(E) Radiated Emission Test Set-UP Frequency over 1 GHz



(F) Substituted Method Test Set-UP



6.3 Test Environments

Condition	Minimum value	Maximum value
Barometric pressure	86 kPa	106 kPa
Temperature	15°C	30°C
Relative Humidity	20 %	75 %
Power supply range	±5% of rated voltages	
Normal Test Condition	(1).Temperature: +15 °C to +30 °C; (2). voltage is 120V AC.	
Extreme Test Conditions:	(1). Temperatures: -20°C to +55°C. (2). Voltages: 102V AC to 138V AC.	

6.4 Test signal

1: Test signal WCDMA

Signal waveform according to Test Model 1 of standard specification 3GPP TS25.141. Signal modulated with a combination of PCCPCH, SCCPCH and Dedicated Physical Channels specified as test model 1 64 DPCH.

2: Test signal CDMA

Signal waveform according to 3GPP2 C.S0010-C

3: Test signal CDMA EV-DO

Signal waveform according to 3GPP2 C.S0032-B

4: Test signal GSM and EDGE

Signal waveform according to clause 6.4 of standard specification 3GPP TS 151 010-1(2014-11)

5: Test signal LTE:

Signal waveform according to Test Model 1.1, E-TM1.1, clause 6.1.1.1-1, table 6.1.1.1-1 of standard specification 3GPP TS 36.141 V9.3.0 (2010-03).

6: Test signal CW

N/A

6.5 Test frequency selection

Downlink:

Operating Mode(TX)	Channels No. / Multi- Carriers	Channels frequency (MHz)		
		Low Ch.	Mid Ch.	High Ch.
WCDMA	Single Carrier	871.40	881.60	891.60
CDMA/CDMA EV-DO	Single Carrier	870.25	881.60	892.75
	Two Carriers	871.50	881.60	891.50
	Three Carrier	872.75	881.60	890.25
	Four Carrier	874.00	881.60	889.00
GSM/EDGE	Single Carrier	869.20	881.60	848.80
	Two Carriers	869.40	881.60	848.60
	Three Carrier	869.60	881.60	848.40
	Four Carrier	869.80	881.60	848.20
LTE 1.4MHz Bandwidth	Single Carrier	869.70	881.60	893.30
LTE 3MHz Bandwidth	Single Carrier	870.50	881.60	892.50
LTE 5MHz Bandwidth	Single Carrier	871.50	881.60	891.50
LTE 10MHz Bandwidth	Single Carrier	874.00	881.60	889.00

Uplink:

Operating Mode(TX)	Channels No. / Multi- Carriers	Channels frequency (MHz)		
		Low Ch.	Mid Ch.	High Ch.
WCDMA	Single Carrier	826.40	836.60	846.60
CDMA/CDMA EV-DO	Single Carrier	825.25	836.60	847.75
	Two Carriers	826.50	836.60	846.50
	Three Carrier	827.75	836.60	845.25
	Four Carrier	829.00	836.60	843.00
GSM/EDGE	Single Carrier	824.20	836.60	848.80
	Two Carriers	824.40	836.60	848.60
	Three Carrier	824.60	836.60	848.40
	Four Carrier	824.80	836.60	848.20
LTE 1.4MHz Bandwidth	Single Carrier	824.70	836.60	848.30
LTE 3MHz Bandwidth	Single Carrier	825.50	836.60	847.50
LTE 5MHz Bandwidth	Single Carrier	826.50	836.60	846.50
LTE 10MHz Bandwidth	Single Carrier	829.00	836.60	844.00

6.6 DESCRIPTION OF TEST MODES

Test mode	Detail description of the test mode
Downlink	Downlink (Low channel; middle channel; high channel)
Uplink	Uplink (Low channel; middle channel; high channel)
Multi-carrier	Single Carrier; two carrier; three carrier; four carrier
Multi-bandwidth	WCDMA: 5MHz, CDMA/CDMA EV-DO: 1.25MHz GSM/EDGE: 200KHz, LTE:1.4M, 3M, 5M, 10M.
Modulation type	WCDMA/CDMA/CDMA EV-DO/GSM/EDGE/LTE.

Remark:

1: The EUT was powered by 120VAC.

2: The EUT was configured for maximum gain and maximum ouput power. The input power was the maximum declared by the manufacturer.This is to ensure that the equipment is operating in the linear output range.

3: Signal generator was used to provide the input signals to the EUT. Tests were performed with WCDMA/CDMA/CDMA EV-DO/GSM/EDGE/LTE signal input and multi-carrier signal mode input.

4: Pre-test all test modes as above, only the worst case and typical mode is list in report it.

7 RF POWER OUTPUT MEASUREMENT

7.1 Standard Applicable

According to FCC § 2.1046 and § 22.913(a)(2).

7.2 Test setup

Please refer the section §6.2 Configuration of Tested System.

7.3 Measurement Procedure

1. The output from the EUT t signal shall be increased, antenna connector was connected to the power meter.
2. The level of RF input until the maximum output power per channel, declared by client, is reached.
3. The RF output power was measured at low, middle and high channel with WCDMA/CDMA/CDMA EV-DO/GSM/EDGE/LTE signal.

7.4 Test Result

40W
Downlink:

Test mode	Carrier Conf.	Channel	Average Power (dBm)	Average Power (W)	RF Output Power(W/MHz)	Result
WCDMA	Single Carrier	Low	46.17	41.40	8.28	Compliant
		Middle	46.29	42.56	8.51	Compliant
		High	46.24	42.07	8.41	Compliant
CDMA	Single Carrier	Low	46.19	41.59	33.66	Compliant
		Middle	46.27	42.36	33.27	Compliant
		High	46.23	41.98	33.89	Compliant
	Two Carrier	Low	46.16	41.30	16.52	Compliant
		Middle	46.24	42.07	16.83	Compliant
		High	46.21	41.78	16.71	Compliant
	Three Carrier	Low	46.12	40.93	10.91	Compliant
		Middle	46.23	41.98	11.19	Compliant
		High	46.19	41.59	11.09	Compliant
	Four Carrier	Low	46.08	40.55	8.11	Compliant
		Middle	46.19	41.59	8.32	Compliant
		High	46.15	41.21	8.24	Compliant
CDMA EV-DO	Single Carrier	Low	46.17	41.40	33.66	Compliant
		Middle	46.26	42.27	33.12	Compliant
		High	46.23	41.98	33.81	Compliant
	Two Carrier	Low	46.18	41.50	16.60	Compliant
		Middle	46.24	42.07	16.83	Compliant
		High	46.19	41.59	16.64	Compliant
	Three Carrier	Low	46.13	41.02	10.94	Compliant
		Middle	46.19	41.59	11.09	Compliant
		High	46.15	41.21	10.99	Compliant
	Four Carrier	Low	46.10	40.74	8.15	Compliant
		Middle	46.18	41.50	8.30	Compliant
		High	46.08	40.55	8.11	Compliant

Test mode	Carrier Conf.	Channel	Average Power (dBm)	Average Power (W)	RF Output Power(W/MHz)	Result
GSM	Single Carrier	Low	46.17	41.40	207.00	Compliant
		Middle	46.25	42.17	210.85	Compliant
		High	46.21	41.78	208.92	Compliant
	Two Carrier	Low	46.15	41.21	103.02	Compliant
		Middle	46.23	41.98	104.94	Compliant
		High	46.18	41.50	103.74	Compliant
	Three Carrier	Low	46.13	41.02	68.37	Compliant
		Middle	46.16	41.30	68.84	Compliant
		High	46.14	41.11	68.52	Compliant
	Four Carrier	Low	46.09	40.64	50.81	Compliant
		Middle	46.13	41.02	51.28	Compliant
		High	46.05	40.27	50.34	Compliant
EDGE	Single Carrier	Low	46.21	41.78	208.92	Compliant
		Middle	46.26	42.27	211.33	Compliant
		High	46.23	41.98	209.88	Compliant
	Two Carrier	Low	46.19	41.59	103.98	Compliant
		Middle	46.24	42.07	105.18	Compliant
		High	46.18	41.50	103.74	Compliant
	Three Carrier	Low	46.15	41.21	68.68	Compliant
		Middle	46.21	41.78	69.64	Compliant
		High	46.13	41.02	68.37	Compliant
	Four Carrier	Low	46.11	40.83	51.04	Compliant
		Middle	46.17	41.40	51.75	Compliant
		High	46.08	40.55	50.69	Compliant
LTE 1.4MHz Bandwidth	Single Carrier	Low	46.18	41.50	29.64	Compliant
		Middle	46.24	42.07	30.05	Compliant
		High	46.15	41.21	29.44	Compliant
LTE 3MHz Bandwidth	Single Carrier	Low	46.20	41.69	13.90	Compliant
		Middle	46.27	42.36	14.12	Compliant
		High	46.18	41.50	13.83	Compliant
LTE 5MHz Bandwidth	Single Carrier	Low	46.16	41.30	8.26	Compliant
		Middle	46.23	41.98	8.40	Compliant
		High	46.09	40.64	8.13	Compliant
LTE 10MHz Bandwidth	Single Carrier	Low	46.15	41.21	4.12	Compliant
		Middle	46.24	42.07	4.21	Compliant
		High	46.10	40.74	4.07	Compliant

Uplink:

Test mode	Carrier Conf.	Channel	Average Power (dBm)	Average Power (W)	RF Output Power(W/MHz)	Result
WCDMA	Single Carrier	Low	15.24	0.033	0.007	Compliant
		Middle	15.43	0.035	0.007	Compliant
		High	15.31	0.034	0.007	Compliant
CDMA	Single Carrier	Low	15.23	0.033	0.027	Compliant
		Middle	15.38	0.035	0.027	Compliant
		High	15.28	0.034	0.028	Compliant
	Two Carrier	Low	15.20	0.033	0.013	Compliant
		Middle	15.35	0.034	0.014	Compliant
		High	15.26	0.034	0.013	Compliant
	Three Carrier	Low	15.18	0.033	0.009	Compliant
		Middle	15.33	0.034	0.009	Compliant
		High	15.23	0.033	0.009	Compliant
	Four Carrier	Low	15.15	0.033	0.007	Compliant
		Middle	15.30	0.034	0.007	Compliant
		High	15.21	0.033	0.007	Compliant
CDMA EV-DO	Single Carrier	Low	15.22	0.033	0.027	Compliant
		Middle	15.37	0.034	0.027	Compliant
		High	15.26	0.034	0.028	Compliant
	Two Carrier	Low	15.19	0.033	0.013	Compliant
		Middle	15.34	0.034	0.014	Compliant
		High	15.23	0.033	0.013	Compliant
	Three Carrier	Low	15.16	0.033	0.009	Compliant
		Middle	15.30	0.034	0.009	Compliant
		High	15.20	0.033	0.009	Compliant
	Four Carrier	Low	15.15	0.033	0.007	Compliant
		Middle	15.27	0.034	0.007	Compliant
		High	15.16	0.033	0.007	Compliant

Test mode	Carrier Conf.	Channel	Average Power (dBm)	Average Power (W)	RF Output Power(W/MHz)	Result
GSM	Single Carrier	Low	15.21	0.033	0.166	Compliant
		Middle	15.35	0.034	0.171	Compliant
		High	15.20	0.033	0.166	Compliant
	Two Carrier	Low	15.19	0.033	0.083	Compliant
		Middle	15.32	0.034	0.085	Compliant
		High	15.19	0.033	0.083	Compliant
	Three Carrier	Low	15.16	0.033	0.055	Compliant
		Middle	15.29	0.034	0.056	Compliant
		High	15.18	0.033	0.055	Compliant
	Four Carrier	Low	15.13	0.033	0.041	Compliant
		Middle	15.27	0.034	0.042	Compliant
		High	15.16	0.033	0.166	Compliant
EDGE	Single Carrier	Low	15.23	0.033	0.167	Compliant
		Middle	15.33	0.034	0.171	Compliant
		High	15.20	0.033	0.166	Compliant
	Two Carrier	Low	15.21	0.033	0.083	Compliant
		Middle	15.30	0.034	0.085	Compliant
		High	15.19	0.033	0.083	Compliant
	Three Carrier	Low	15.18	0.033	0.055	Compliant
		Middle	15.28	0.034	0.056	Compliant
		High	15.16	0.033	0.055	Compliant
	Four Carrier	Low	15.13	0.033	0.041	Compliant
		Middle	15.26	0.034	0.042	Compliant
		High	15.11	0.032	0.041	Compliant
LTE 1.4MHz Bandwidth	Single Carrier	Low	15.21	0.033	0.024	Compliant
		Middle	15.33	0.034	0.024	Compliant
		High	15.19	0.033	0.024	Compliant
LTE 3MHz Bandwidth	Single Carrier	Low	15.23	0.033	0.011	Compliant
		Middle	15.34	0.034	0.011	Compliant
		High	15.20	0.033	0.011	Compliant
LTE 5MHz Bandwidth	Single Carrier	Low	15.21	0.033	0.007	Compliant
		Middle	15.34	0.034	0.007	Compliant
		High	15.18	0.033	0.007	Compliant
LTE 10MHz Bandwidth	Single Carrier	Low	15.16	0.033	0.003	Compliant
		Middle	15.33	0.034	0.003	Compliant
		High	15.16	0.033	0.003	Compliant

20W
Downlink:

Test mode	Carrier Conf.	Channel	Average Power (dBm)	Average Power (W)	RF Output Power(W/MHz)	Result
WCDMA	Single Carrier	Low	43.21	20.94	4.19	Compliant
		Middle	43.32	21.48	4.30	Compliant
		High	43.18	20.80	4.16	Compliant
CDMA	Single Carrier	Low	43.18	20.80	16.64	Compliant
		Middle	43.31	21.43	16.64	Compliant
		High	43.17	20.75	17.14	Compliant
	Two Carrier	Low	43.16	20.70	8.28	Compliant
		Middle	43.29	21.33	8.53	Compliant
		High	43.15	20.65	8.26	Compliant
	Three Carrier	Low	43.13	20.56	5.48	Compliant
		Middle	43.26	21.18	5.65	Compliant
		High	43.11	20.46	5.46	Compliant
	Four Carrier	Low	43.08	20.32	4.06	Compliant
		Middle	43.20	20.89	4.18	Compliant
		High	43.10	20.42	4.08	Compliant
CDMA EV-DO	Single Carrier	Low	43.18	21.28	16.64	Compliant
		Middle	43.28	20.75	17.03	Compliant
		High	43.17	20.65	8.26	Compliant
	Two Carrier	Low	43.15	21.13	8.45	Compliant
		Middle	43.25	20.65	8.26	Compliant
		High	43.15	20.51	5.47	Compliant
	Three Carrier	Low	43.12	20.94	5.58	Compliant
		Middle	43.21	20.56	5.48	Compliant
		High	43.13	20.46	4.09	Compliant
	Four Carrier	Low	43.11	20.84	4.17	Compliant
		Middle	43.19	20.37	4.07	Compliant
		High	43.09	21.28	16.64	Compliant

Test mode	Carrier Conf.	Channel	Average Power (dBm)	Average Power (W)	RF Output Power(W/MHz)	Result
GSM	Single Carrier	Low	43.19	20.84	104.22	Compliant
		Middle	43.24	21.09	105.43	Compliant
		High	43.16	20.70	103.51	Compliant
	Two Carrier	Low	43.17	20.75	51.87	Compliant
		Middle	43.21	20.94	52.35	Compliant
		High	43.12	20.51	51.28	Compliant
	Three Carrier	Low	43.13	20.56	34.26	Compliant
		Middle	43.18	20.80	34.66	Compliant
		High	43.11	20.46	34.11	Compliant
	Four Carrier	Low	43.10	20.42	25.52	Compliant
		Middle	43.14	20.61	25.76	Compliant
		High	43.08	20.32	25.40	Compliant
EDGE	Single Carrier	Low	43.15	20.65	103.27	Compliant
		Middle	43.21	20.94	104.71	Compliant
		High	43.13	20.56	102.79	Compliant
	Two Carrier	Low	43.12	20.51	51.28	Compliant
		Middle	43.19	20.84	52.11	Compliant
		High	43.11	20.46	51.16	Compliant
	Three Carrier	Low	43.10	20.42	34.03	Compliant
		Middle	43.17	20.75	34.58	Compliant
		High	43.09	20.37	33.95	Compliant
	Four Carrier	Low	43.07	20.28	25.35	Compliant
		Middle	43.16	20.70	25.88	Compliant
		High	43.07	20.28	25.35	Compliant
LTE 1.4MHz Bandwidth	Single Carrier	Low	43.18	20.80	14.85	Compliant
		Middle	43.27	21.23	15.17	Compliant
		High	43.11	20.46	14.62	Compliant
LTE 3MHz Bandwidth	Single Carrier	Low	43.16	20.70	6.90	Compliant
		Middle	43.24	21.09	7.03	Compliant
		High	43.13	20.56	6.85	Compliant
LTE 5MHz Bandwidth	Single Carrier	Low	43.15	20.65	4.13	Compliant
		Middle	43.21	20.94	4.19	Compliant
		High	43.10	20.42	4.08	Compliant
LTE 10MHz Bandwidth	Single Carrier	Low	43.13	20.56	2.06	Compliant
		Middle	43.24	21.09	2.11	Compliant
		High	43.12	20.51	2.05	Compliant

Uplink:

Test mode	Carrier Conf.	Channel	Average Power (dBm)	Average Power (W)	RF Output Power(W/MHz)	Result
WCDMA	Single Carrier	Low	15.31	0.034	0.007	Compliant
		Middle	15.37	0.034	0.007	Compliant
		High	15.33	0.034	0.007	Compliant
CDMA	Single Carrier	Low	15.28	0.034	0.027	Compliant
		Middle	15.36	0.034	0.027	Compliant
		High	15.30	0.034	0.027	Compliant
	Two Carrier	Low	15.26	0.034	0.013	Compliant
		Middle	15.33	0.034	0.014	Compliant
		High	15.24	0.033	0.013	Compliant
	Three Carrier	Low	15.24	0.033	0.009	Compliant
		Middle	15.32	0.034	0.009	Compliant
		High	15.21	0.033	0.009	Compliant
	Four Carrier	Low	15.19	0.033	0.007	Compliant
		Middle	15.29	0.034	0.007	Compliant
		High	15.18	0.033	0.007	Compliant
CDMA EV-DO	Single Carrier	Low	15.26	0.034	0.027	Compliant
		Middle	15.36	0.034	0.027	Compliant
		High	15.24	0.033	0.027	Compliant
	Two Carrier	Low	15.21	0.033	0.013	Compliant
		Middle	15.35	0.034	0.014	Compliant
		High	15.23	0.033	0.013	Compliant
	Three Carrier	Low	15.17	0.033	0.009	Compliant
		Middle	15.33	0.034	0.009	Compliant
		High	15.20	0.033	0.009	Compliant
	Four Carrier	Low	15.13	0.033	0.007	Compliant
		Middle	15.30	0.034	0.007	Compliant
		High	15.15	0.033	0.007	Compliant

Test mode	Carrier Conf.	Channel	Average Power (dBm)	Average Power (W)	RF Output Power(W/MHz)	Result
GSM	Single Carrier	Low	15.21	0.033	0.166	Compliant
		Middle	15.34	0.034	0.171	Compliant
		High	15.24	0.033	0.167	Compliant
	Two Carrier	Low	15.18	0.033	0.082	Compliant
		Middle	15.32	0.034	0.085	Compliant
		High	15.21	0.033	0.083	Compliant
	Three Carrier	Low	15.16	0.033	0.055	Compliant
		Middle	15.28	0.034	0.056	Compliant
		High	15.18	0.033	0.055	Compliant
	Four Carrier	Low	15.13	0.033	0.041	Compliant
		Middle	15.26	0.034	0.042	Compliant
		High	15.16	0.033	0.041	Compliant
EDGE	Single Carrier	Low	15.24	0.033	0.167	Compliant
		Middle	15.34	0.034	0.171	Compliant
		High	15.20	0.033	0.166	Compliant
	Two Carrier	Low	15.21	0.033	0.083	Compliant
		Middle	15.31	0.034	0.085	Compliant
		High	15.17	0.033	0.082	Compliant
	Three Carrier	Low	15.15	0.033	0.055	Compliant
		Middle	15.28	0.034	0.056	Compliant
		High	15.13	0.033	0.054	Compliant
	Four Carrier	Low	15.12	0.033	0.041	Compliant
		Middle	15.23	0.033	0.042	Compliant
		High	15.10	0.032	0.040	Compliant
LTE 1.4MHz Bandwidth	Single Carrier	Low	15.22	0.033	0.024	Compliant
		Middle	15.34	0.034	0.024	Compliant
		High	15.24	0.033	0.024	Compliant
LTE 3MHz Bandwidth	Single Carrier	Low	15.20	0.033	0.011	Compliant
		Middle	15.29	0.034	0.011	Compliant
		High	15.25	0.033	0.011	Compliant
LTE 5MHz Bandwidth	Single Carrier	Low	15.18	0.033	0.007	Compliant
		Middle	15.27	0.034	0.007	Compliant
		High	15.21	0.033	0.007	Compliant
LTE 10MHz Bandwidth	Single Carrier	Low	15.16	0.033	0.003	Compliant
		Middle	15.24	0.033	0.003	Compliant
		High	15.19	0.033	0.003	Compliant

7.5 Peak to Average Ratio

Downlink:

Test mode	Carrier Conf.	Peak to Average Ratio (dB)			Limit (dB)	Result
		Low Ch.	Middle Ch.	High Ch.		
WCDMA	Single Carrier	5.36	5.08	5.41	13	Compliant
CDMA	Single Carrier	6.39	6.71	6.39	13	Compliant
	Two Carrier	6.42	6.51	6.37	13	Compliant
	Three Carrier	6.12	6.48	6.51	13	Compliant
	Four Carrier	6.28	6.42	6.57	13	Compliant
CDMA EV-DO	Single Carrier	7.14	6.76	6.78	13	Compliant
	Two Carrier	6.91	6.78	6.87	13	Compliant
	Three Carrier	6.63	6.57	6.76	13	Compliant
	Four Carrier	6.73	6.92	6.80	13	Compliant
GSM	Single Carrier	0.65	0.72	0.65	13	Compliant
	Two Carrier	0.47	0.67	0.60	13	Compliant
	Three Carrier	0.71	0.78	0.69	13	Compliant
	Four Carrier	0.63	0.69	0.78	13	Compliant
EDGE	Single Carrier	0.78	0.75	0.62	13	Compliant
	Two Carrier	0.70	0.76	0.64	13	Compliant
	Three Carrier	0.73	0.77	0.62	13	Compliant
	Four Carrier	0.61	0.78	0.69	13	Compliant
LTE 1.4MHz Bandwidth	Single Carrier	7.83	8.37	8.28	13	Compliant
LTE 3MHz Bandwidth	Single Carrier	8.30	8.29	8.01	13	Compliant
LTE 5MHz Bandwidth	Single Carrier	8.15	8.58	8.43	13	Compliant
LTE 10MHz Bandwidth	Single Carrier	8.22	8.29	8.34	13	Compliant

Uplink:

Test mode	Carrier Conf.	Peak to Average Ratio (dB)			Limit (dB)	Result
		Low Ch.	Middle Ch.	High Ch.		
WCDMA	Single Carrier	5.38	5.47	5.23	13	Compliant
CDMA	Single Carrier	6.51	6.29	6.45	13	Compliant
	Two Carrier	6.59	6.62	6.44	13	Compliant
	Three Carrier	6.58	6.61	6.52	13	Compliant
	Four Carrier	6.51	6.48	6.70	13	Compliant
CDMA EV-DO	Single Carrier	7.53	7.66	7.57	13	Compliant
	Two Carrier	7.42	7.65	7.47	13	Compliant
	Three Carrier	7.73	7.69	7.72	13	Compliant
	Four Carrier	7.57	7.61	7.67	13	Compliant
GSM	Single Carrier	0.62	0.73	0.67	13	Compliant
	Two Carrier	0.61	0.55	0.67	13	Compliant
	Three Carrier	0.63	0.71	0.74	13	Compliant
	Four Carrier	0.68	0.64	0.60	13	Compliant
EDGE	Single Carrier	0.65	0.62	0.57	13	Compliant
	Two Carrier	0.67	0.61	0.66	13	Compliant
	Three Carrier	0.65	0.72	0.63	13	Compliant
	Four Carrier	0.72	0.64	0.67	13	Compliant
LTE 1.4MHz Bandwidth	Single Carrier	8.27	8.26	8.17	13	Compliant
LTE 3MHz Bandwidth	Single Carrier	8.41	8.35	8.40	13	Compliant
LTE 5MHz Bandwidth	Single Carrier	8.49	8.38	8.24	13	Compliant
LTE 10MHz Bandwidth	Single Carrier	8.35	8.48	8.11	13	Compliant

8 MEASURING THE EUT AGC THRESHOLD

8.1 Standard Applicable

Please refer the section §3.2 8 MEASURING THE EUT AGC THRESHOLD of D05 Indus Booster Basic Meas v01

8.2 Test setup

Please refer the section §6.2 Configuration of Tested System.

8.3 Test Procedure

Please refer the section §3.2 8 MEASURING THE EUT AGC THRESHOLD of D05 Indus Booster Basic Meas v01

8.4 Test Result

Downlink:

Test mode	Carrier Conf.	AGC threshold level （dB）			Result
		Low Ch.	Middle Ch.	High Ch.	
WCDMA	Single Carrier	48.27	48.53	48.39	Compliant
CDMA	Single Carrier	48.24	48.51	48.38	Compliant
	Two Carrier	48.21	48.48	48.34	Compliant
	Three Carrier	48.18	48.37	48.31	Compliant
	Four Carrier	48.15	48.33	48.27	Compliant
CDMA EV-DO	Single Carrier	48.21	48.45	48.37	Compliant
	Two Carrier	48.19	48.43	48.35	Compliant
	Three Carrier	48.17	48.40	48.32	Compliant
	Four Carrier	48.13	48.38	48.31	Compliant
GSM	Single Carrier	48.25	48.46	48.34	Compliant
	Two Carrier	48.24	48.45	48.31	Compliant
	Three Carrier	48.21	48.42	48.27	Compliant
	Four Carrier	48.19	48.38	48.21	Compliant
EDGE	Single Carrier	48.22	48.43	48.28	Compliant
	Two Carrier	48.21	48.39	48.25	Compliant
	Three Carrier	48.18	48.32	48.17	Compliant
	Four Carrier	48.12	48.29	48.15	Compliant
LTE 1.4MHz Bandwidth	Single Carrier	48.23	48.50	48.35	Compliant
LTE 3MHz Bandwidth	Single Carrier	48.17	48.46	48.32	Compliant
LTE 5MHz Bandwidth	Single Carrier	48.13	48.42	48.29	Compliant
LTE 10MHz Bandwidth	Single Carrier	48.15	48.43	48.32	Compliant

Uplink:

Test mode	Carrier Conf.	AGC threshold level （dB）			Result
		Low Ch.	Middle Ch.	High Ch.	
WCDMA	Single Carrier	17.86	17.97	17.73	Compliant
CDMA	Single Carrier	17.82	17.89	17.71	Compliant
	Two Carrier	17.76	17.85	17.69	Compliant
	Three Carrier	17.73	17.82	17.65	Compliant
	Four Carrier	17.70	17.80	17.64	Compliant
CDMA EV-DO	Single Carrier	17.81	17.87	17.68	Compliant
	Two Carrier	17.75	17.83	17.67	Compliant
	Three Carrier	17.72	17.80	17.65	Compliant
	Four Carrier	17.68	17.75	17.62	Compliant
GSM	Single Carrier	17.78	17.82	17.66	Compliant
	Two Carrier	17.72	17.78	17.64	Compliant
	Three Carrier	17.68	17.75	17.64	Compliant
	Four Carrier	17.64	17.72	17.61	Compliant
EDGE	Single Carrier	17.81	17.83	17.72	Compliant
	Two Carrier	17.76	17.80	17.69	Compliant
	Three Carrier	17.73	17.75	17.65	Compliant
	Four Carrier	17.70	17.72	17.63	Compliant
LTE 1.4MHz Bandwidth	Single Carrier	17.77	17.81	17.73	Compliant
LTE 3MHz Bandwidth	Single Carrier	17.73	17.75	17.68	Compliant
LTE 5MHz Bandwidth	Single Carrier	17.72	17.76	17.69	Compliant
LTE 10MHz Bandwidth	Single Carrier	17.65	17.73	17.70	Compliant

9 PASSBAND GAIN AND 99% OCCUPIED BANDWIDTH

9.1 Standard Applicable

According to FCC § 2.1049 and § 22.917

9.2 Test setup

Please refer the section §6.2 Configuration of Tested System.

9.3 Test Procedure

1. The EUT RF output port was connected to spectrum analyzer.
2. The level of RF input signal shall be increased, until the maximum output power per channel, declared by client, is reached.
3. The spectrum analyzer was setup to measure the Occupied Bandwidth (defined as the 99% Power Bandwidth).
4. The Occupied Bandwidth was measured at the input and output ports of the EUT at low, middle and high channel of each type of modulation and each type of carrier signal.

Spectrum analyzer settings:

Detector: RMS.

WCDMA: RBW= 100 kHz VBW≥RBW Sweep: Auto

CDMA/ CDMA EV-DO: RBW= 30 kHz VBW=100kHz Sweep: Auto

GSM/EDGE: RBW= 1 kHz VBW=3kHz Sweep: Auto

9.4 Test Result

Pass band Gain

Downlink:

Test mode	Carrier Conf.	Channel	Pass band Gain (dB)	Nominal Gain (dB)	Result
WCDMA	Single Carrier	Low	62.27	62±0.5	Compliant
		Middle	62.42		Compliant
		High	62.34		Compliant
CDMA	Single Carrier	Low	62.24		Compliant
		Middle	62.39		Compliant
		High	62.29		Compliant
	Two Carrier	Low	62.21		Compliant
		Middle	62.37		Compliant
		High	62.21		Compliant
	Three Carrier	Low	62.18		Compliant
		Middle	62.34		Compliant
		High	62.14		Compliant
	Four Carrier	Low	62.14		Compliant
		Middle	62.29		Compliant
		High	62.11		Compliant
CDMA EV-DO	Single Carrier	Low	62.25		Compliant
		Middle	62.38		Compliant
		High	62.29		Compliant
	Two Carrier	Low	62.19		Compliant
		Middle	62.35		Compliant
		High	62.24		Compliant
	Three Carrier	Low	62.17		Compliant
		Middle	62.32		Compliant
		High	62.21		Compliant
	Four Carrier	Low	62.13		Compliant
		Middle	62.28		Compliant
		High	62.17		Compliant

Test mode	Carrier Conf.	Channel	Pass band Gain (dB)	Nominal Gain (dB)	Result
GSM	Single Carrier	Low	62.31	62±0.5	Compliant
		Middle	62.40		Compliant
		High	62.35		Compliant
	Two Carrier	Low	62.24		Compliant
		Middle	62.37		Compliant
		High	62.23		Compliant
	Three Carrier	Low	62.21		Compliant
		Middle	62.34		Compliant
		High	62.20		Compliant
	Four Carrier	Low	62.16		Compliant
		Middle	62.32		Compliant
		High	62.18		Compliant
EDGE	Single Carrier	Low	62.29		Compliant
		Middle	62.37		Compliant
		High	62.24		Compliant
	Two Carrier	Low	62.21		Compliant
		Middle	62.35		Compliant
		High	62.21		Compliant
	Three Carrier	Low	62.16		Compliant
		Middle	62.29		Compliant
		High	62.20		Compliant
	Four Carrier	Low	62.13		Compliant
		Middle	62.26		Compliant
		High	62.13		Compliant
LTE 1.4MHz Bandwidth	Single Carrier	Low	62.24		Compliant
		Middle	62.37		Compliant
		High	62.29		Compliant
LTE 3MHz Bandwidth	Single Carrier	Low	62.26		Compliant
		Middle	62.39		Compliant
		High	62.31		Compliant
LTE 5MHz Bandwidth	Single Carrier	Low	62.23		Compliant
		Middle	62.36		Compliant
		High	62.27		Compliant
LTE 10MHz Bandwidth	Single Carrier	Low	62.24		Compliant
		Middle	62.35		Compliant
		High	62.25		Compliant

Uplink:

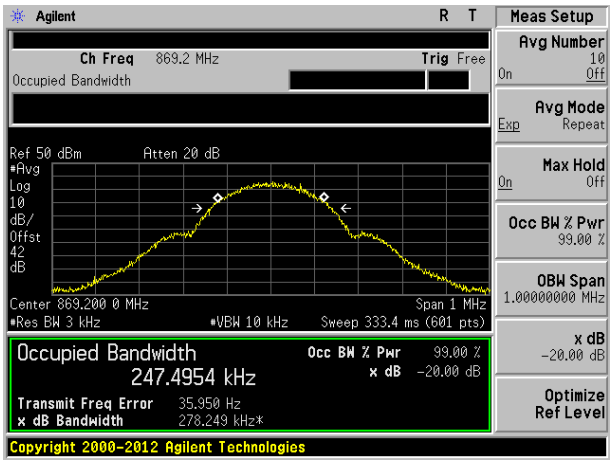
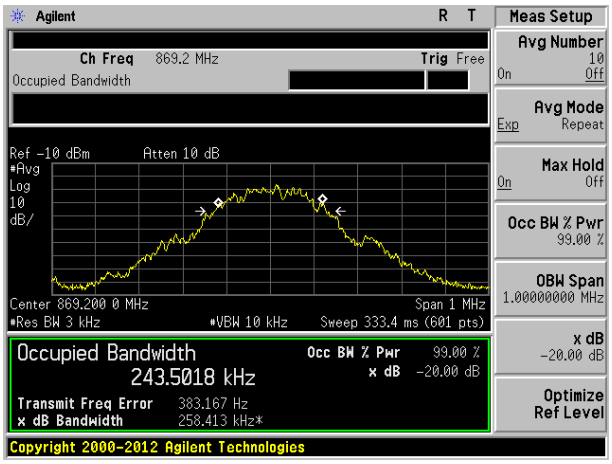
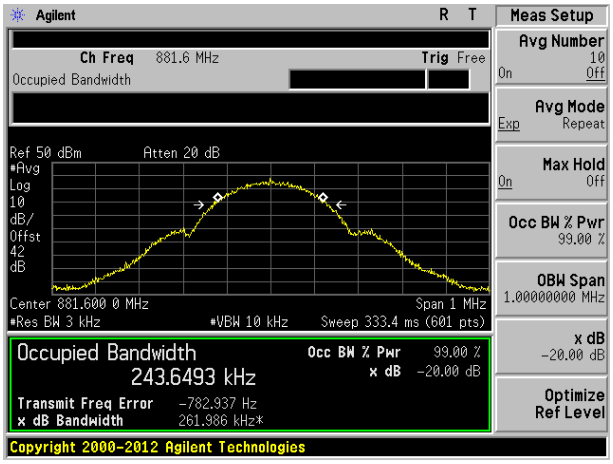
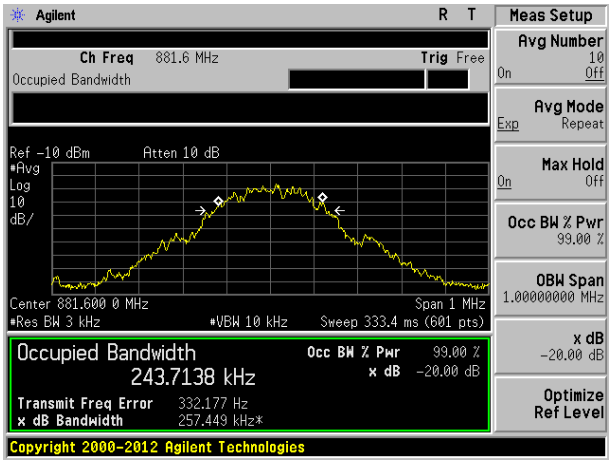
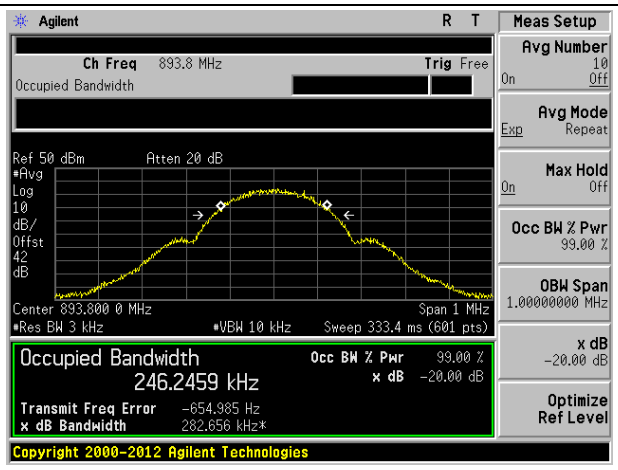
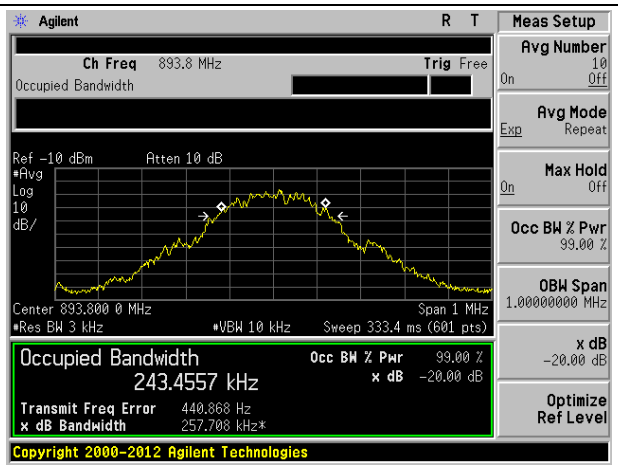
Test mode	Carrier Conf.	Channel	Pass band Gain (dB)	Nominal Gain (dB)	Result
WCDMA	Single Carrier	Low	62.30	62±0.5	Compliant
		Middle	62.41		Compliant
		High	62.27		Compliant
CDMA	Single Carrier	Low	62.26		Compliant
		Middle	62.39		Compliant
		High	62.26		Compliant
	Two Carrier	Low	62.29		Compliant
		Middle	62.36		Compliant
		High	62.25		Compliant
	Three Carrier	Low	62.21		Compliant
		Middle	62.34		Compliant
		High	62.13		Compliant
	Four Carrier	Low	62.18		Compliant
		Middle	62.33		Compliant
		High	62.20		Compliant
CDMA EV-DO	Single Carrier	Low	62.26		Compliant
		Middle	62.39		Compliant
		High	62.23		Compliant
	Two Carrier	Low	62.24		Compliant
		Middle	62.38		Compliant
		High	62.20		Compliant
	Three Carrier	Low	62.19		Compliant
		Middle	62.33		Compliant
		High	62.13		Compliant
	Four Carrier	Low	62.16		Compliant
		Middle	62.28		Compliant
		High	62.10		Compliant

Test mode	Carrier Conf.	Channel	Pass band Gain (dB)	Nominal Gain (dB)	Result
GSM	Single Carrier	Low	62.21	62±0.5	Compliant
		Middle	62.35		Compliant
		High	62.20		Compliant
	Two Carrier	Low	62.16		Compliant
		Middle	62.32		Compliant
		High	62.13		Compliant
	Three Carrier	Low	62.15		Compliant
		Middle	62.30		Compliant
		High	62.11		Compliant
	Four Carrier	Low	62.14		Compliant
		Middle	62.25		Compliant
		High	62.07		Compliant
EDGE	Single Carrier	Low	62.24		Compliant
		Middle	62.34		Compliant
		High	62.19		Compliant
	Two Carrier	Low	62.18		Compliant
		Middle	62.30		Compliant
		High	62.16		Compliant
	Three Carrier	Low	62.15		Compliant
		Middle	62.27		Compliant
		High	62.13		Compliant
	Four Carrier	Low	62.10		Compliant
		Middle	62.24		Compliant
		High	62.07		Compliant
LTE 1.4MHz Bandwidth	Single Carrier	Low	62.21		Compliant
		Middle	62.37		Compliant
		High	62.28		Compliant
LTE 3MHz Bandwidth	Single Carrier	Low	62.23		Compliant
		Middle	62.38		Compliant
		High	62.19		Compliant
LTE 5MHz Bandwidth	Single Carrier	Low	62.21		Compliant
		Middle	62.34		Compliant
		High	62.22		Compliant
LTE 10MHz Bandwidth	Single Carrier	Low	62.20		Compliant
		Middle	62.36		Compliant
		High	62.23		Compliant

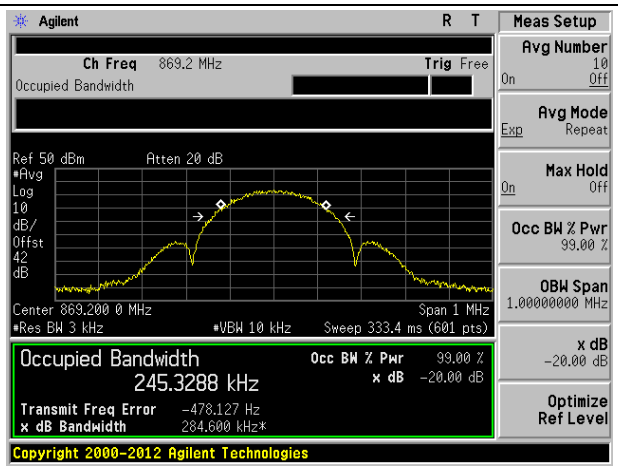
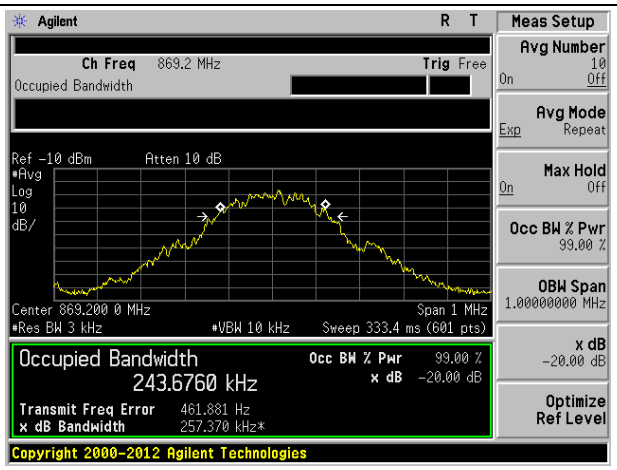
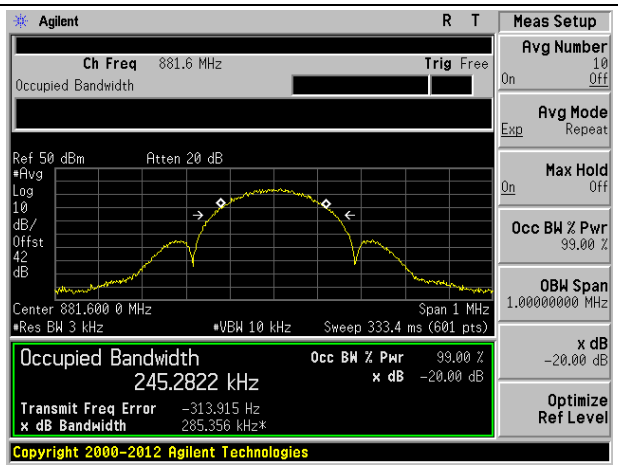
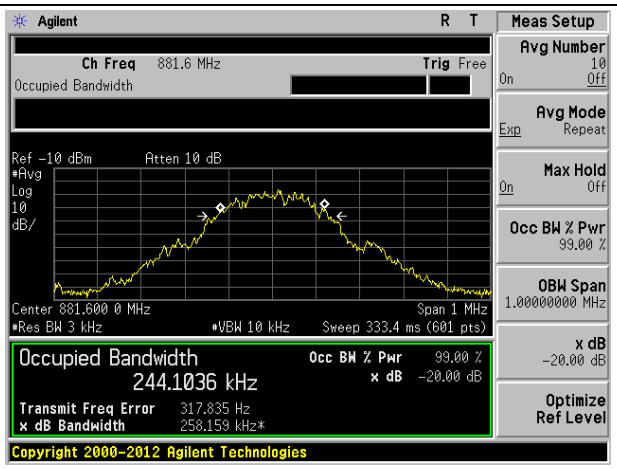
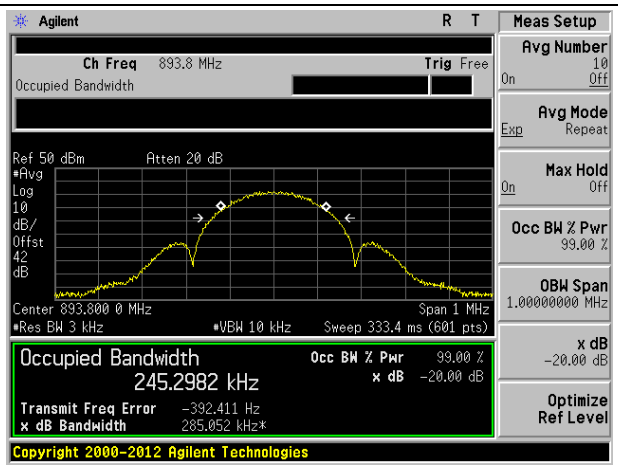
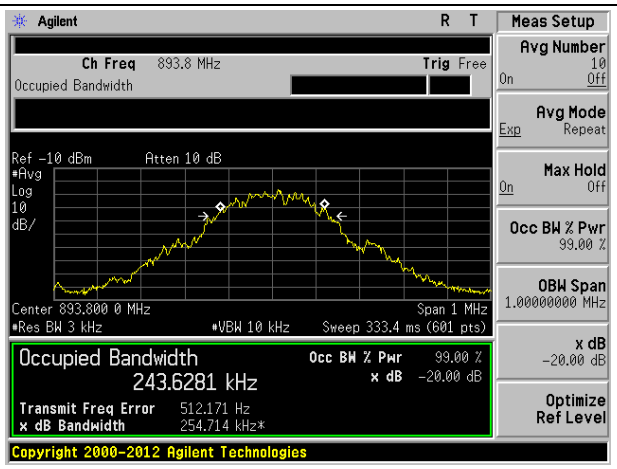
Input/output Bandwidth Comparison

Downlink:

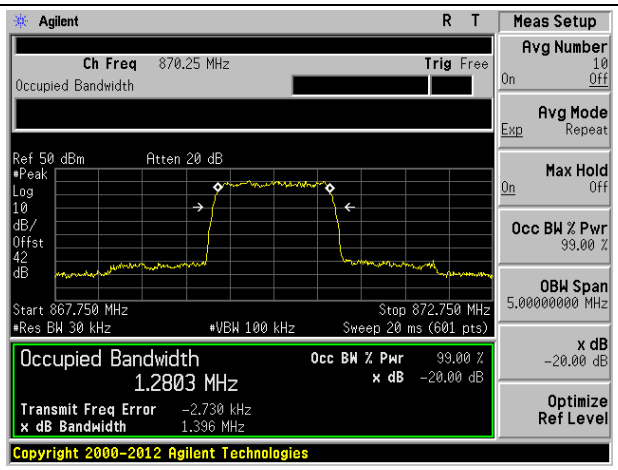
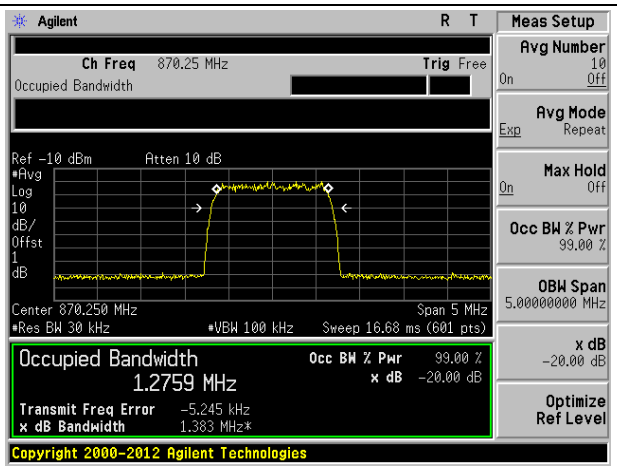
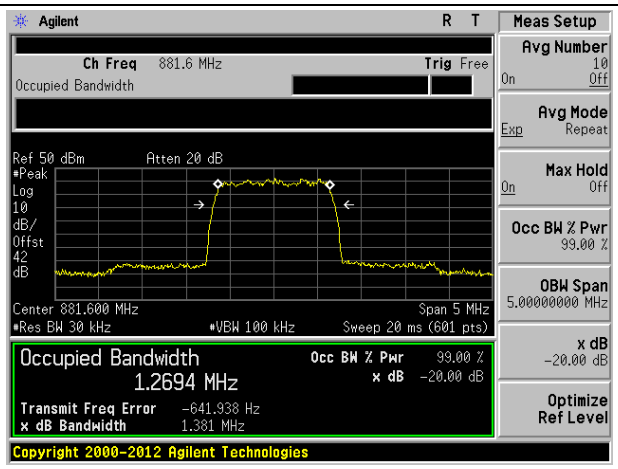
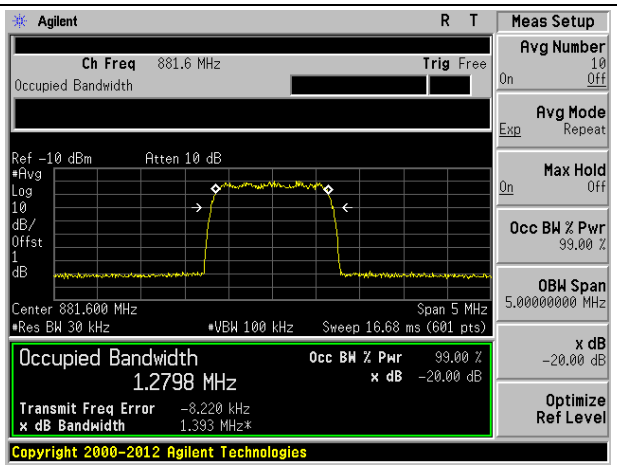
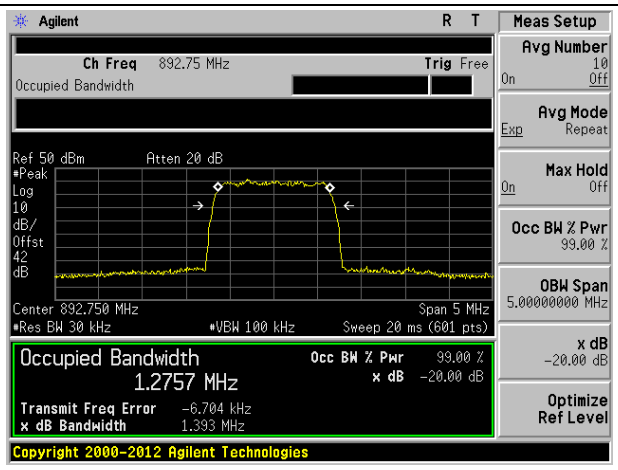
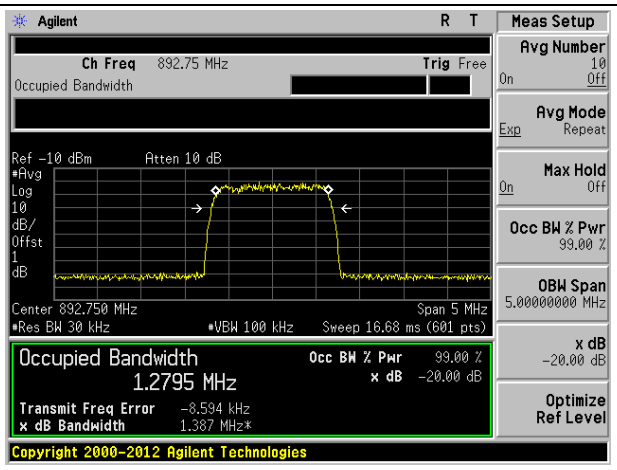
Input/output Bandwidth Comparison for GSM

Output(Lowest channel)	Input(Lowest channel)
	
Output(Middle channel)	Input(Middle channel)
	
Output(Highest channel)	Input(Highest channel)
	

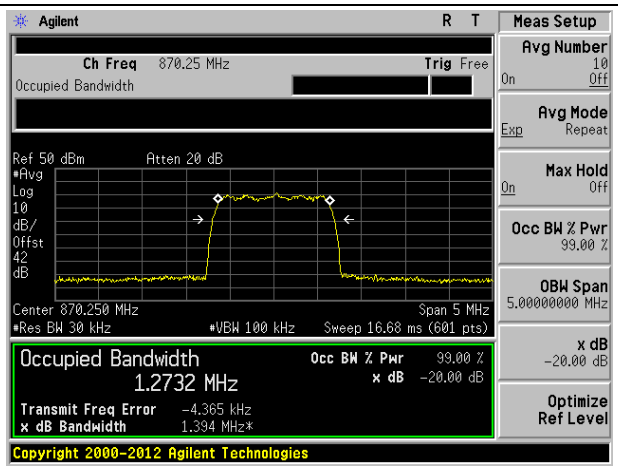
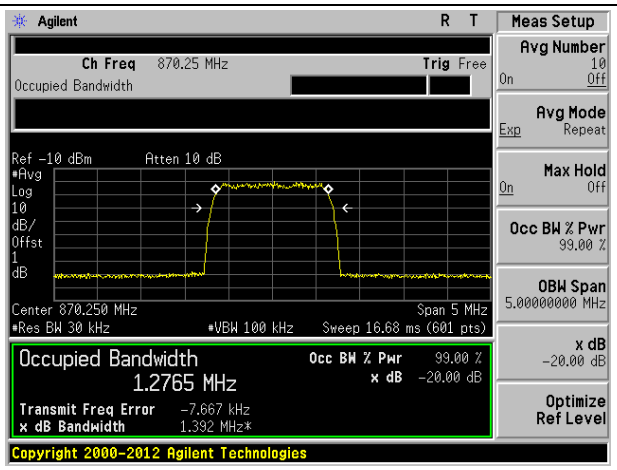
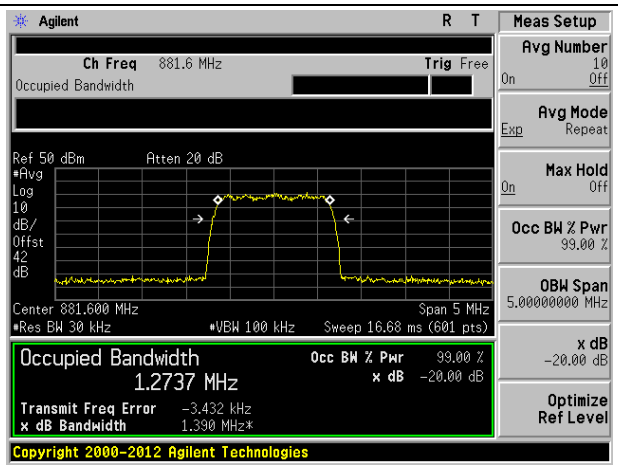
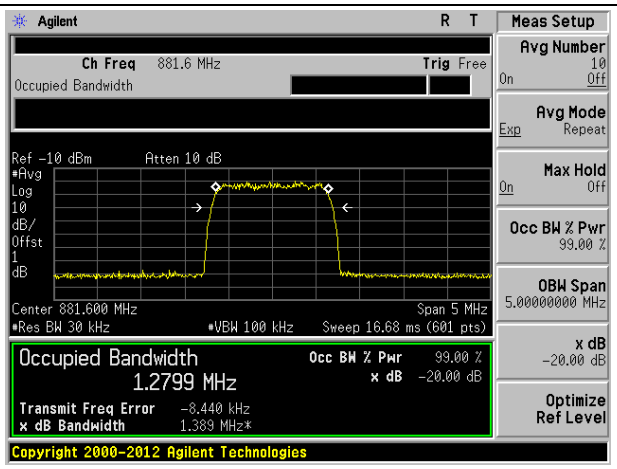
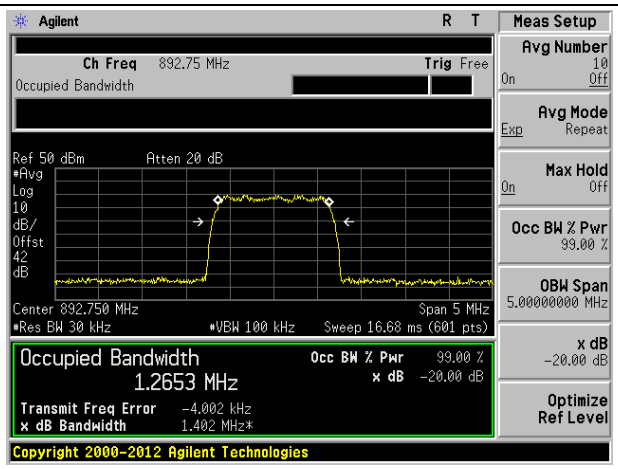
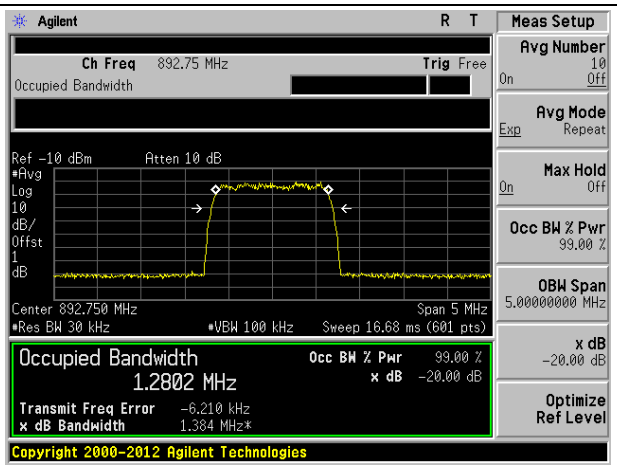
Input/output Bandwidth Comparison for EDGE

Output(Lowest channel)	Input(Lowest channel)
	
Output(Middle channel)	Input(Middle channel)
	
Output(Highest channel)	Input(Highest channel)
	

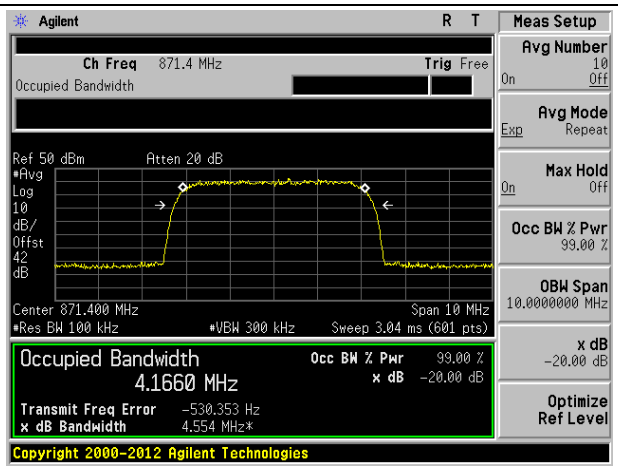
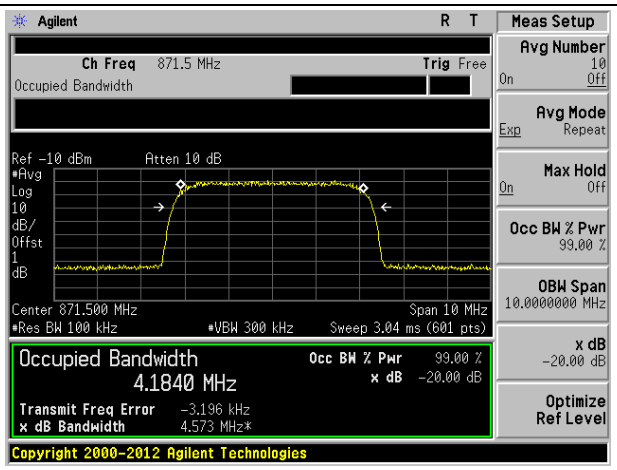
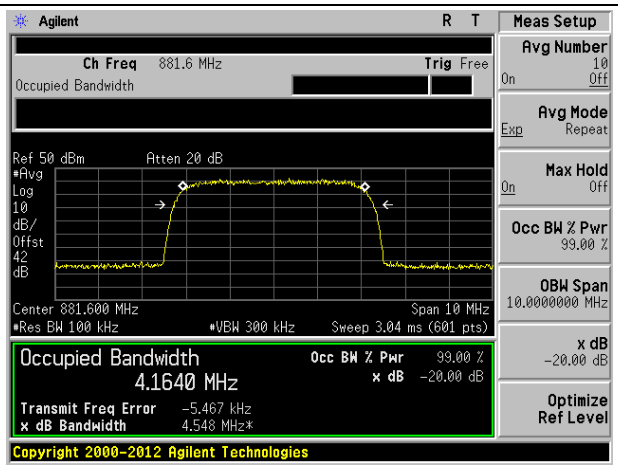
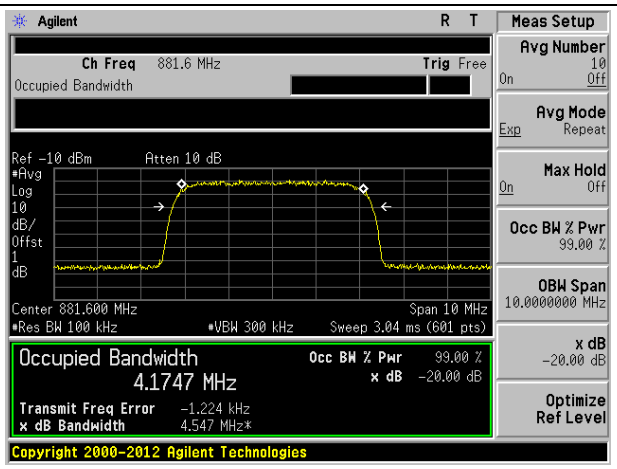
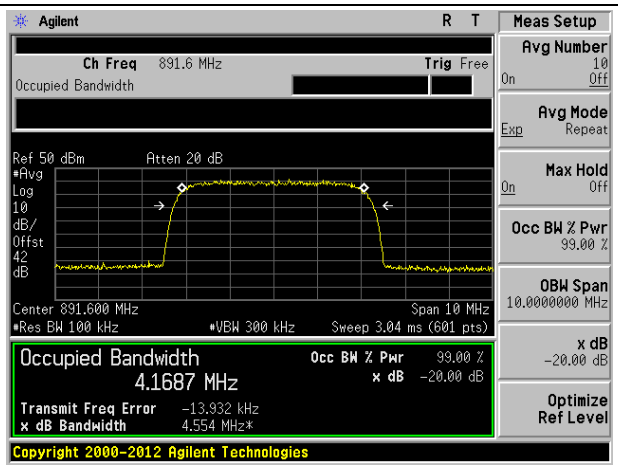
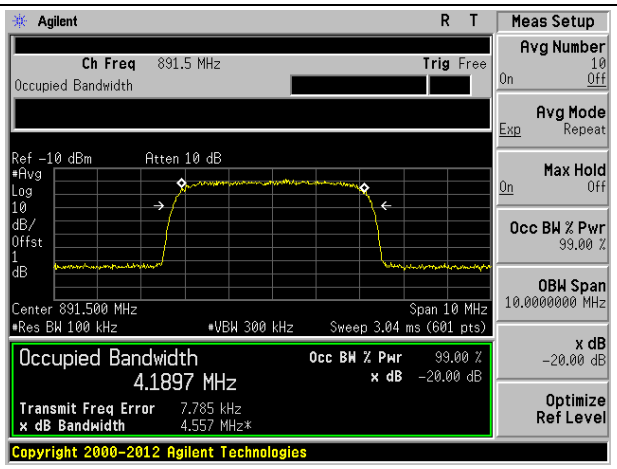
Input/output Bandwidth Comparison for CDMA

Output(Lowest channel)	Input(Lowest channel)
	
Output(Middle channel)	**Input(Middle channel)**
	
Output(Highest channel)	**Input(Highest channel)**
	

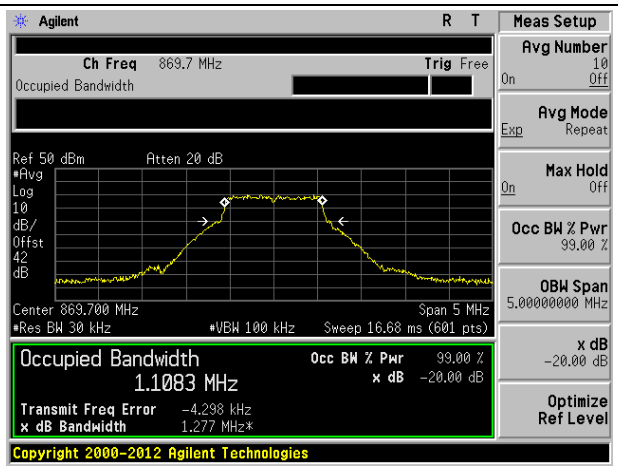
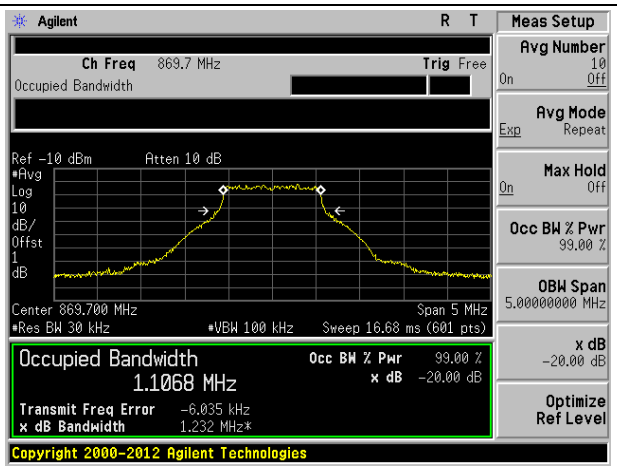
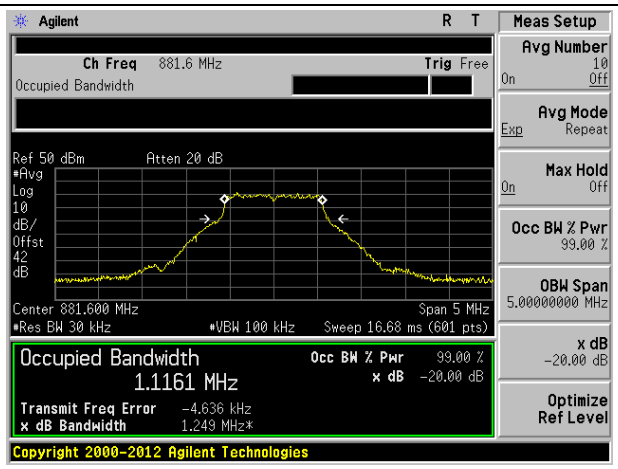
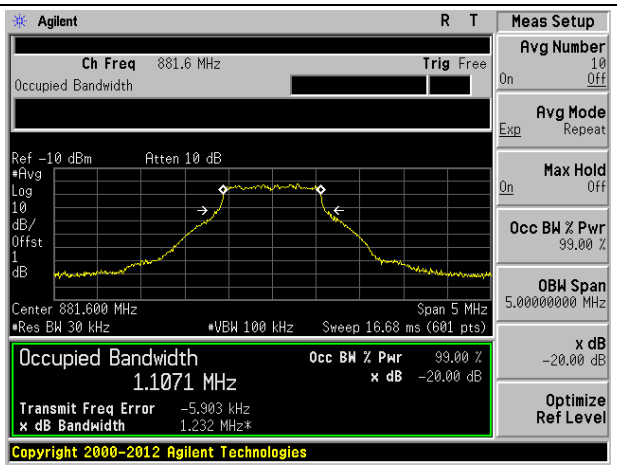
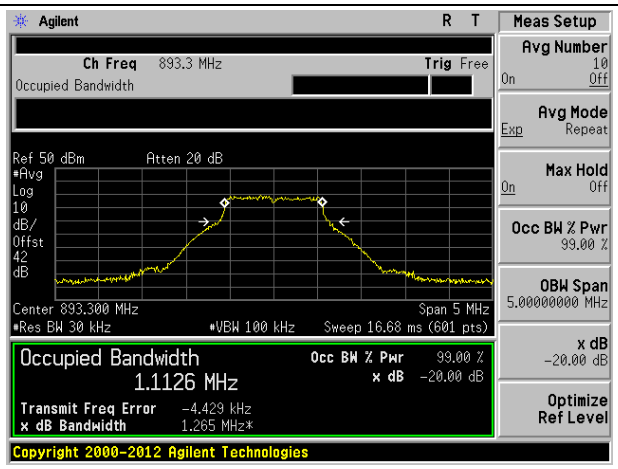
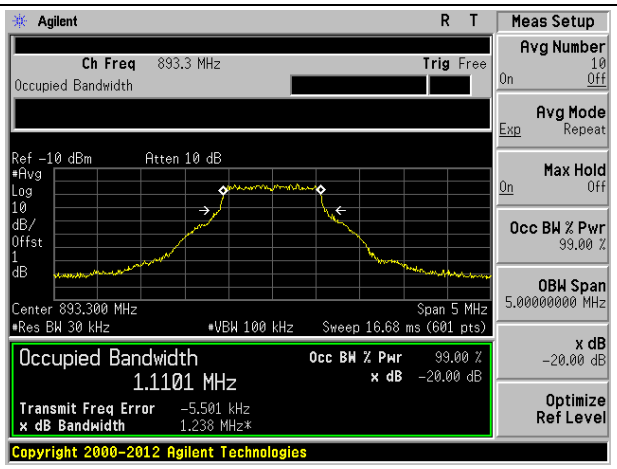
Input/output Bandwidth Comparison for CDMA-EVDO

Output(Lowest channel)	Input(Lowest channel)
	
Output(Middle channel)	**Input(Middle channel)**
	
Output(Highest channel)	**Input(Highest channel)**
	

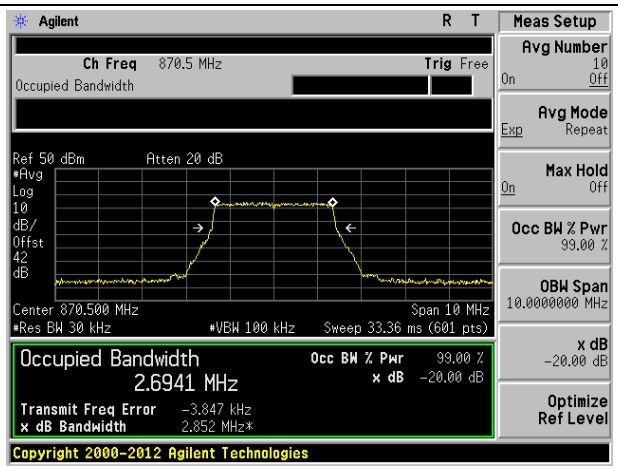
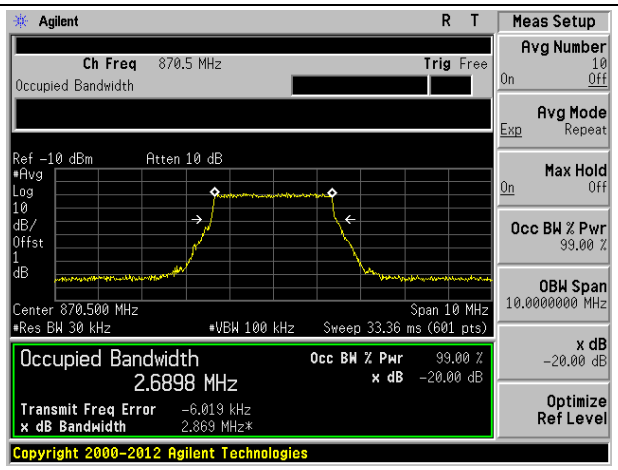
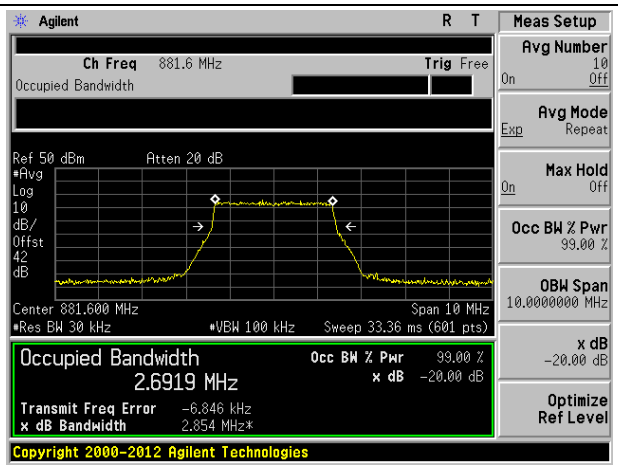
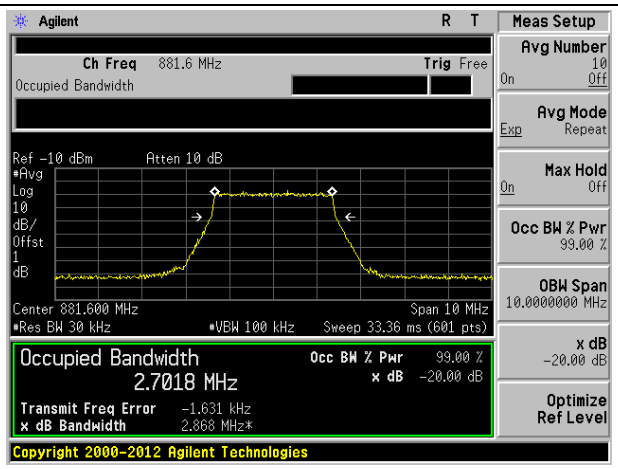
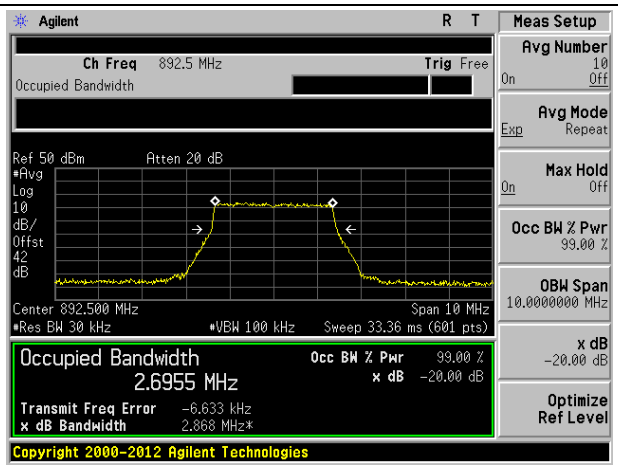
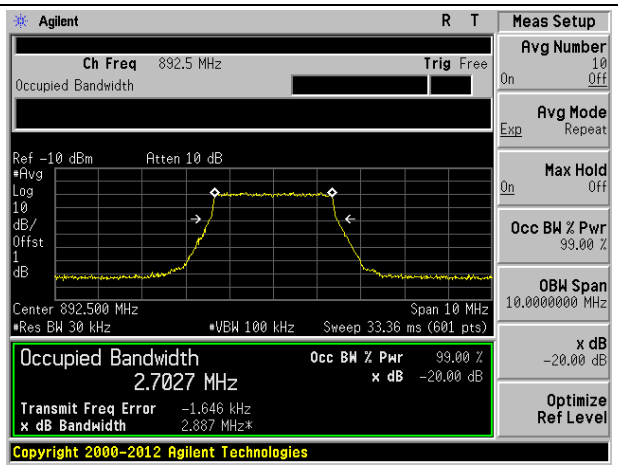
Input/output Bandwidth Comparison for WCDMA

Output(Lowest channel)	Input(Lowest channel)
	
Output(Middle channel)	Input(Middle channel)
	
Output(Highest channel)	Input(Highest channel)
	

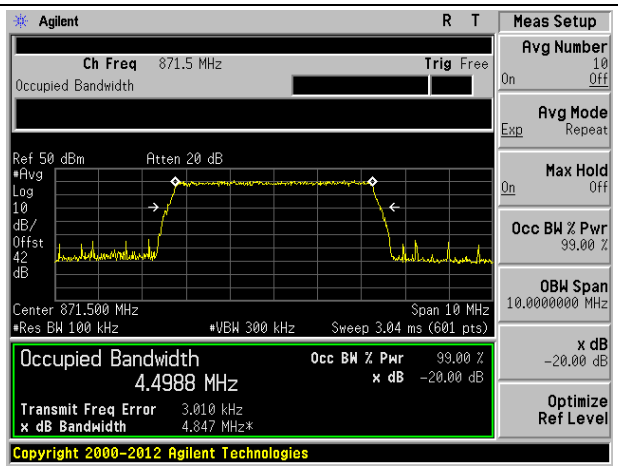
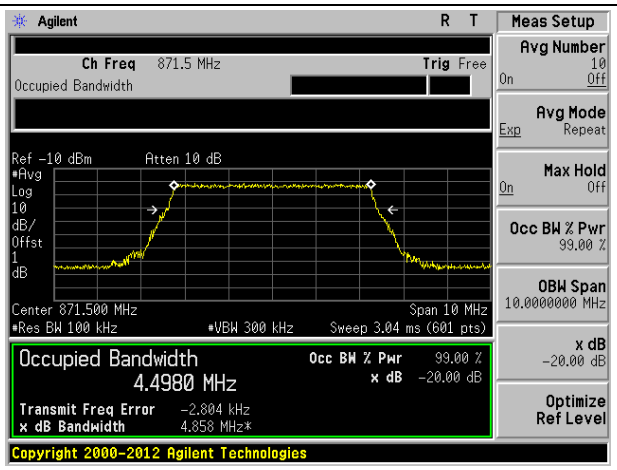
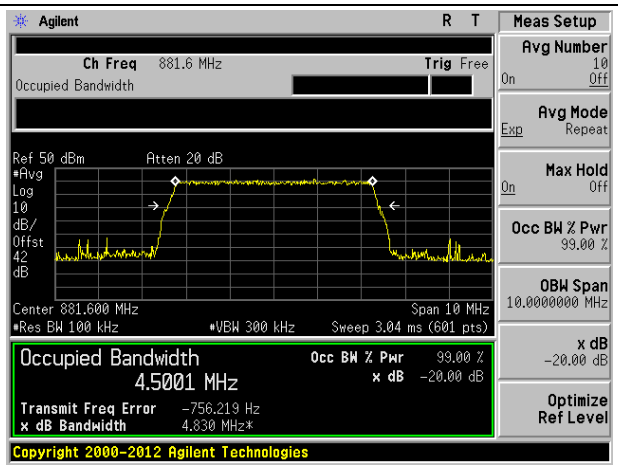
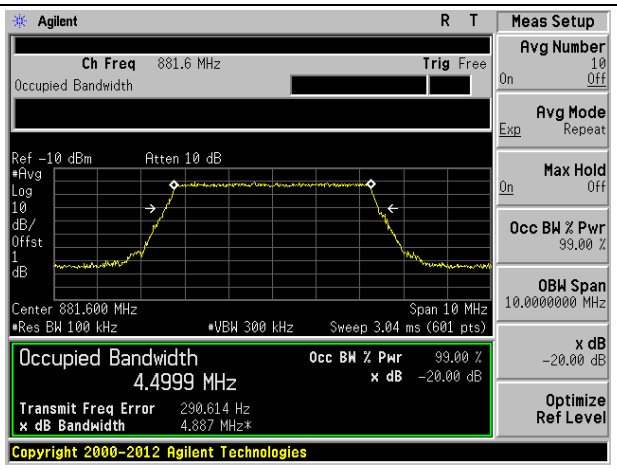
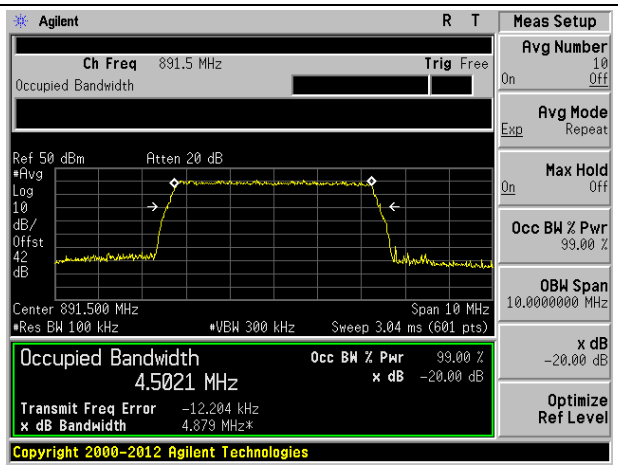
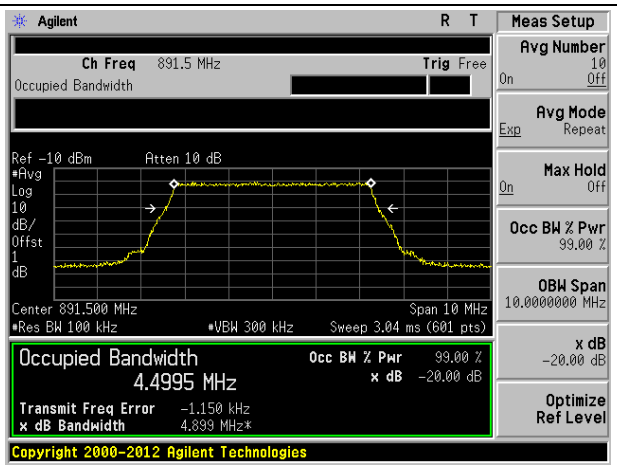
Input/output Bandwidth Comparison for LTE 1.4MHz

Output(Lowest channel)	Input(Lowest channel)
	
Output(Middle channel)	Input(Middle channel)
	
Output(Highest channel)	Input(Highest channel)
	

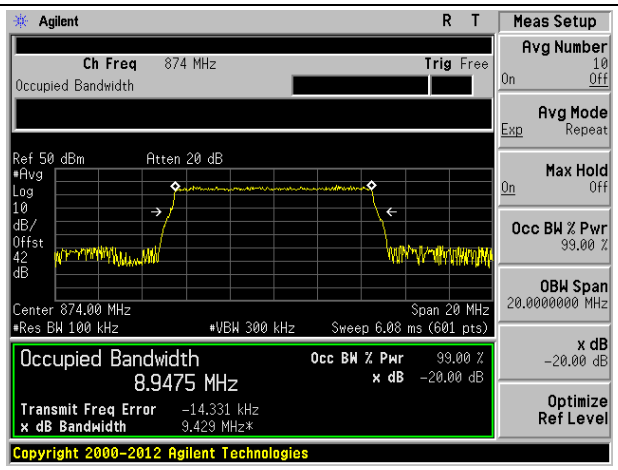
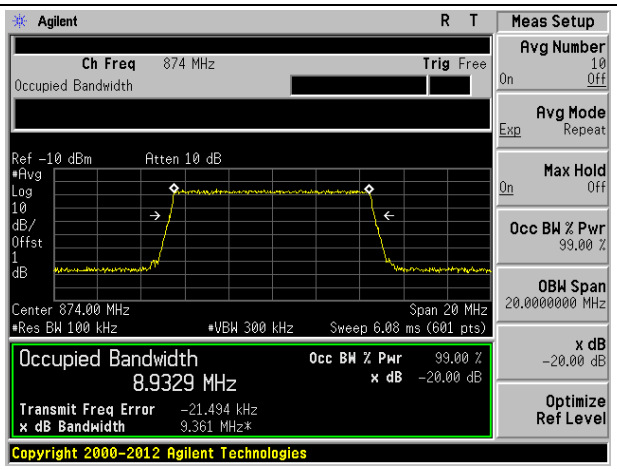
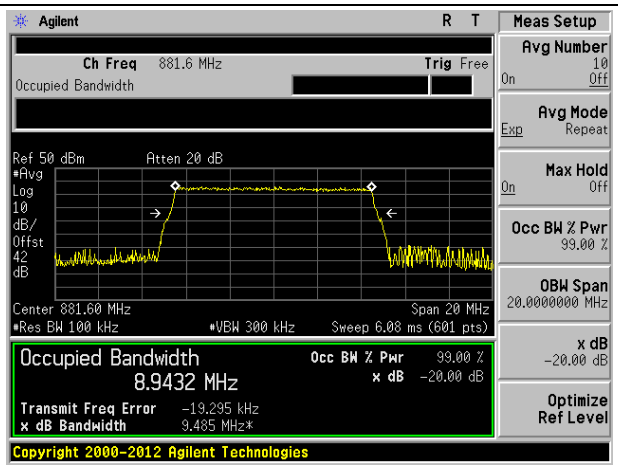
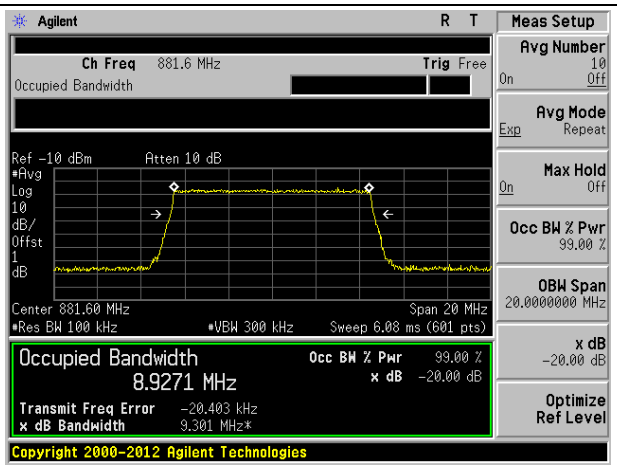
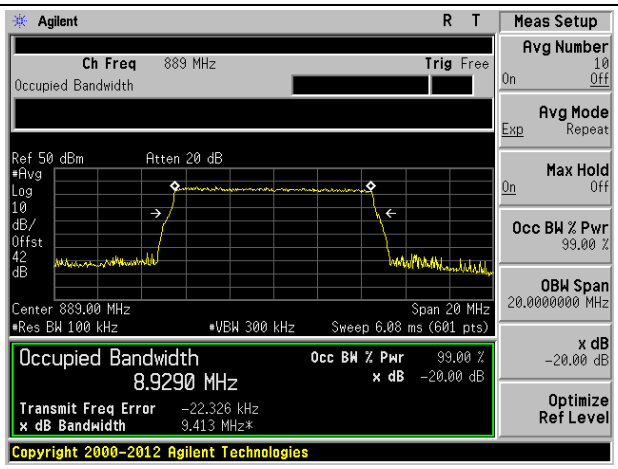
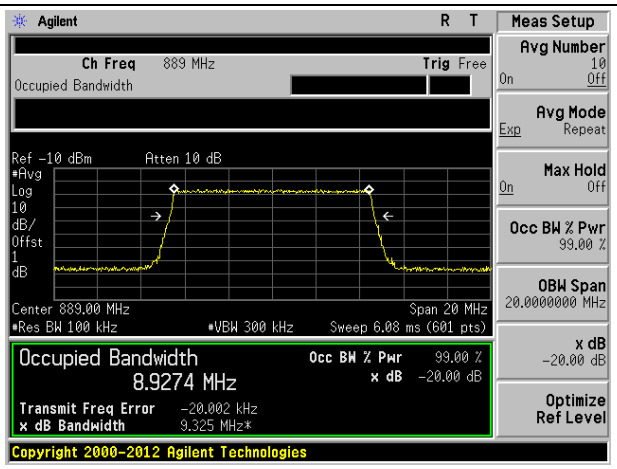
Input/output Bandwidth Comparison for LTE 3MHz

Output(Lowest channel)	Input(Lowest channel)
	
Output(Middle channel)	Input(Middle channel)
	
Output(Highest channel)	Input(Highest channel)
	

Input/output Bandwidth Comparison for LTE 5MHz

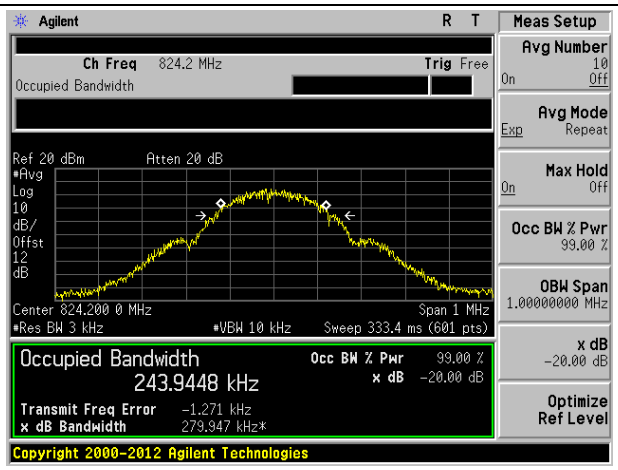
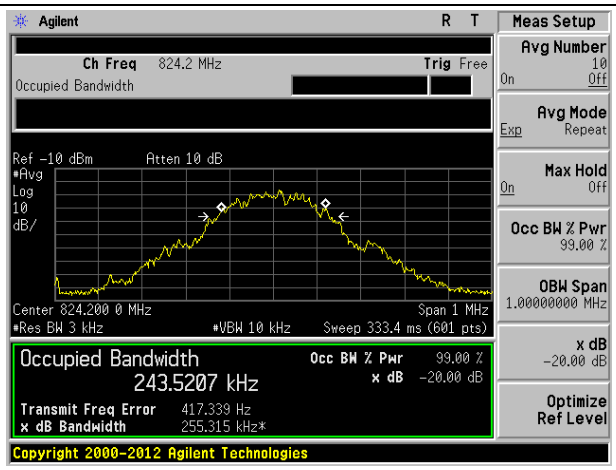
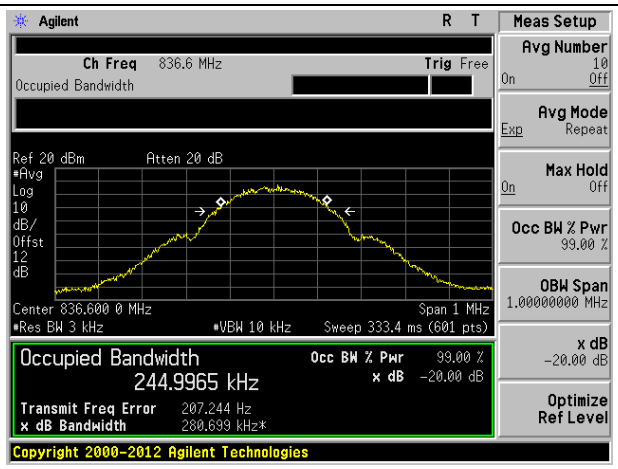
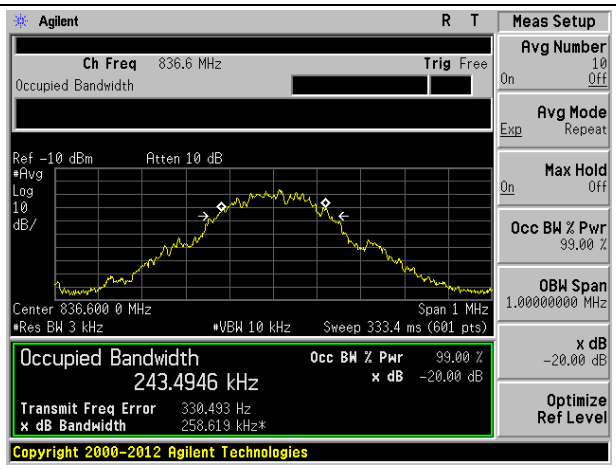
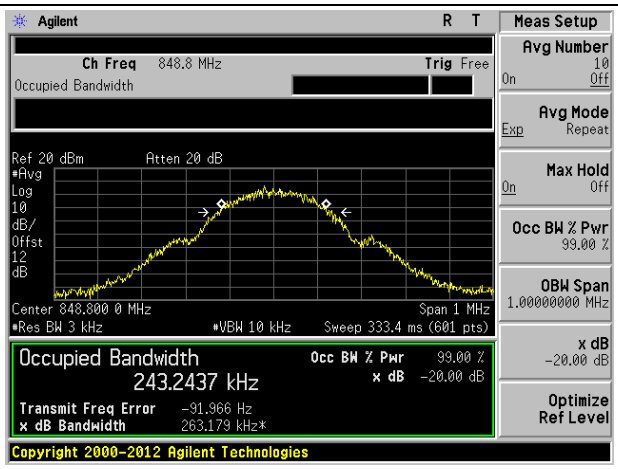
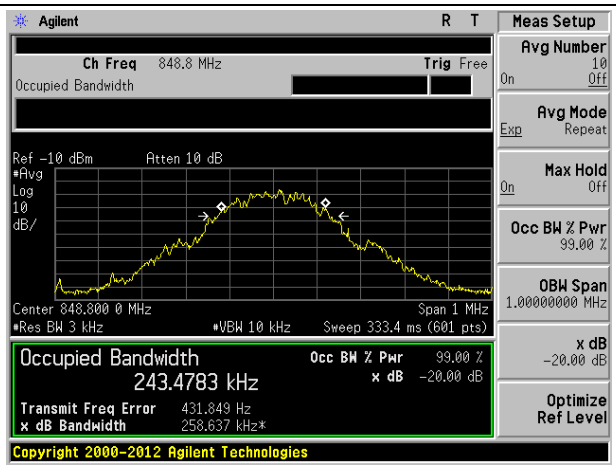
Output(Lowest channel)	Input(Lowest channel)
	
Output(Middle channel)	Input(Middle channel)
	
Output(Highest channel)	Input(Highest channel)
	

Input/output Bandwidth Comparison for LTE 10MHz

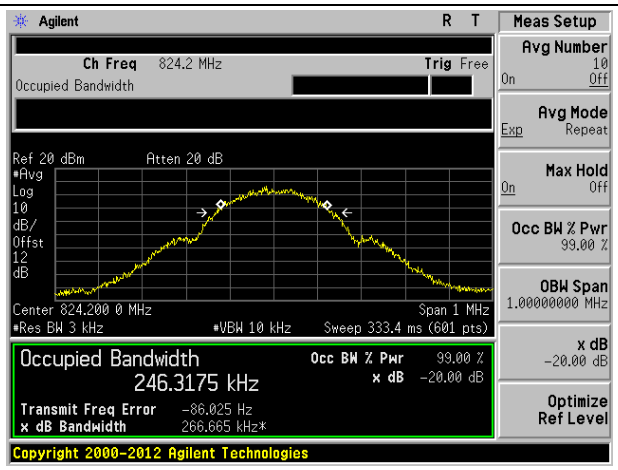
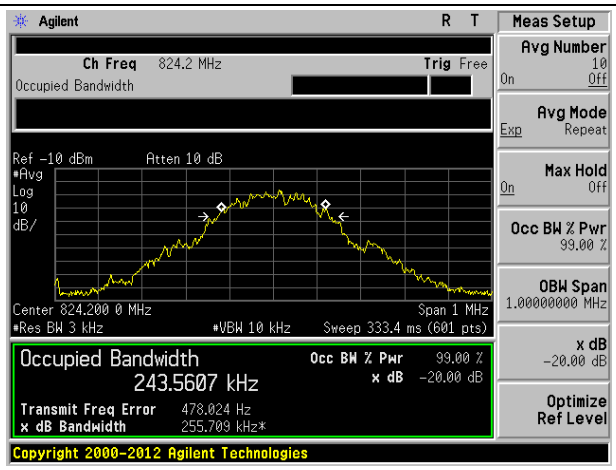
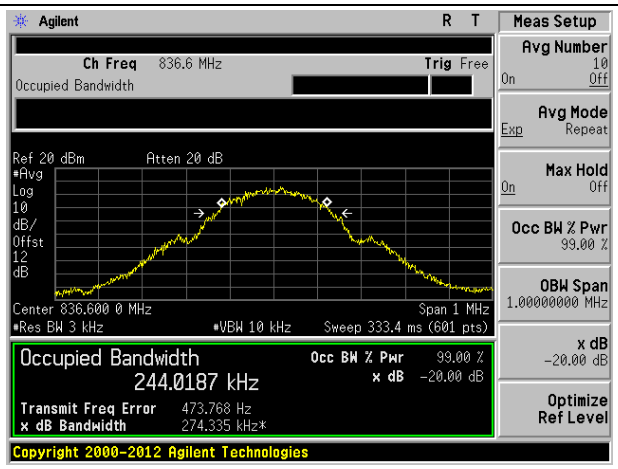
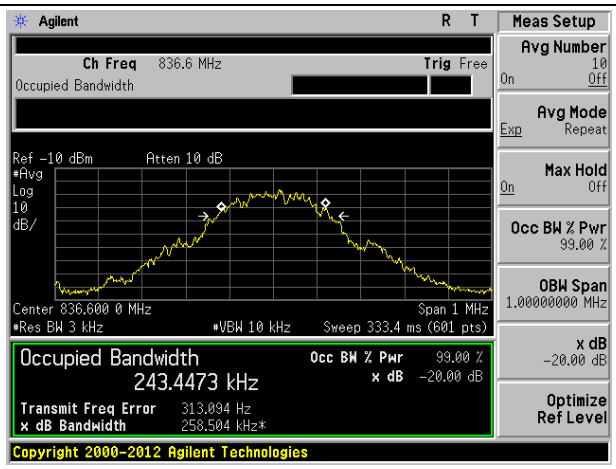
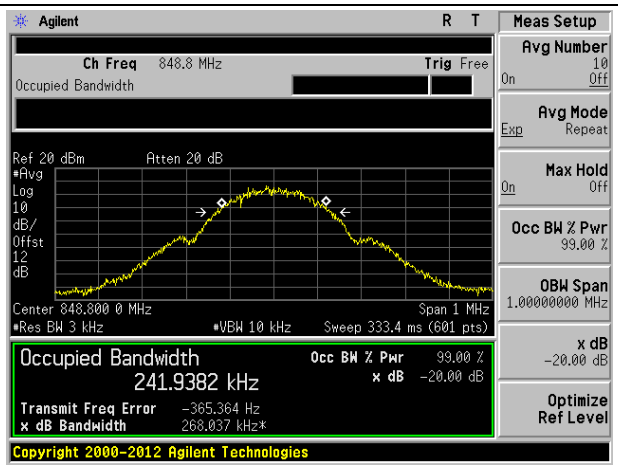
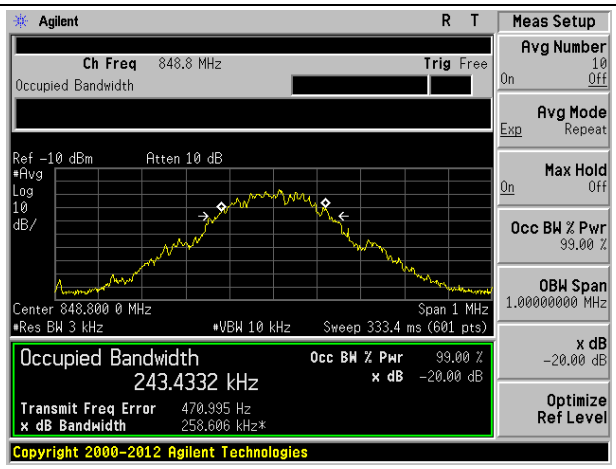
Output(Lowest channel)	Input(Lowest channel)
	
Output(Middle channel)	Input(Middle channel)
	
Output(Highest channel)	Input(Highest channel)
	

Uplink:

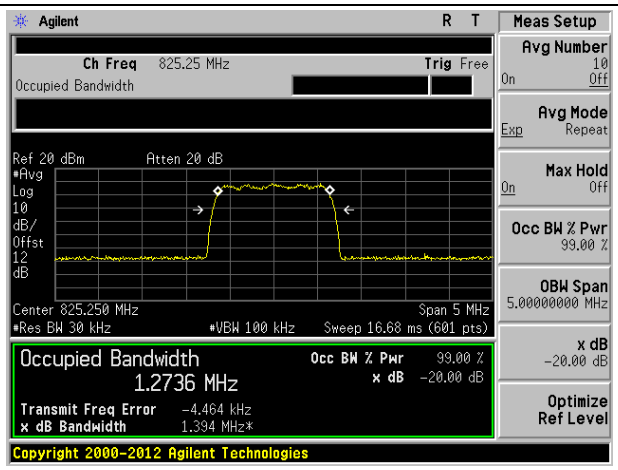
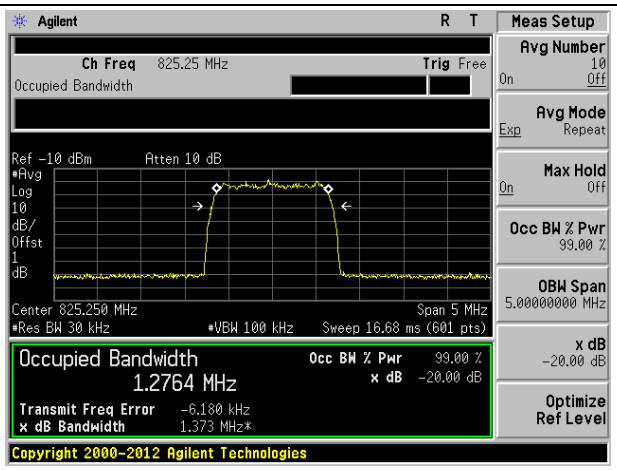
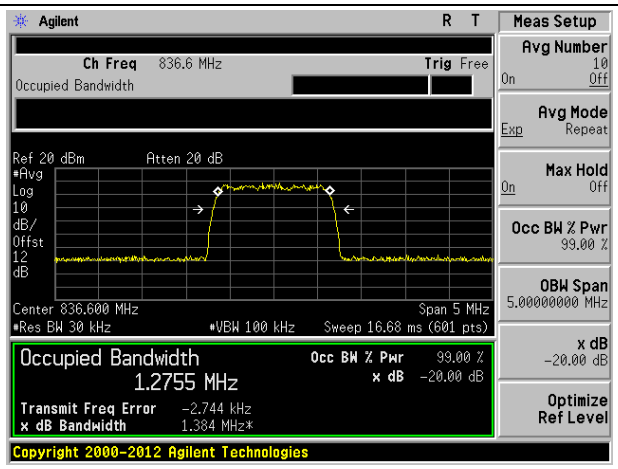
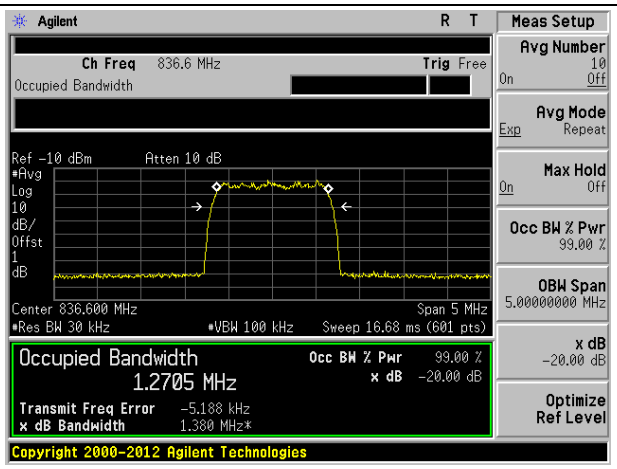
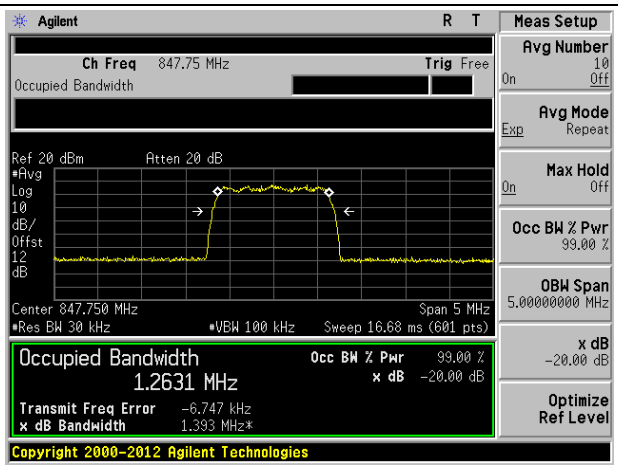
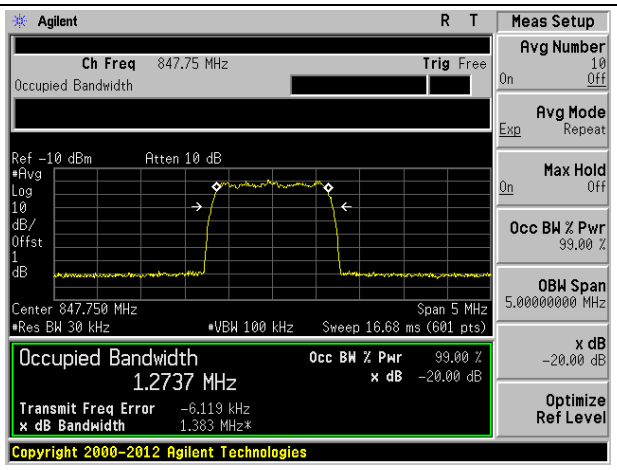
Input/output Bandwidth Comparison for GSM

Output(Lowest channel)	Input(Lowest channel)
	
Output(Middle channel)	**Input(Middle channel)**
	
Output(Highest channel)	**Input(Highest channel)**
	

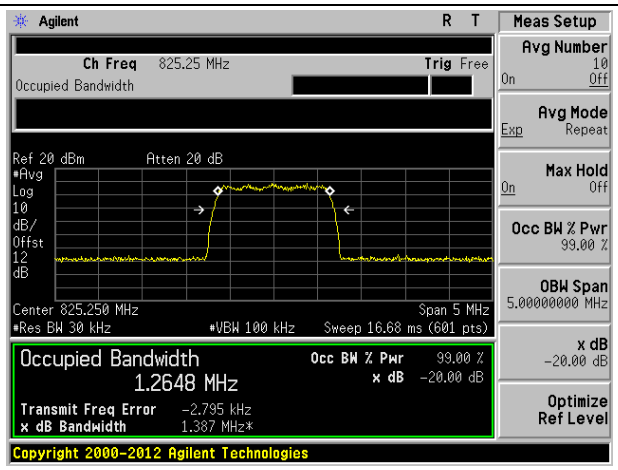
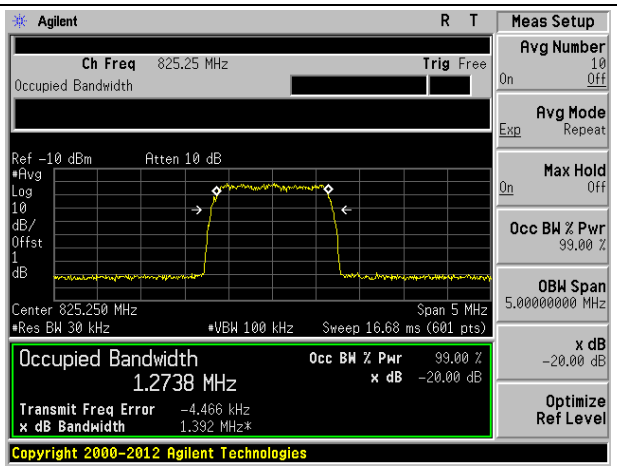
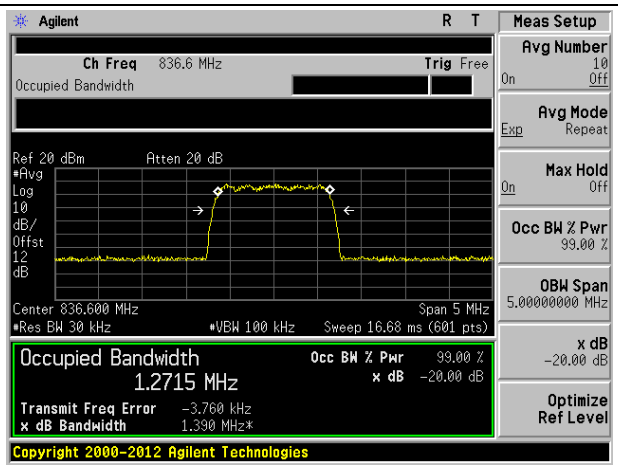
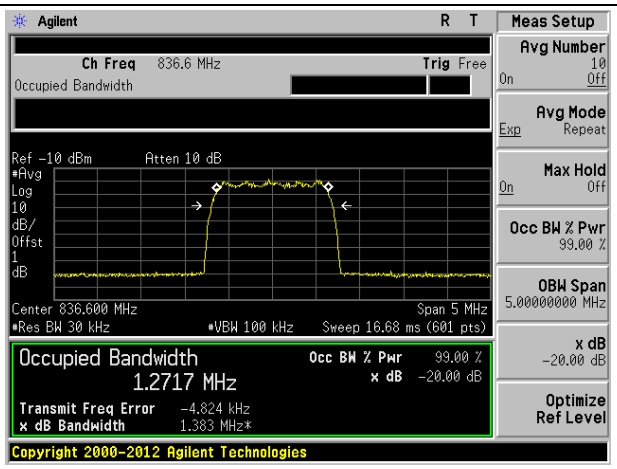
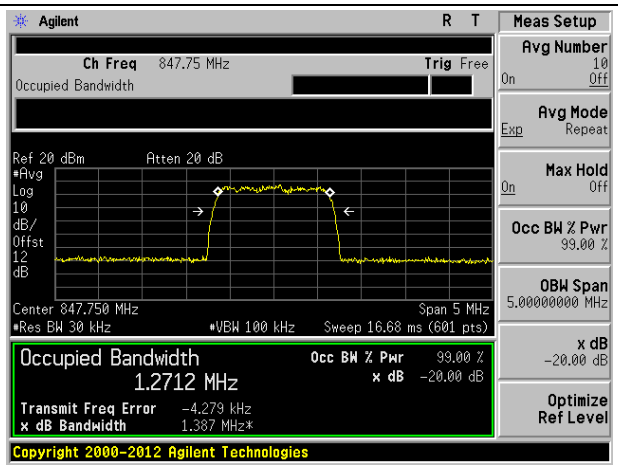
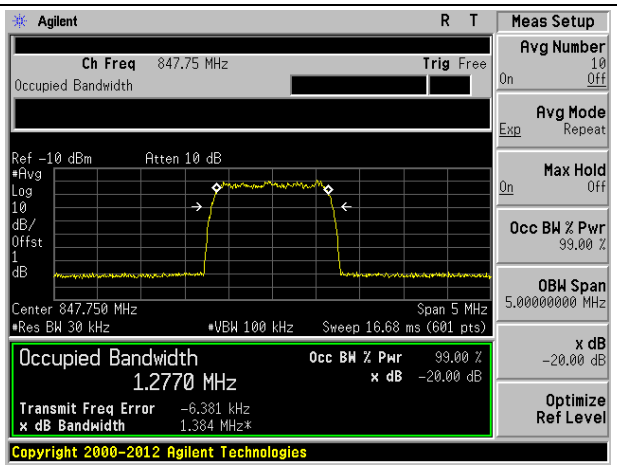
Input/output Bandwidth Comparison for EDGE

Output(Lowest channel)	Input(Lowest channel)
	
Output(Middle channel)	**Input(Middle channel)**
	
Output(Highest channel)	**Input(Highest channel)**
	

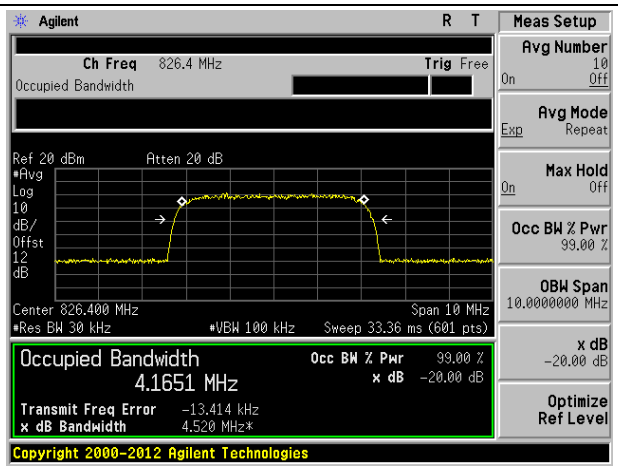
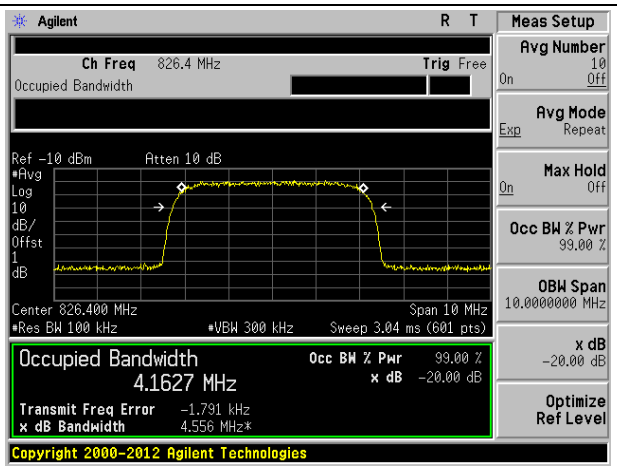
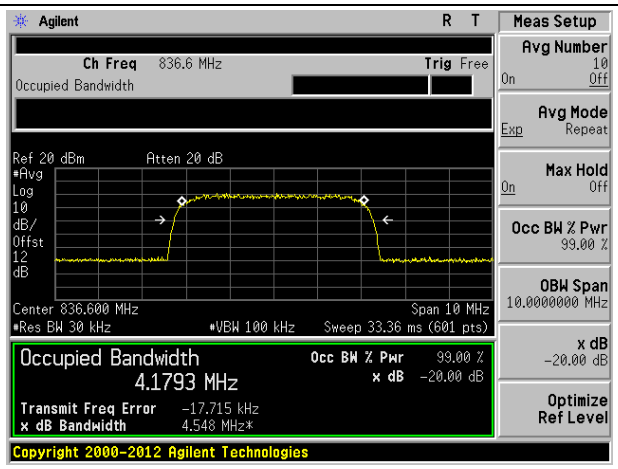
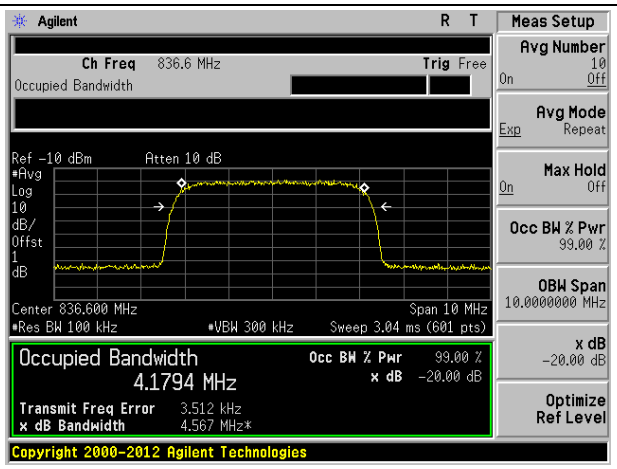
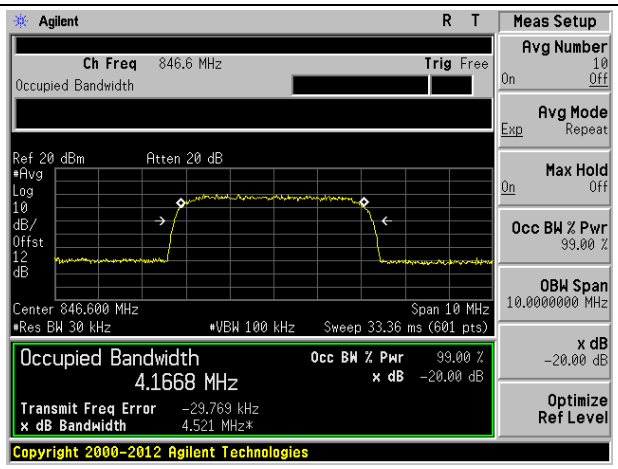
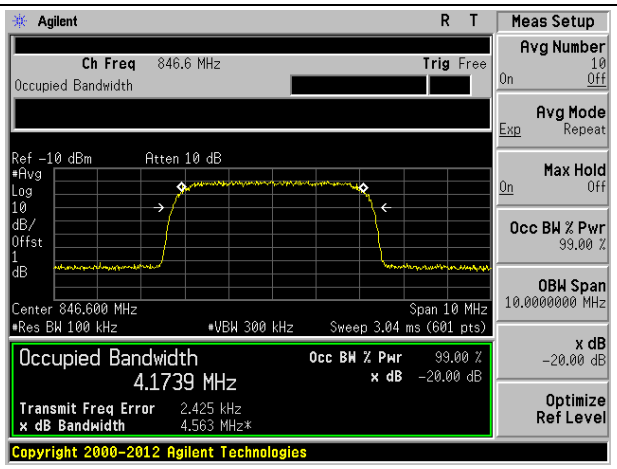
Input/output Bandwidth Comparison for CDMA

Output(Lowest channel)	Input(Lowest channel)
	
Output(Middle channel)	**Input(Middle channel)**
	
Output(Highest channel)	**Input(Highest channel)**
	

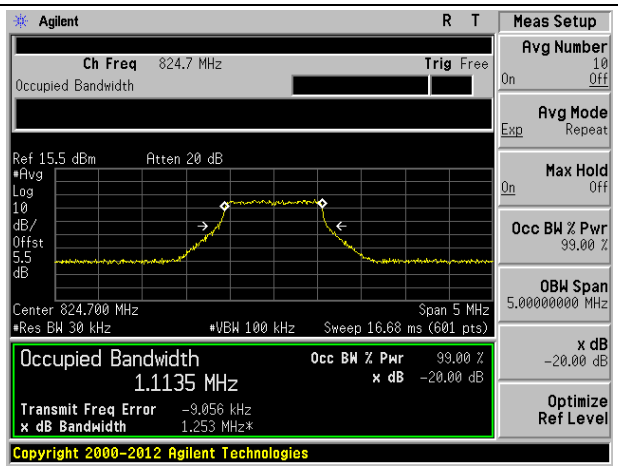
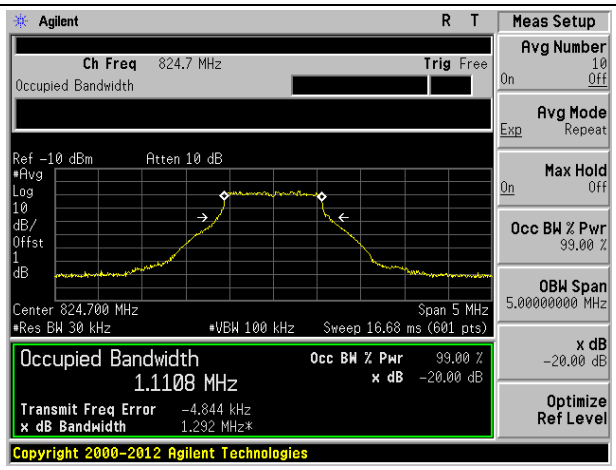
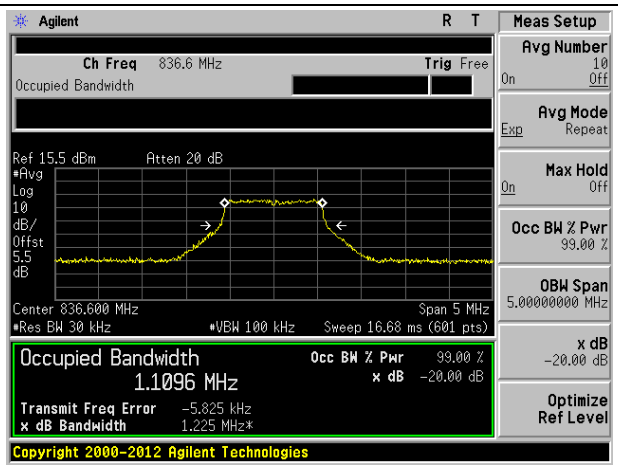
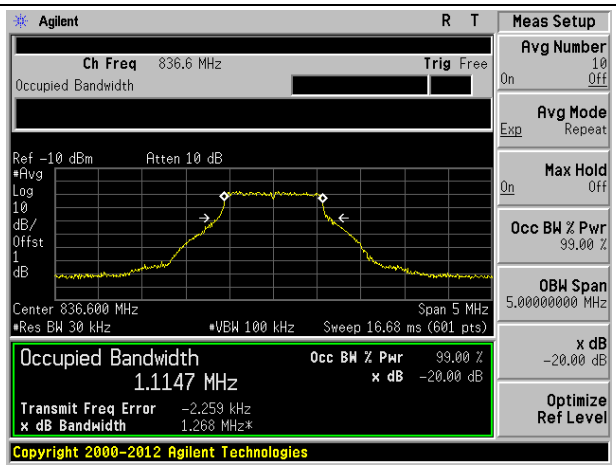
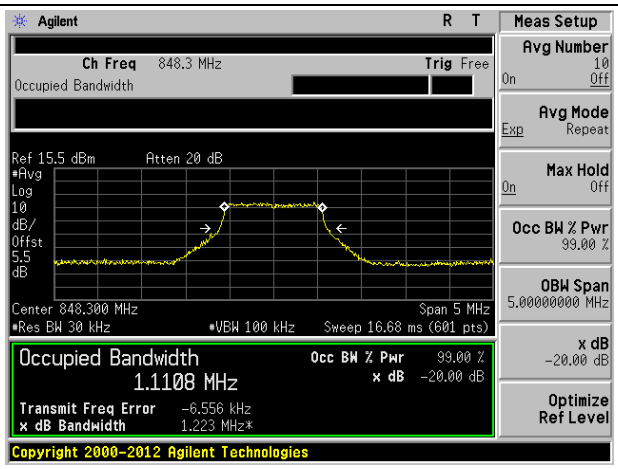
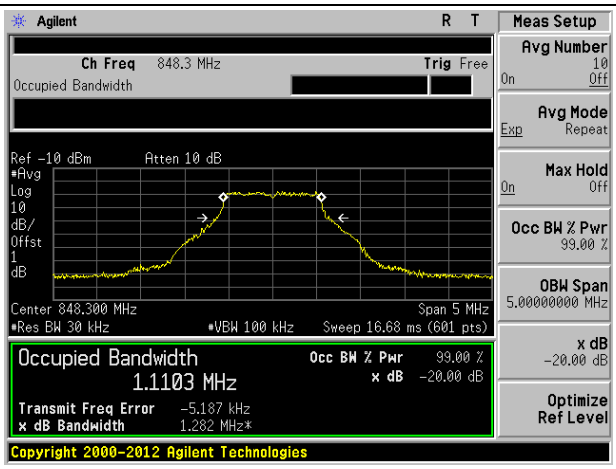
Input/output Bandwidth Comparison for CDMA-EVDO

Output(Lowest channel)	Input(Lowest channel)
	
Output(Middle channel)	Input(Middle channel)
	
Output(Highest channel)	Input(Highest channel)
	

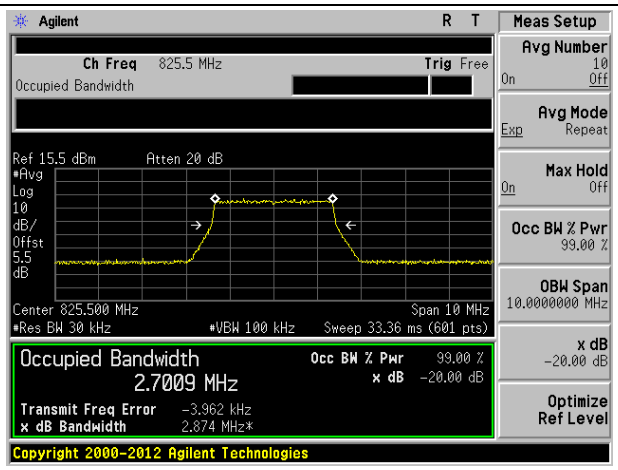
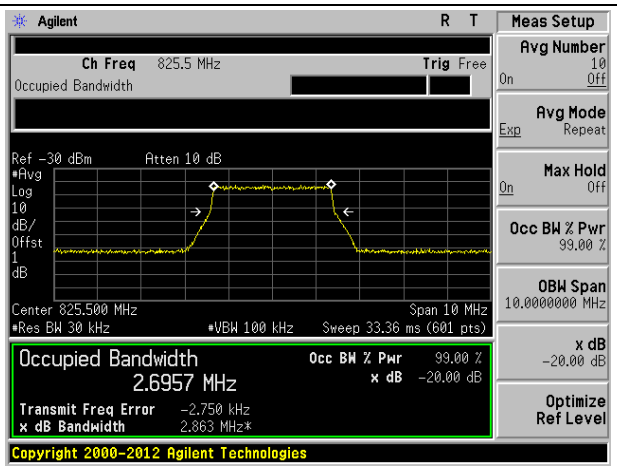
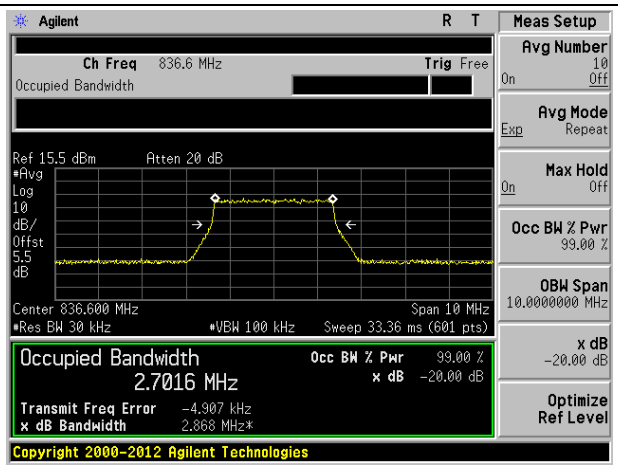
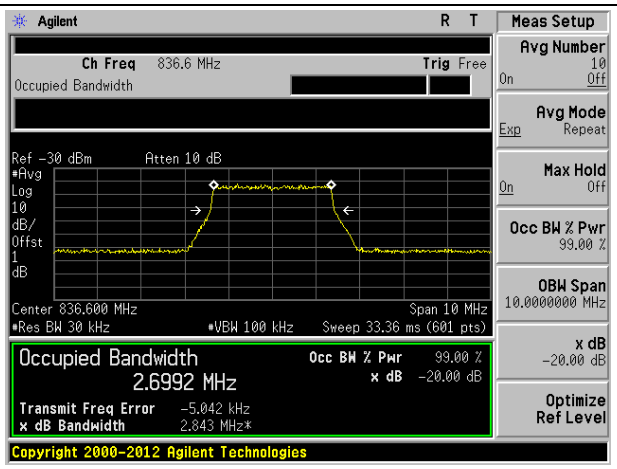
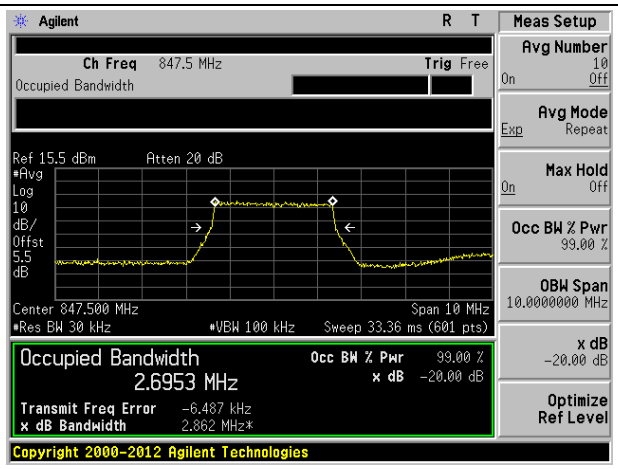
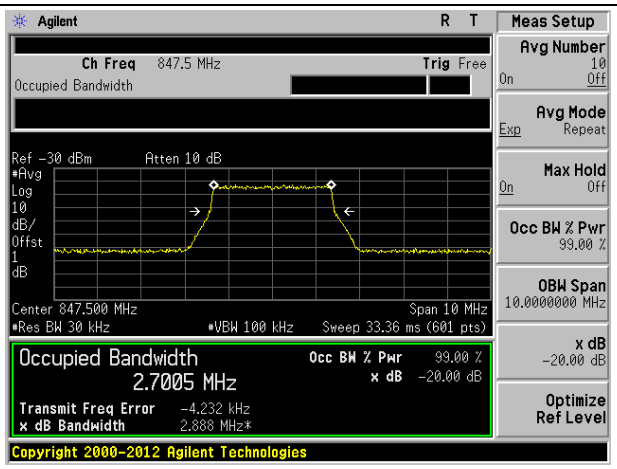
Input/output Bandwidth Comparison for WCDMA

Output(Lowest channel)	Input(Lowest channel)
	
Output(Middle channel)	**Input(Middle channel)**
	
Output(Highest channel)	**Input(Highest channel)**
	

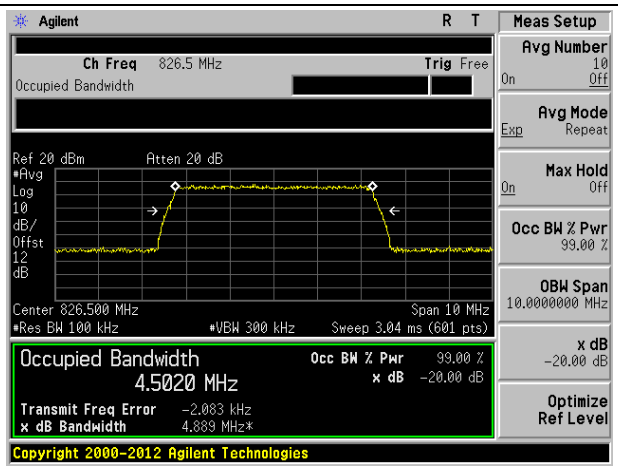
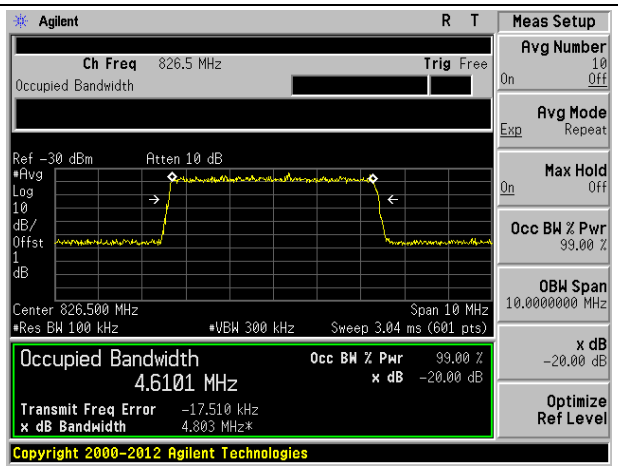
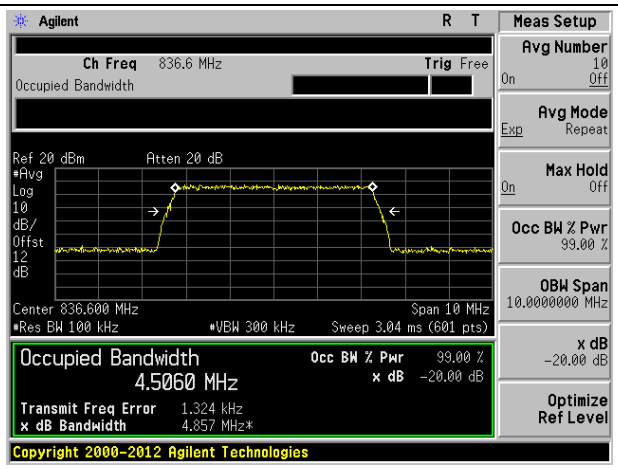
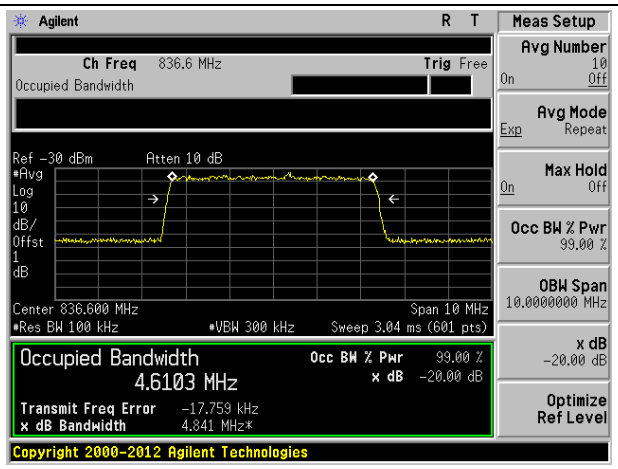
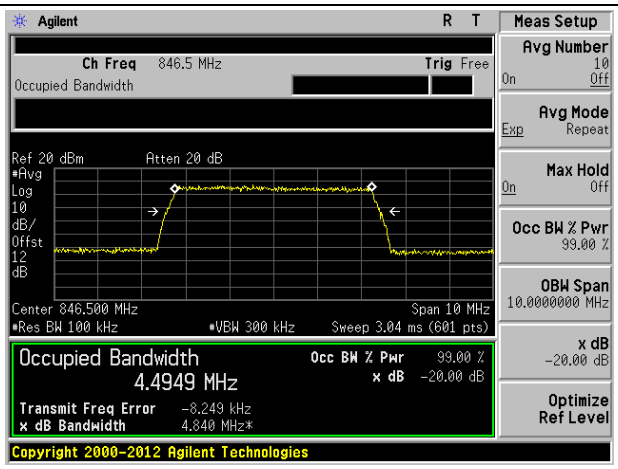
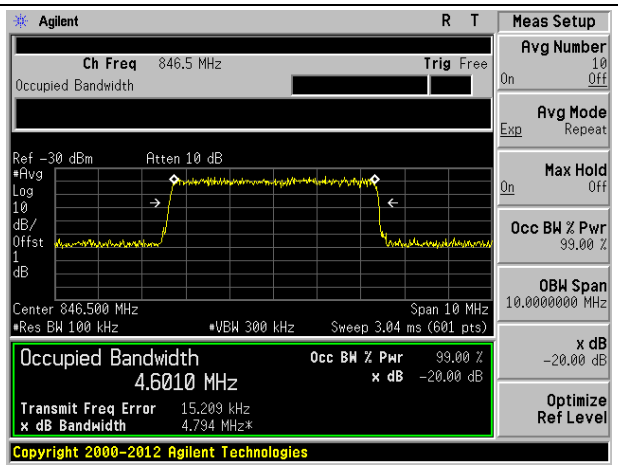
Input/output Bandwidth Comparison for LTE 1.4MHz

Output(Lowest channel)	Input(Lowest channel)
	
Output(Middle channel)	Input(Middle channel)
	
Output(Highest channel)	Input(Highest channel)
	

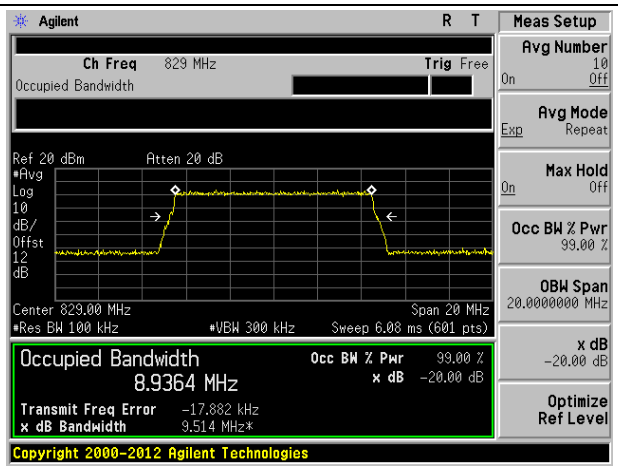
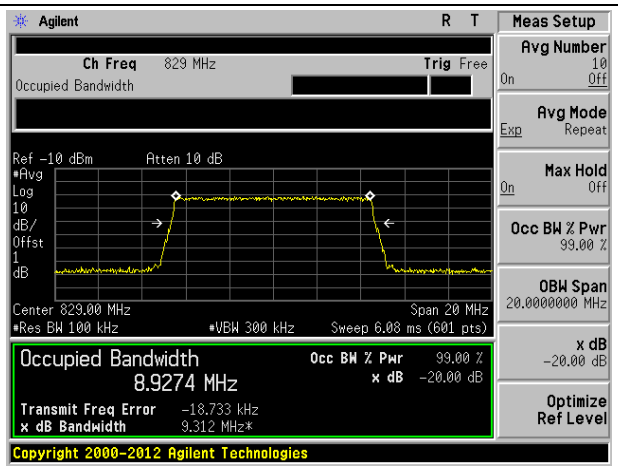
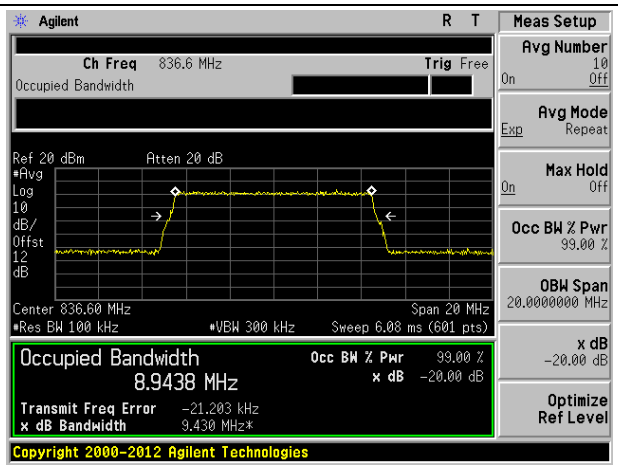
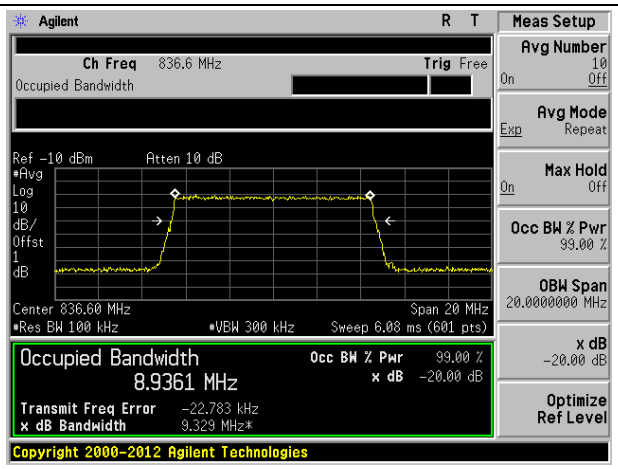
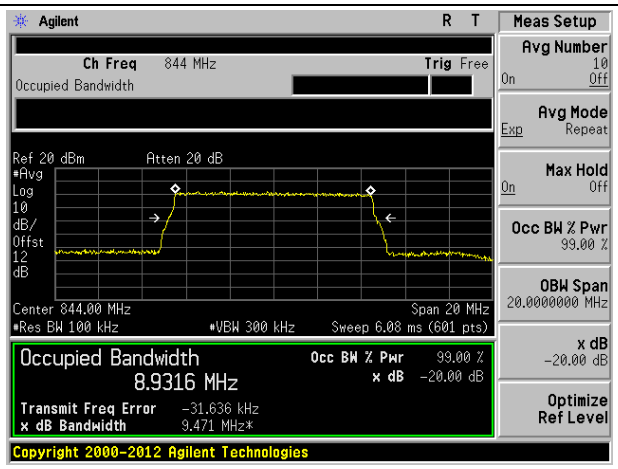
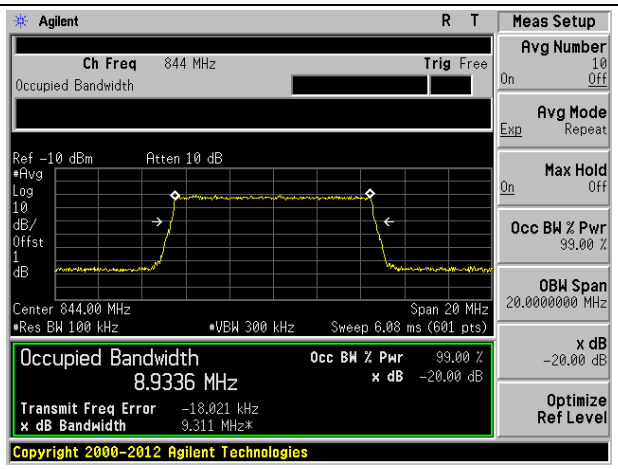
Input/output Bandwidth Comparison for LTE 3MHz

Output(Lowest channel)	Input(Lowest channel)
	
Output(Middle channel)	Input(Middle channel)
	
Output(Highest channel)	Input(Highest channel)
	

Input/output Bandwidth Comparison for LTE 5MHz

Output(Lowest channel)	Input(Lowest channel)
	
Output(Middle channel)	**Input(Middle channel)**
	
Output(Highest channel)	**Input(Highest channel)**
	

Input/output Bandwidth Comparison for LTE 10MHz

Output(Lowest channel)	Input(Lowest channel)
	
Output(Middle channel)	Input(Middle channel)
	
Output(Highest channel)	Input(Highest channel)
	

10 OUT OF BAND EMISSION AT ANTENNA TERMINALS

10.1 Standard Applicable

According to FCC § 2.1051 and § 22.917(a)

10.2 Test setup

Please refer the section §6.2 Configuration of Tested System.

10.3 Measurement Procedure

The out of band emissions were measured directly from the EUT antenna output with a spectrum analyzer from 30 MHz to the 10th harmonic of the highest carrier frequency. Test signals used is WCDMA/CDMA/CDMA EV-DO/GSM/EDGE/LTE.The different signals were input one at a time to the EUT. Tests was performed with WCDMA/CDMA/CDMA EV-DO/GSM/EDGE/LTE signal input.

Band edge compliance is also demonstrated using a WCDMA/CDMA/CDMA EV-DO/GSM/EDGE/LTE signal at the upper and lower limits of the band.

1. The EUT RF output port was connected to spectrum analyzer.
2. The level of RF input signal shall be increased, until the maximum output power per channel, declared by client, is reached.
3. The spurious emissions at antenna were measured at the RF output port of the EUT at middle channel of each type of modulation.

Spectrum analyzer settings:

Detector: RMS.

> 1 MHz from Band Edge

Below 1G: RBW=100kHz; Above 1G: RBW=1 MHz ; VBW≥ RBW

< 1 MHz from Band Edge

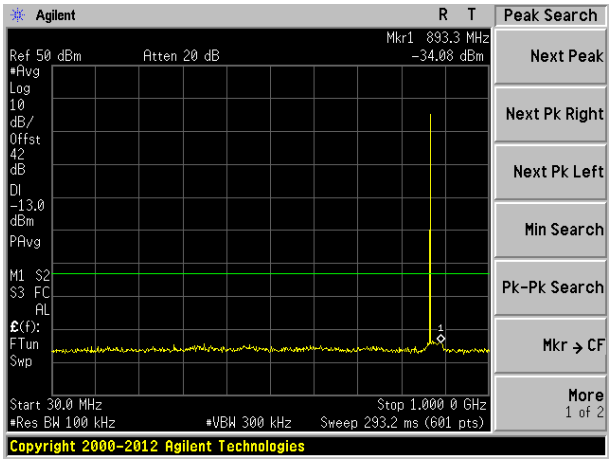
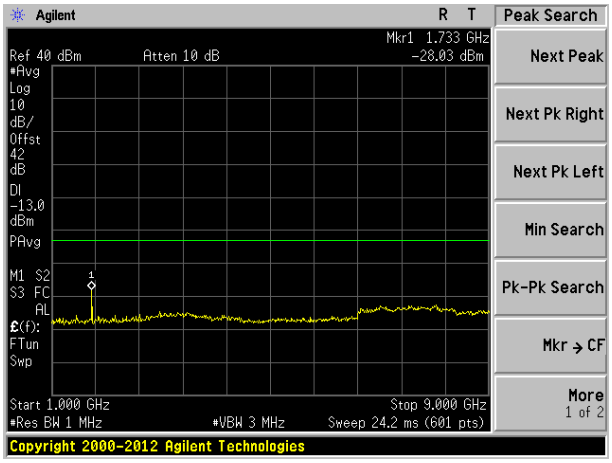
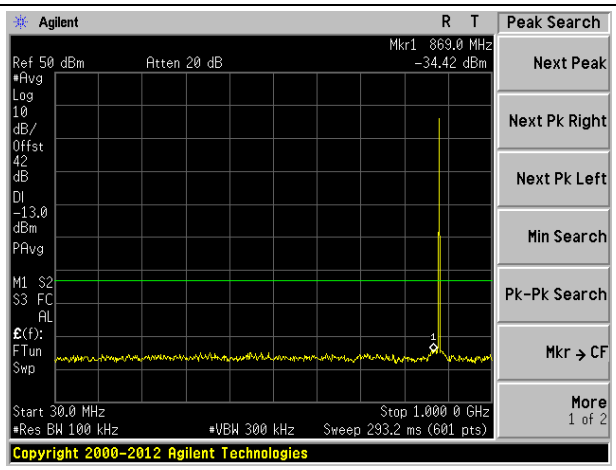
RBW=3 kHz; VBW≥ RBW

10.4 Measurement Result

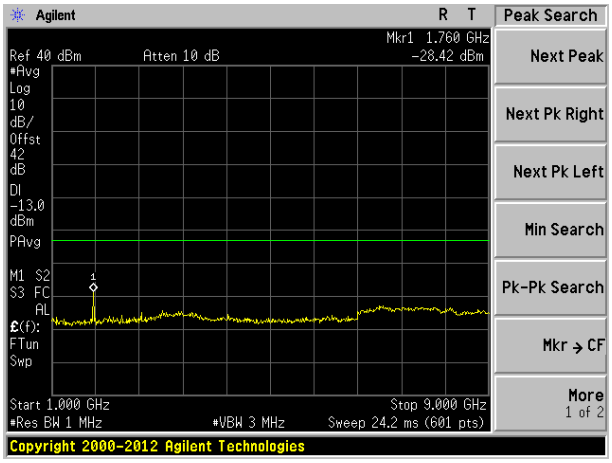
10.4.1 Spurious emission

Downlink:

Spurious emission of GSM

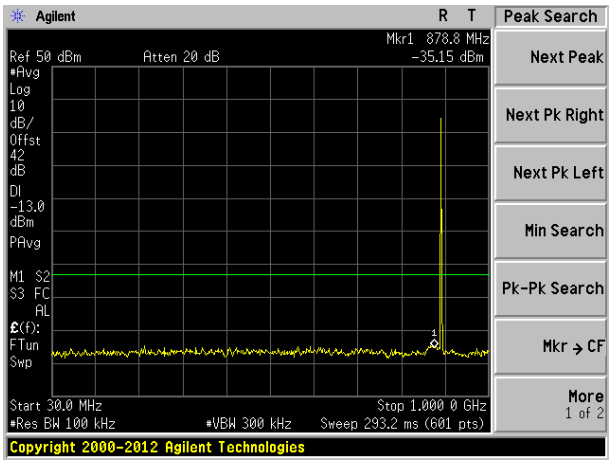
Lowest channel
30MHz-1000MHz

1000MHz-9000MHz

Middle channel
30MHz-1000MHz


1000MHz-9000MHz

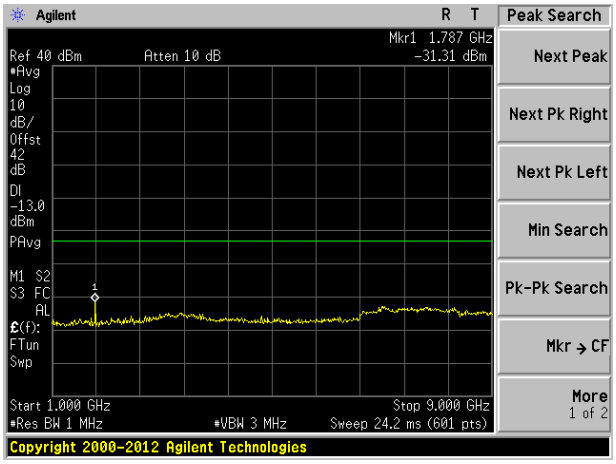


Highest channel

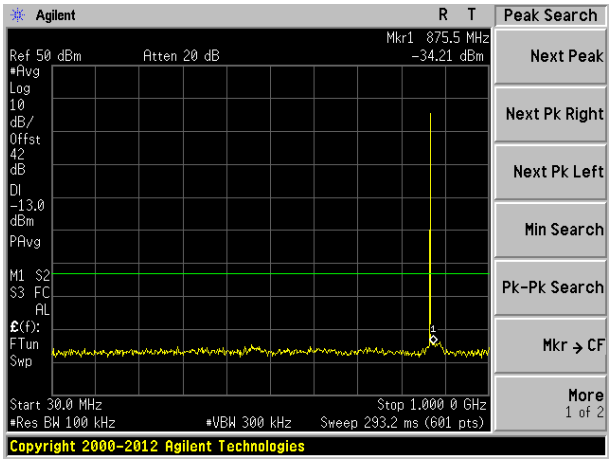
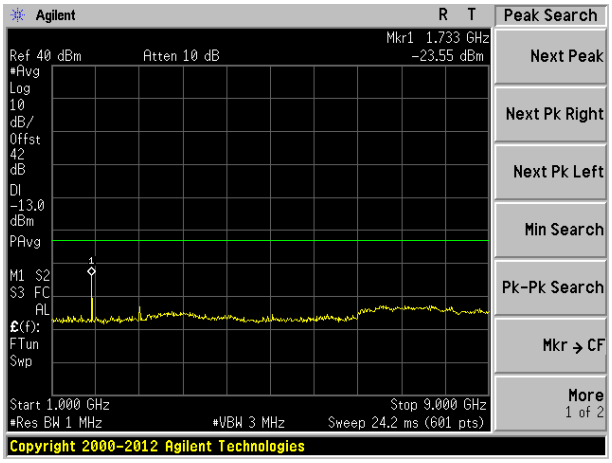
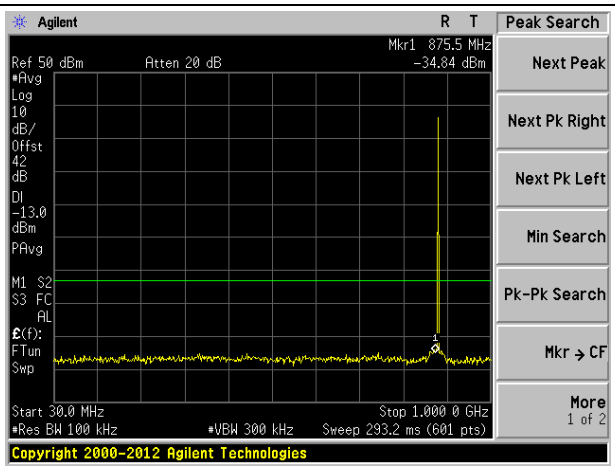
30MHz-1000MHz



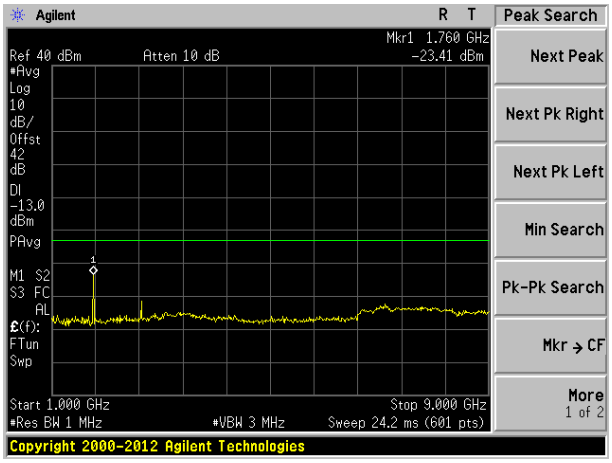
1000MHz-9000MHz



Spurious emission of EDGE

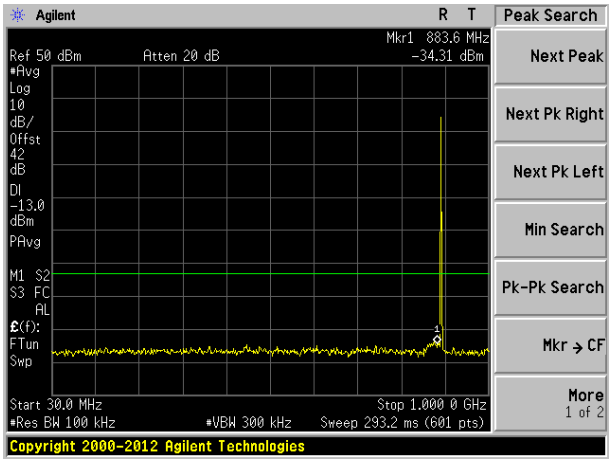
Lowest channel
30MHz-1000MHz

1000MHz-9000MHz

Middle channel
30MHz-1000MHz


1000MHz-9000MHz

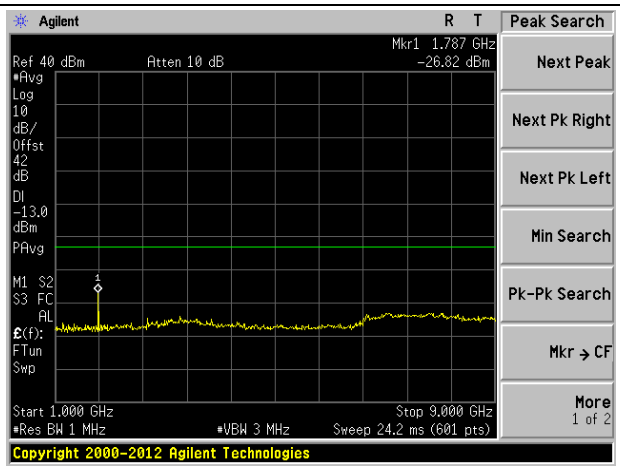


Highest channel

30MHz-1000MHz



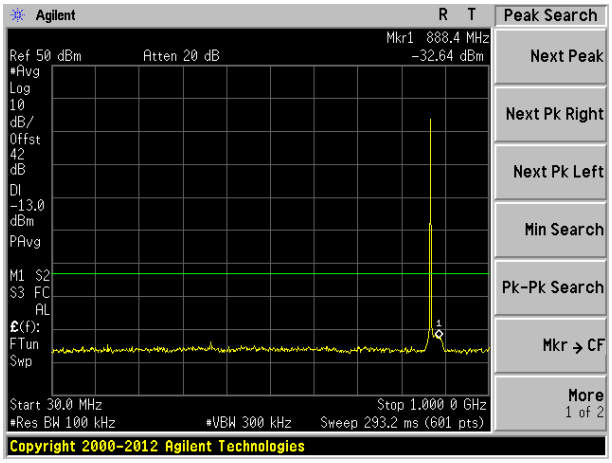
1000MHz-9000MHz



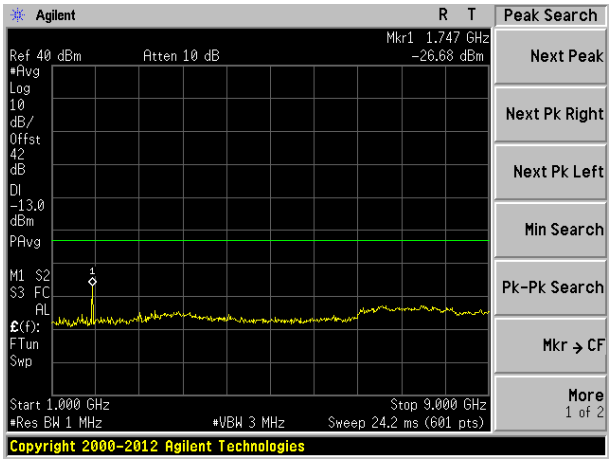
Spurious emission of CDMA

Lowest channel

30MHz-1000MHz

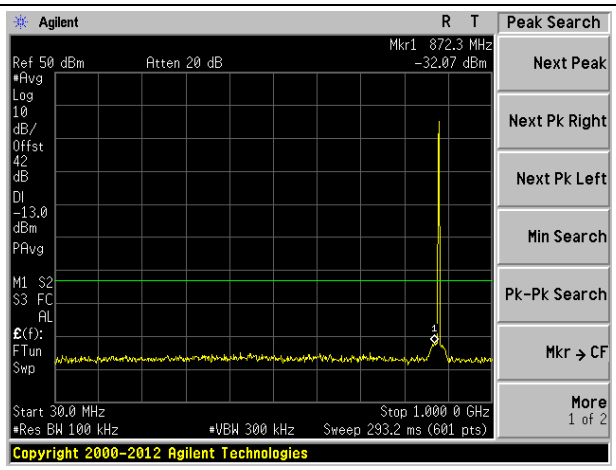


1000MHz-9000MHz

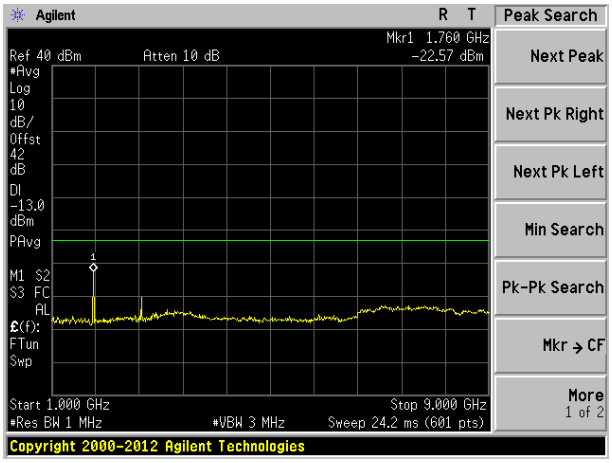


Middle channel

30MHz-1000MHz

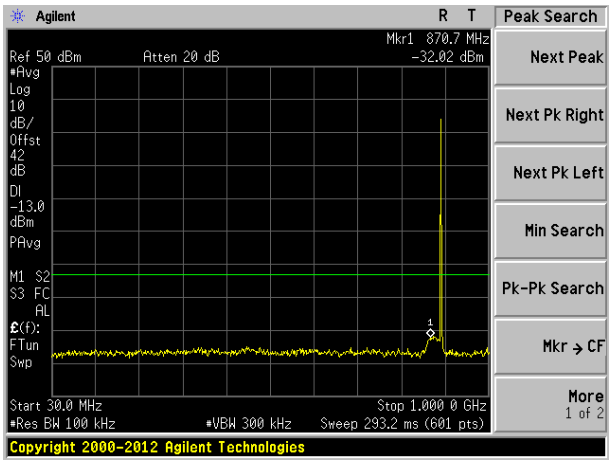


1000MHz-9000MHz

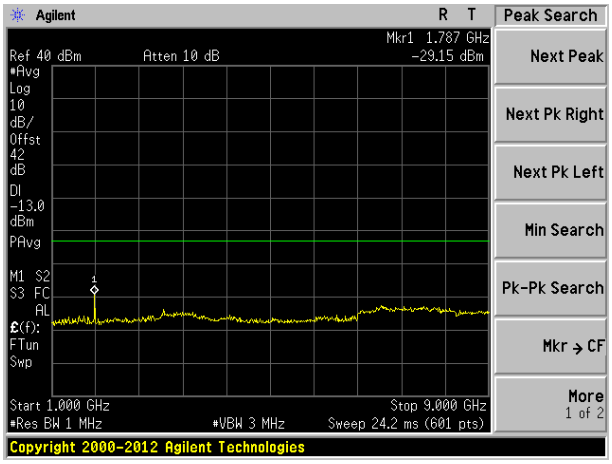


Highest channel

30MHz-1000MHz



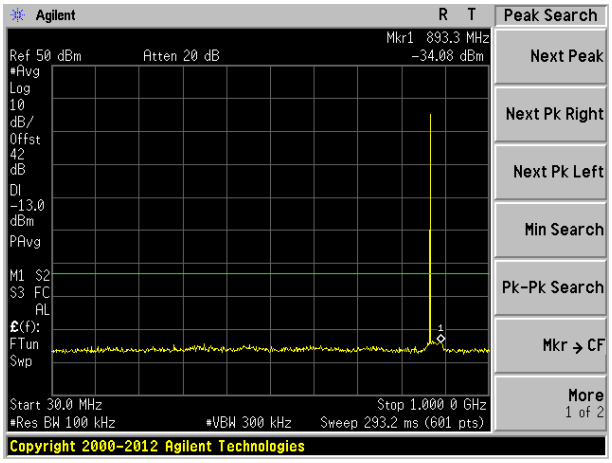
1000MHz-9000MHz



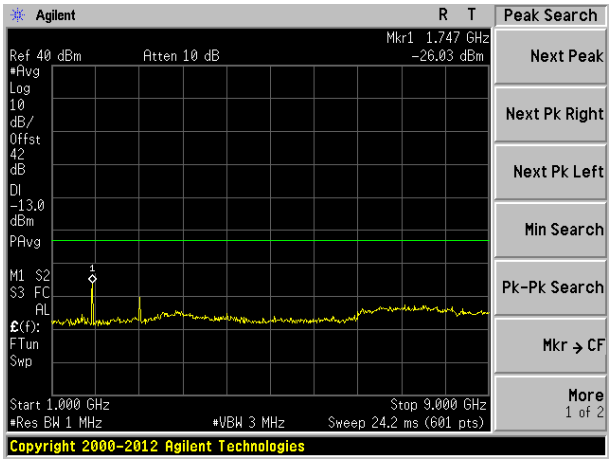
Spurious emission of CDMA-EVDO

Lowest channel

30MHz-1000MHz

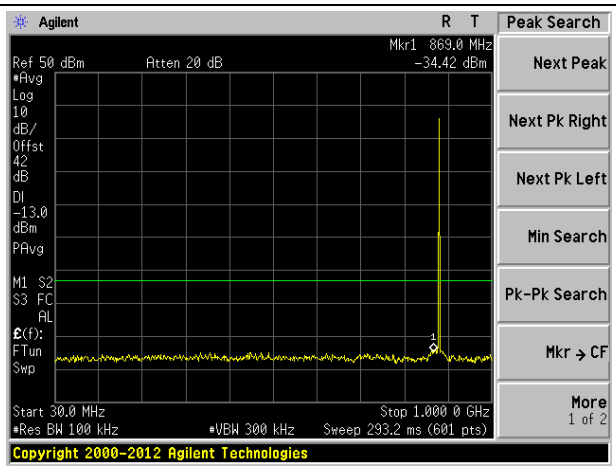


1000MHz-9000MHz

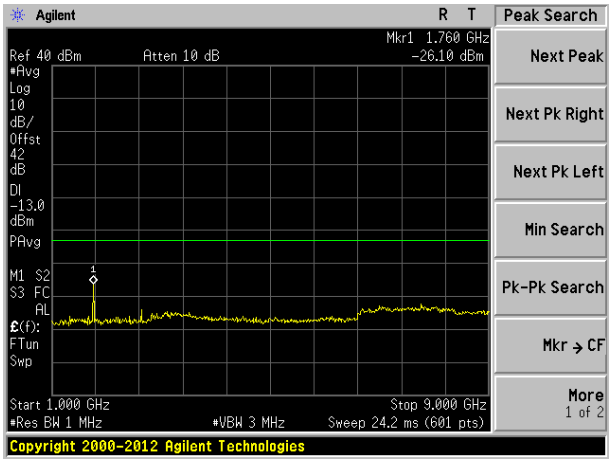


Middle channel

30MHz-1000MHz

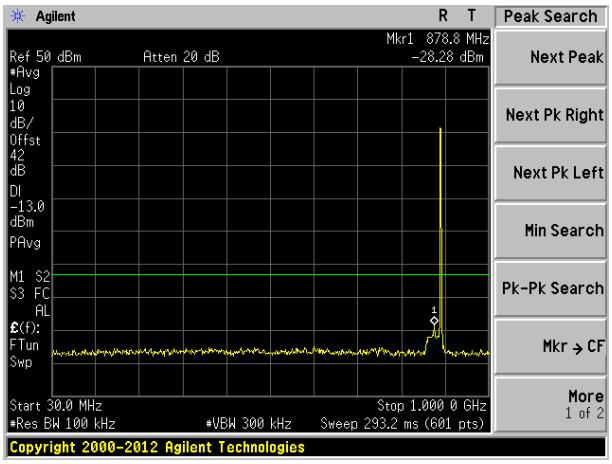


1000MHz-9000MHz

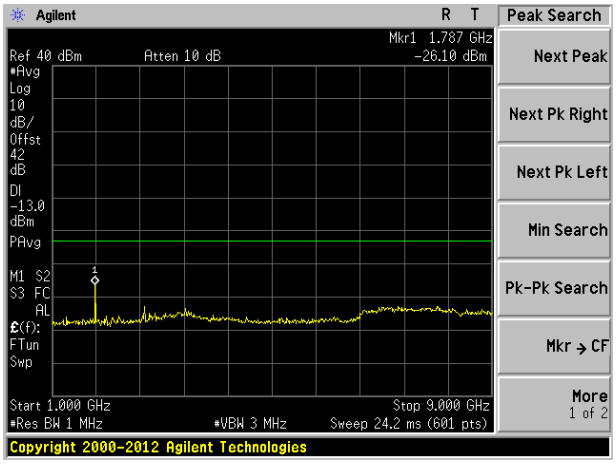


Highest channel

30MHz-1000MHz



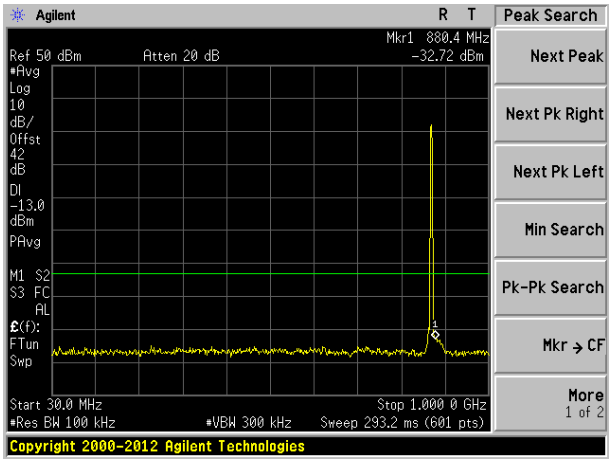
1000MHz-9000MHz



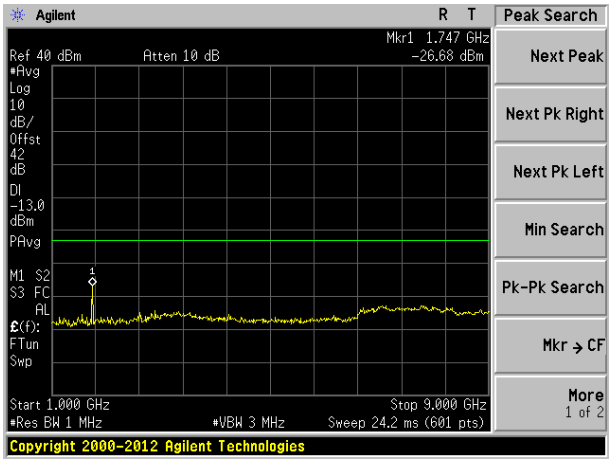
Spurious emission of WCDMA

Lowest channel

30MHz-1000MHz

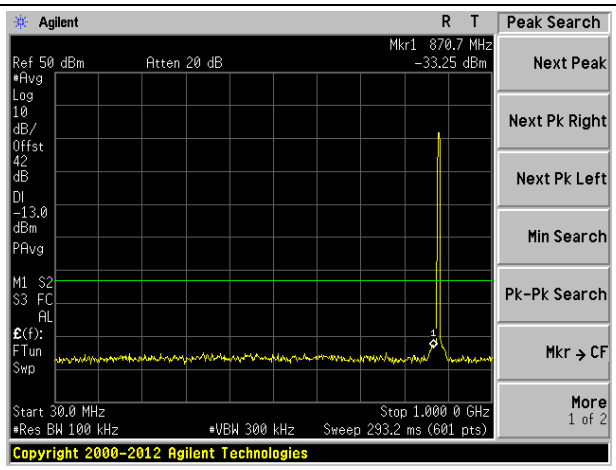


1000MHz-9000MHz

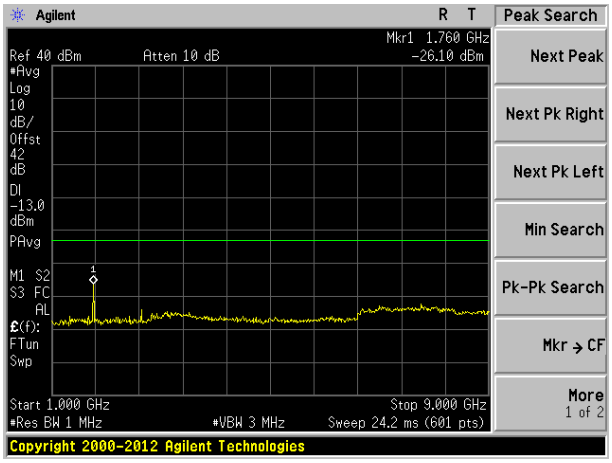


Middle channel

30MHz-1000MHz

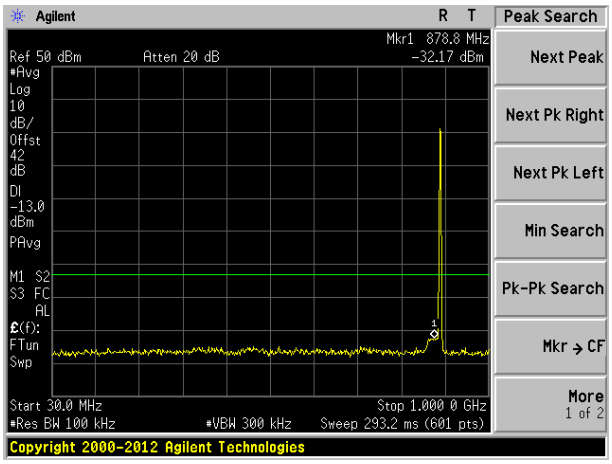


1000MHz-9000MHz

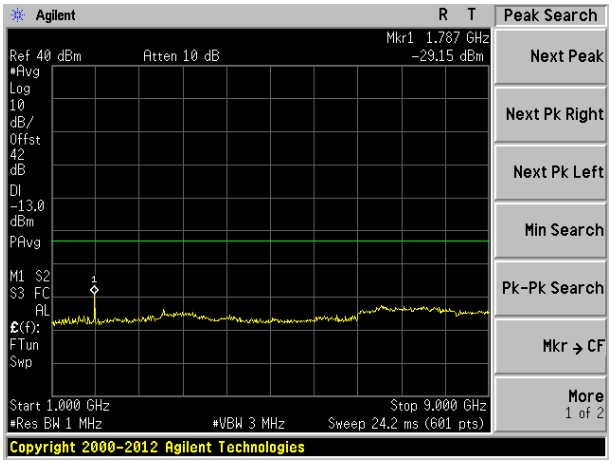


Highest channel

30MHz-1000MHz



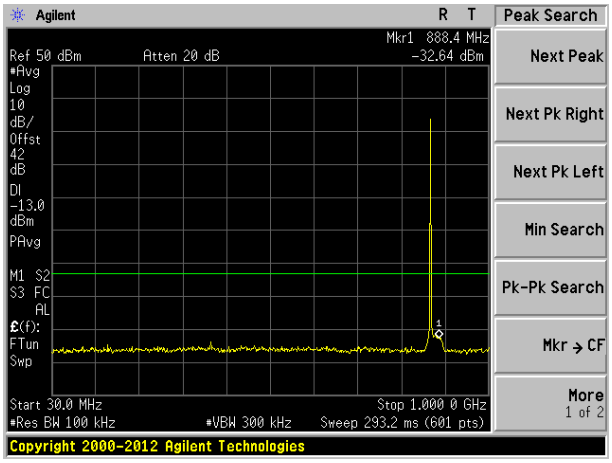
1000MHz-9000MHz



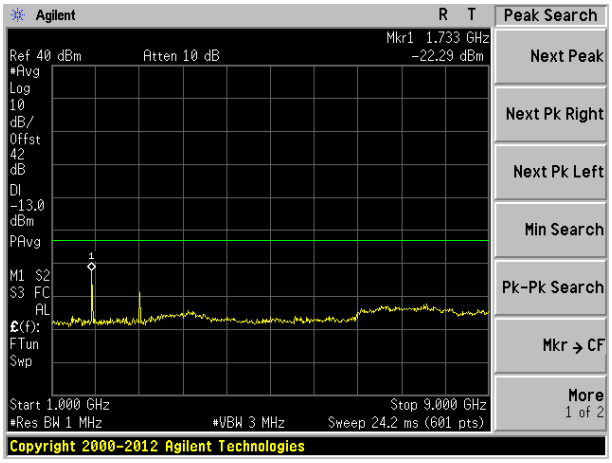
Spurious emission of LTE 1.4MHz Bandwidth

Lowest channel

30MHz-1000MHz

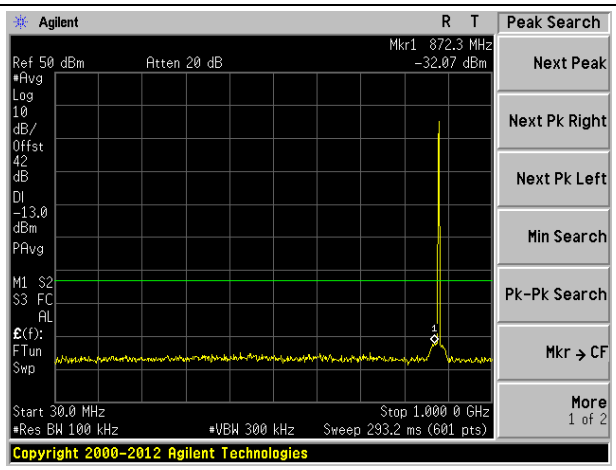


1000MHz-9000MHz

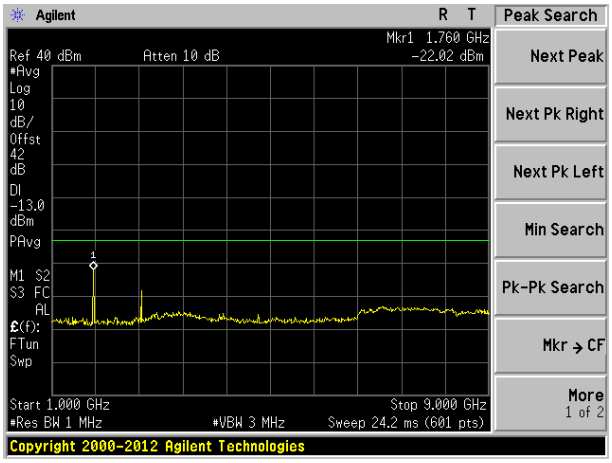


Middle channel

30MHz-1000MHz

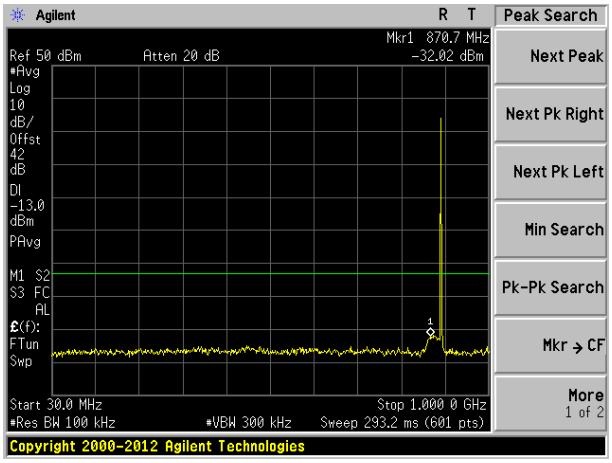


1000MHz-9000MHz

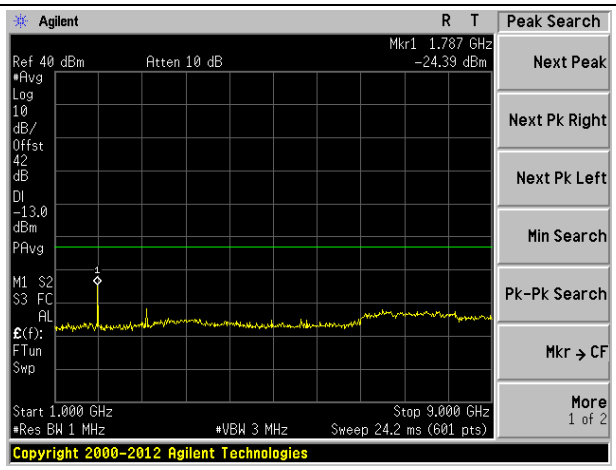


Highest channel

30MHz-1000MHz



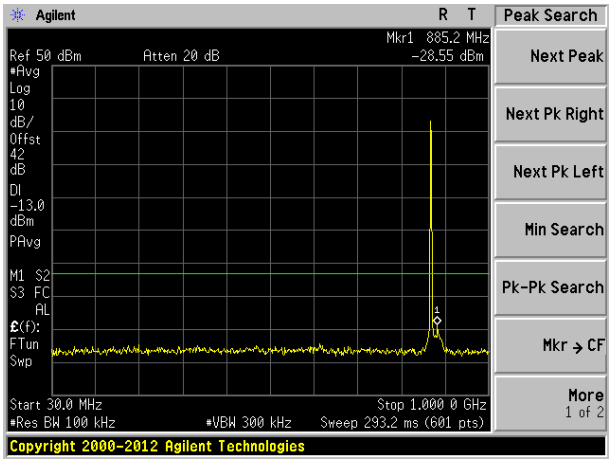
1000MHz-9000MHz



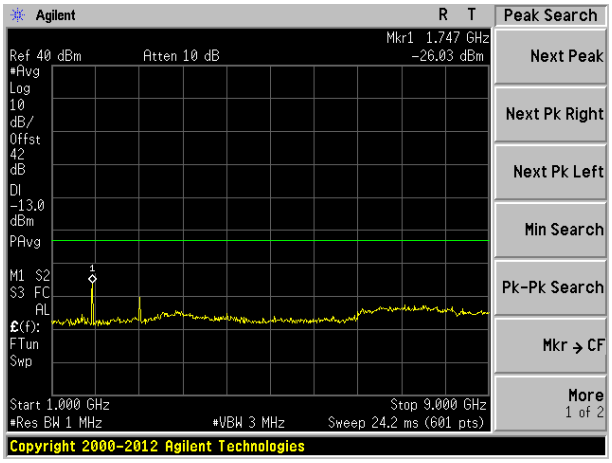
Spurious emission of LTE 3MHz Bandwidth

Lowest channel

30MHz-1000MHz

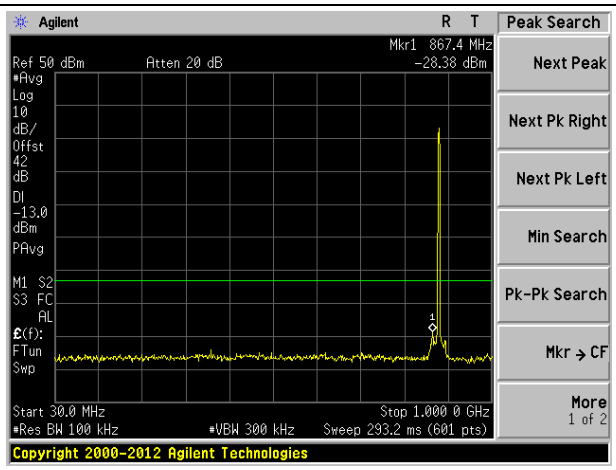


1000MHz-9000MHz

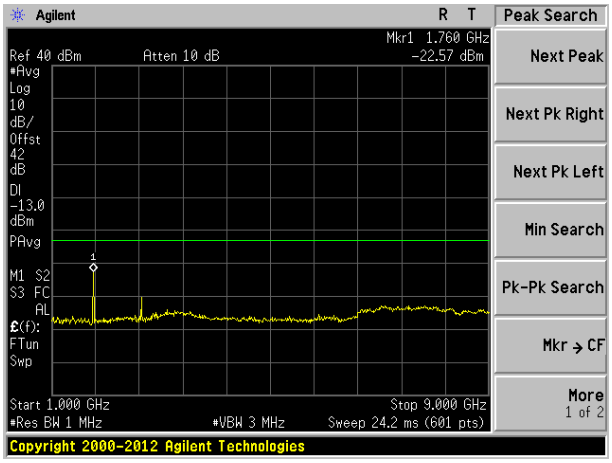


Middle channel

30MHz-1000MHz

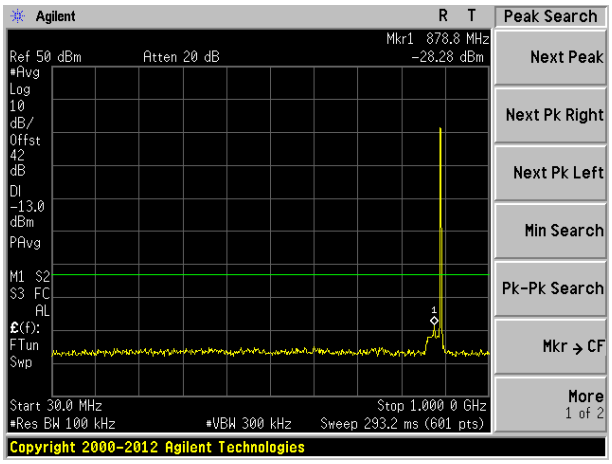


1000MHz-9000MHz

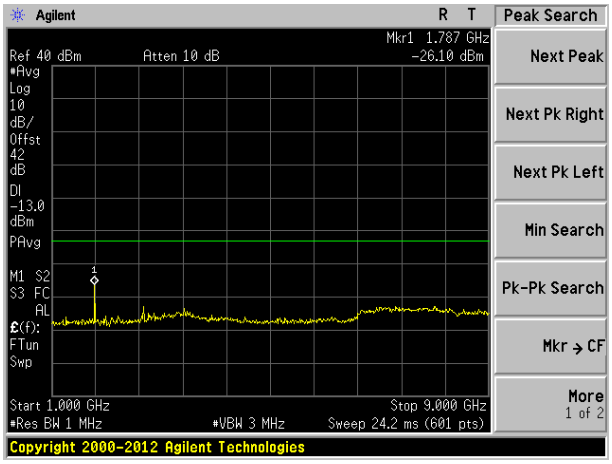


Highest channel

30MHz-1000MHz



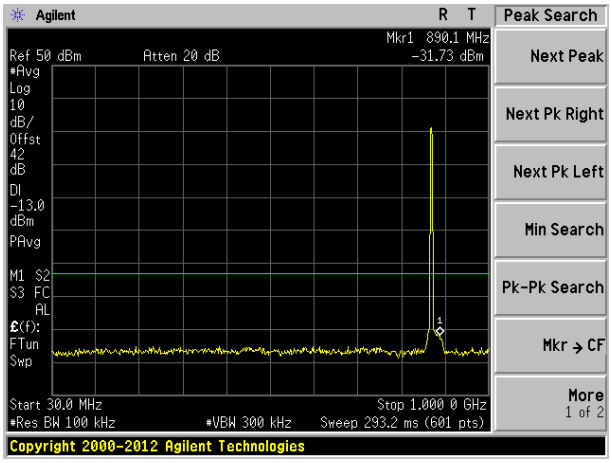
1000MHz-9000MHz



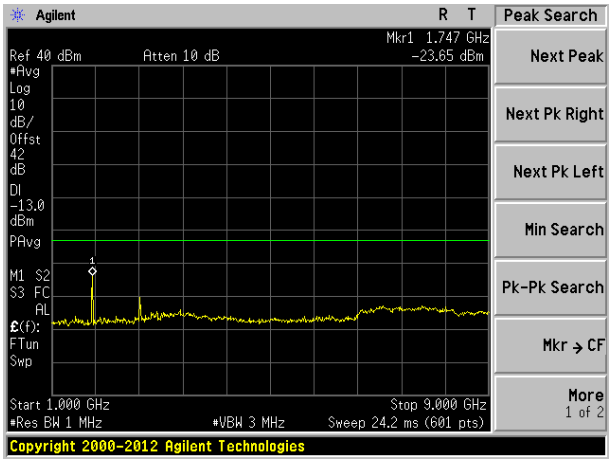
Spurious emission of LTE 5MHz Bandwidth

Lowest channel

30MHz-1000MHz

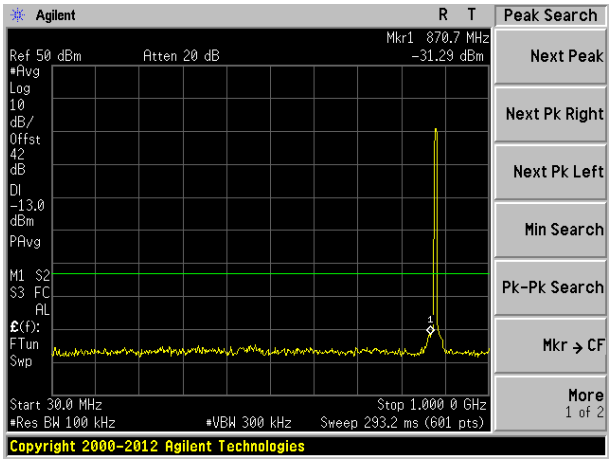


1000MHz-9000MHz

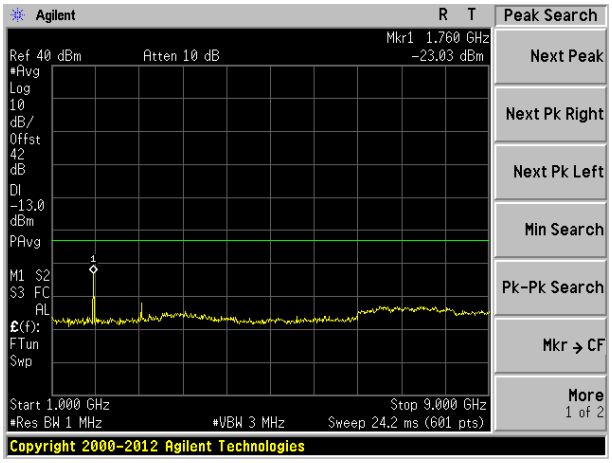


Middle channel

30MHz-1000MHz

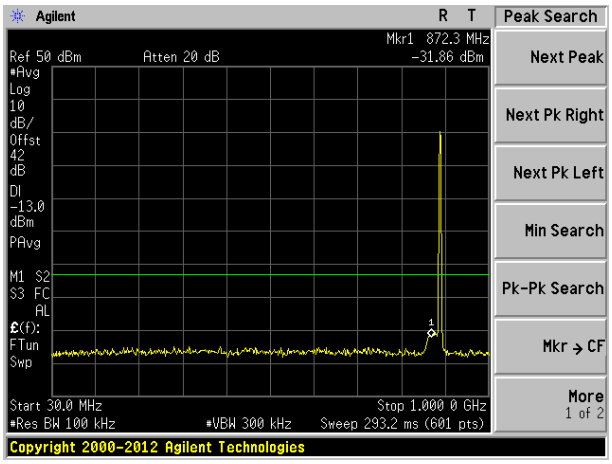


1000MHz-9000MHz

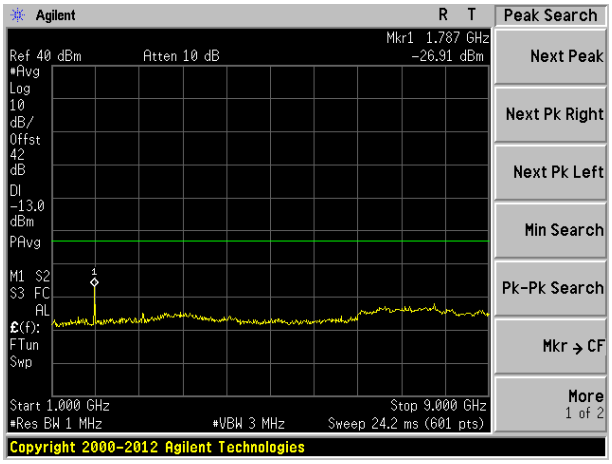


Highest channel

30MHz-1000MHz



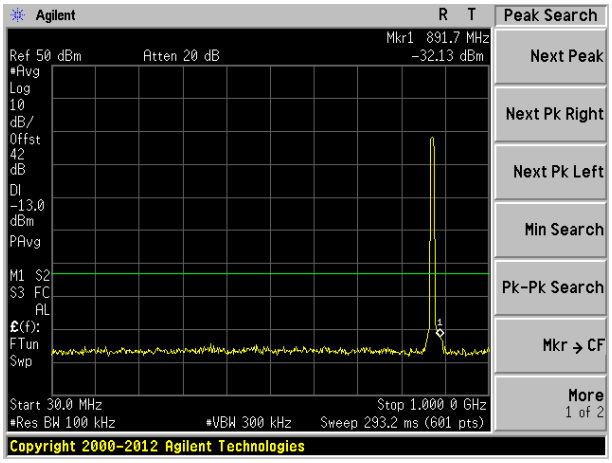
1000MHz-9000MHz



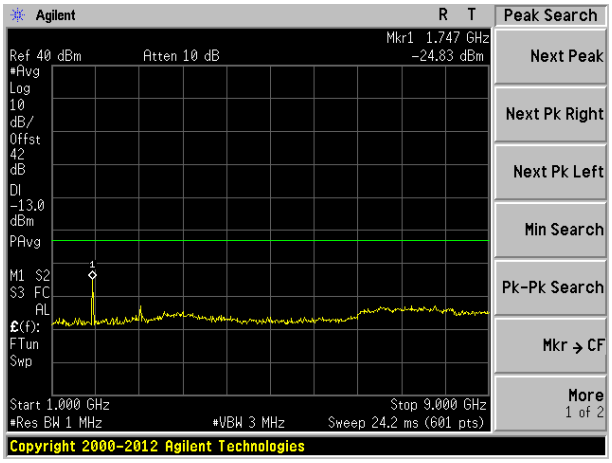
Spurious emission of LTE 10MHz Bandwidth

Lowest channel

30MHz-1000MHz

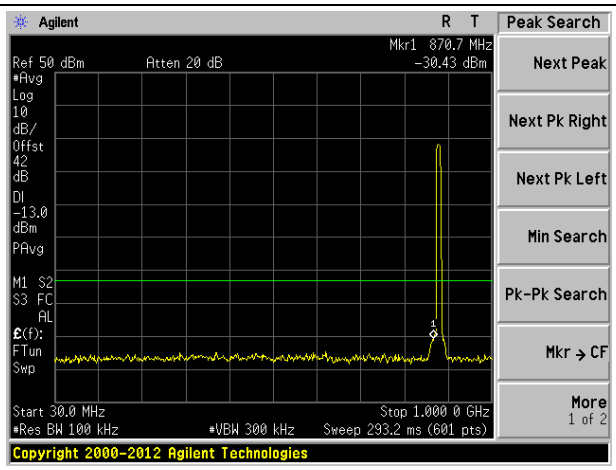


1000MHz-9000MHz

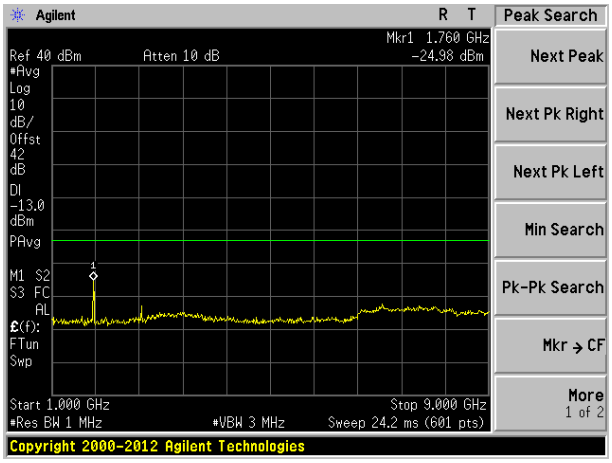


Middle channel

30MHz-1000MHz

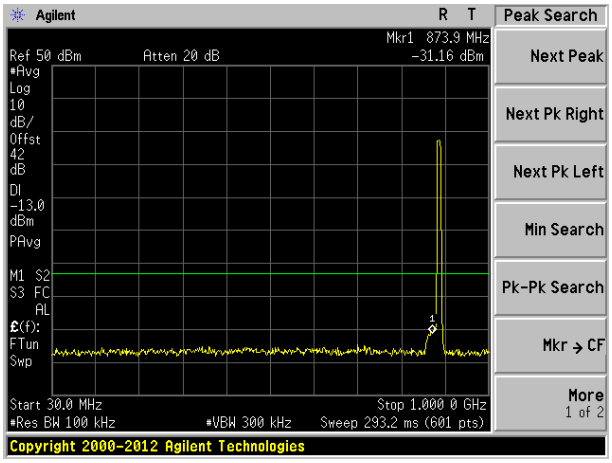


1000MHz-9000MHz

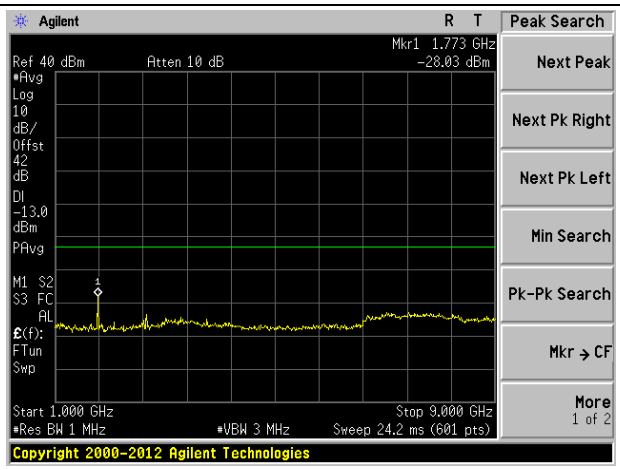


Highest channel

30MHz-1000MHz

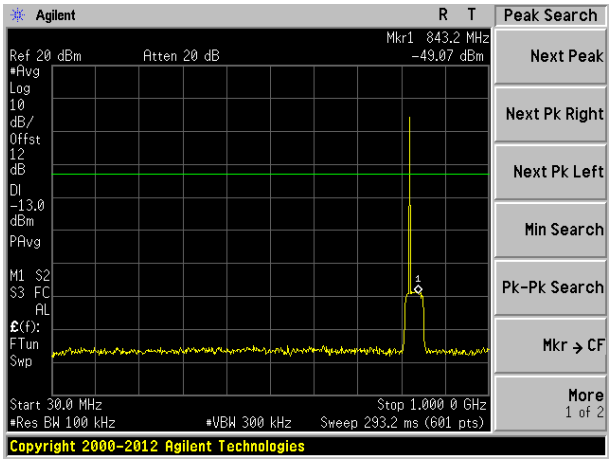
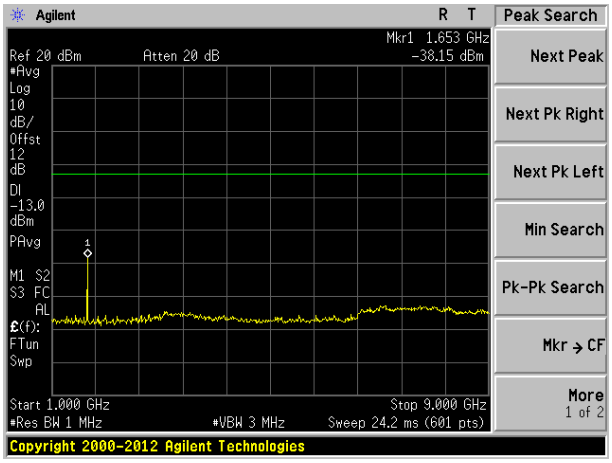
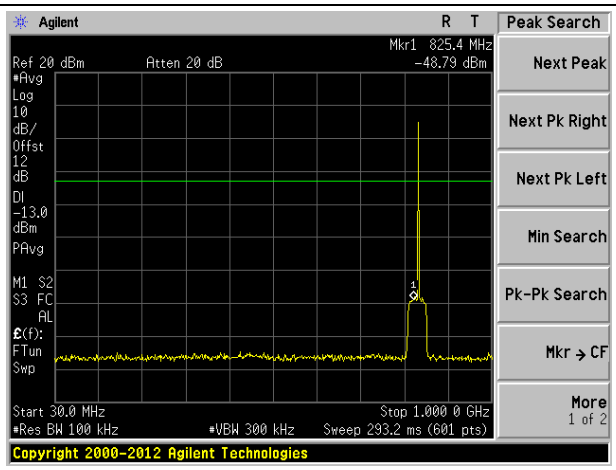


1000MHz-9000MHz

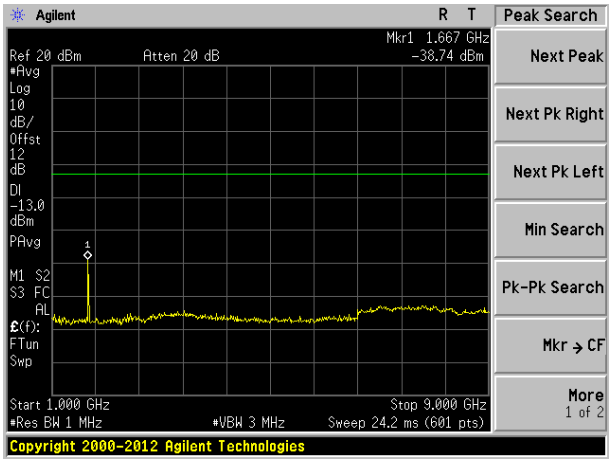


Uplink:

Spurious emission of GSM

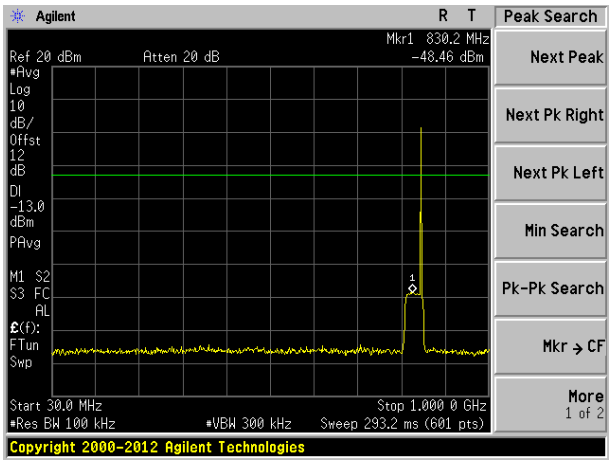
Lowest channel
30MHz-1000MHz

1000MHz-9000MHz

Middle channel
30MHz-1000MHz


1000MHz-9000MHz

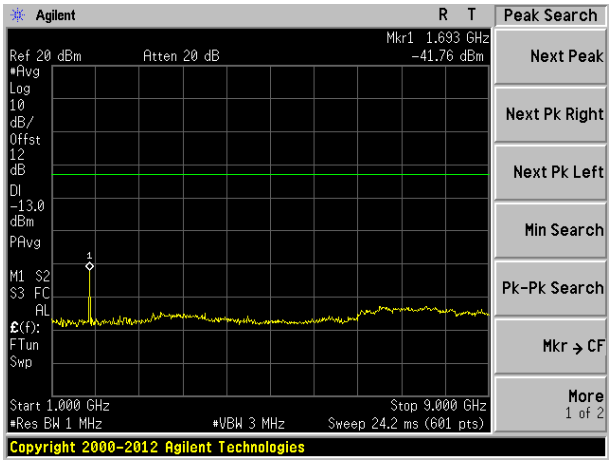


Highest channel

30MHz-1000MHz



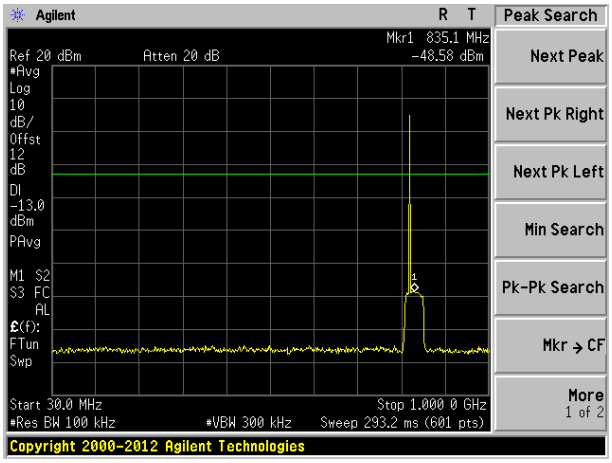
1000MHz-9000MHz



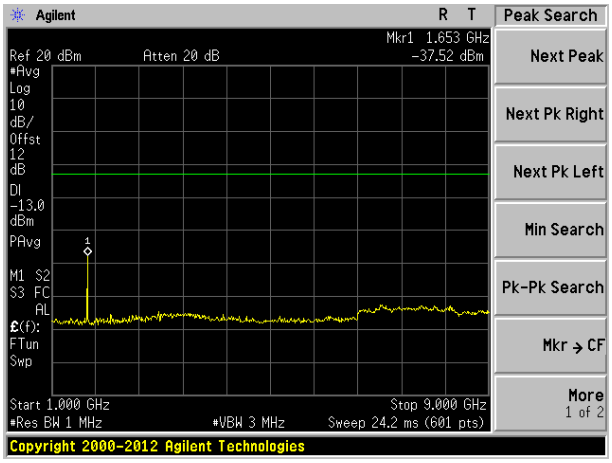
Spurious emission of EDGE

Lowest channel

30MHz-1000MHz

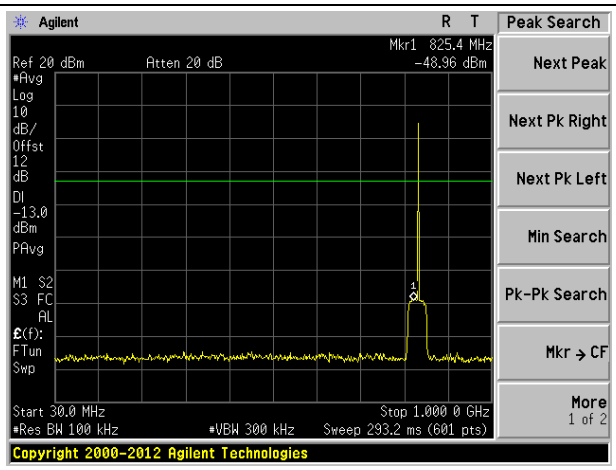


1000MHz-9000MHz

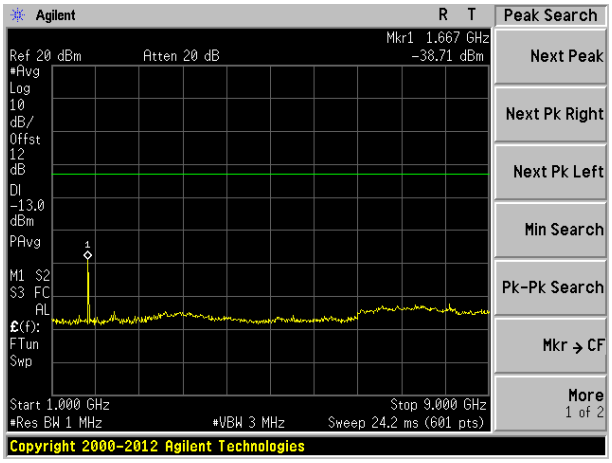


Middle channel

30MHz-1000MHz

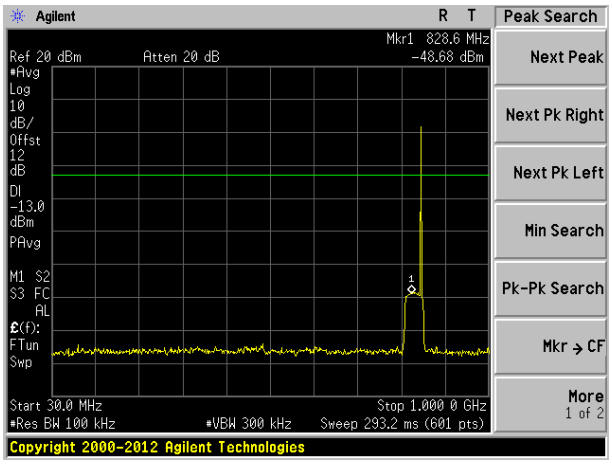


1000MHz-9000MHz

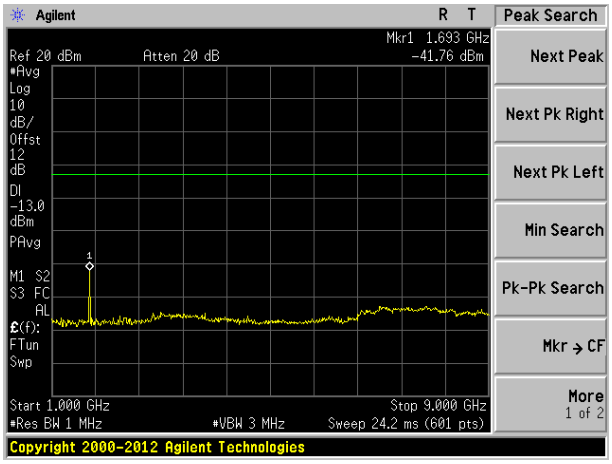


Highest channel

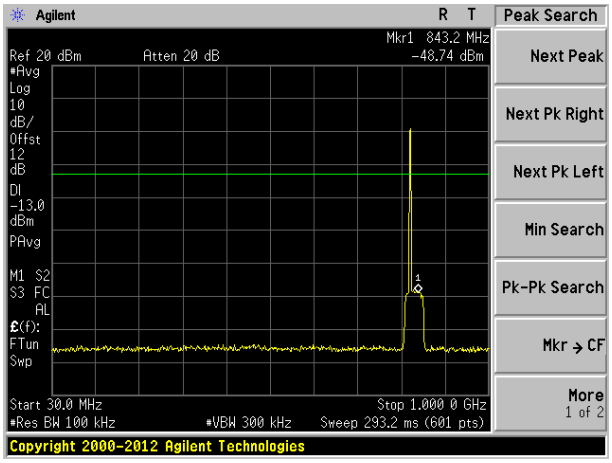
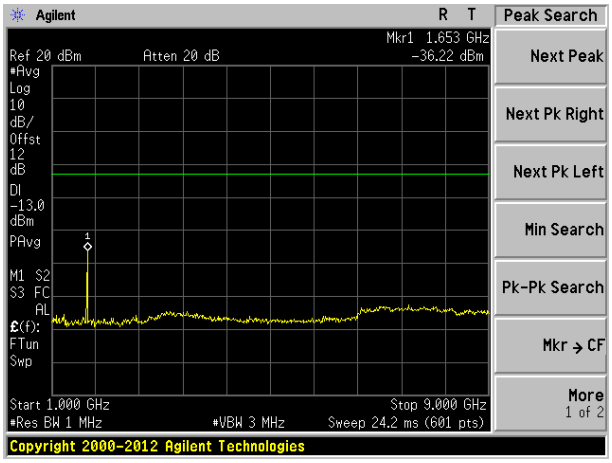
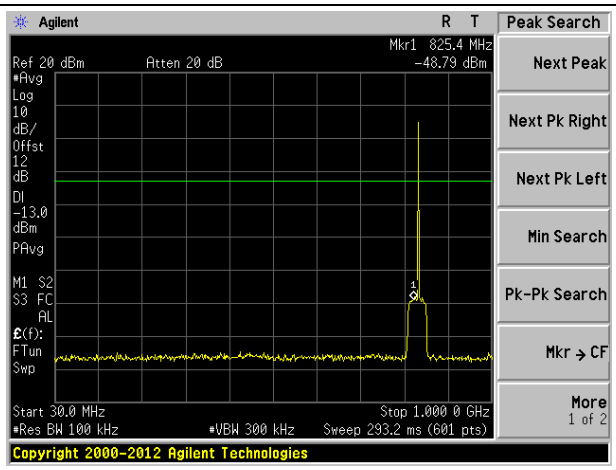
30MHz-1000MHz



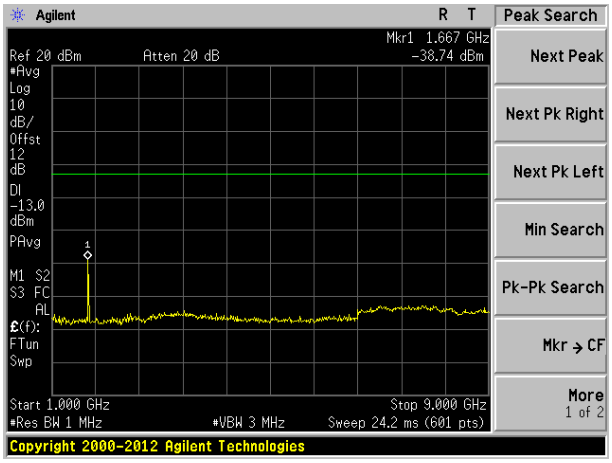
1000MHz-9000MHz



Spurious emission of CDMA

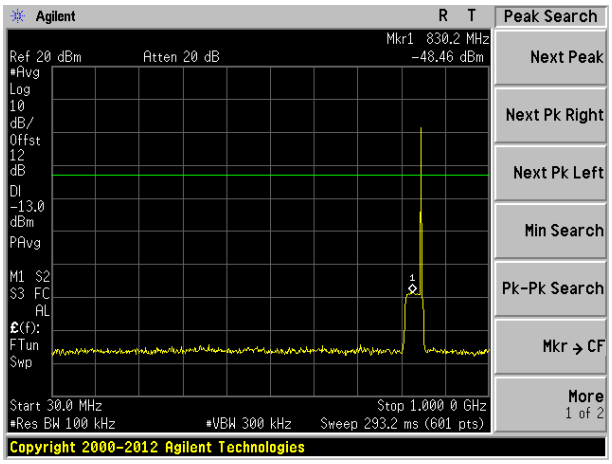
Lowest channel
30MHz-1000MHz

1000MHz-9000MHz

Middle channel
30MHz-1000MHz


1000MHz-9000MHz

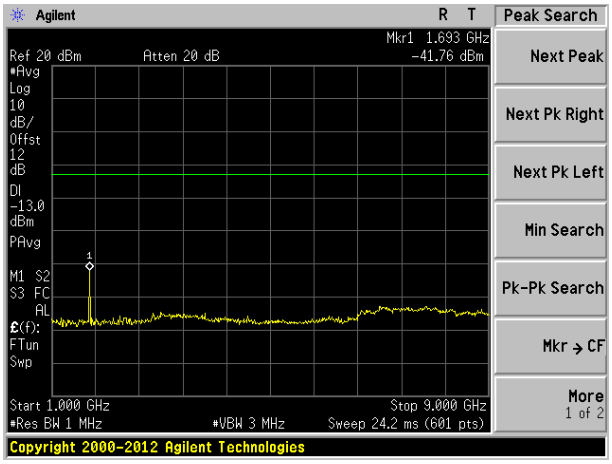


Highest channel

30MHz-1000MHz



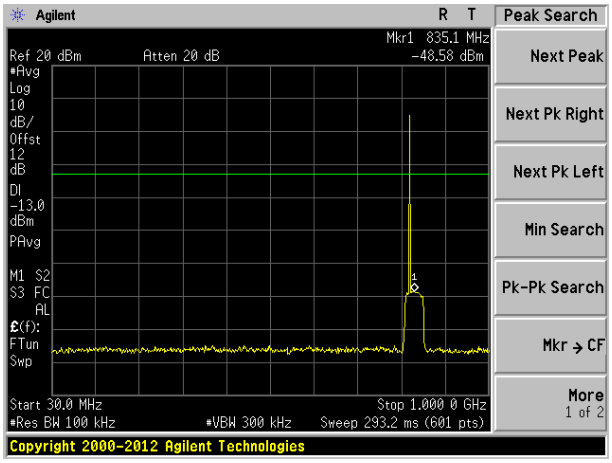
1000MHz-9000MHz



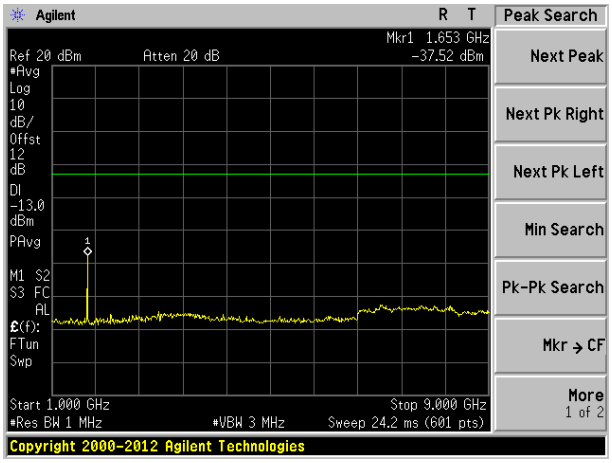
Spurious emission of CDMA-EVDO

Lowest channel

30MHz-1000MHz

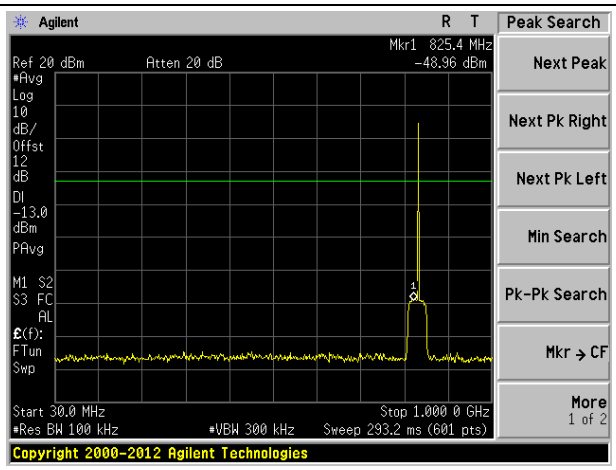


1000MHz-9000MHz

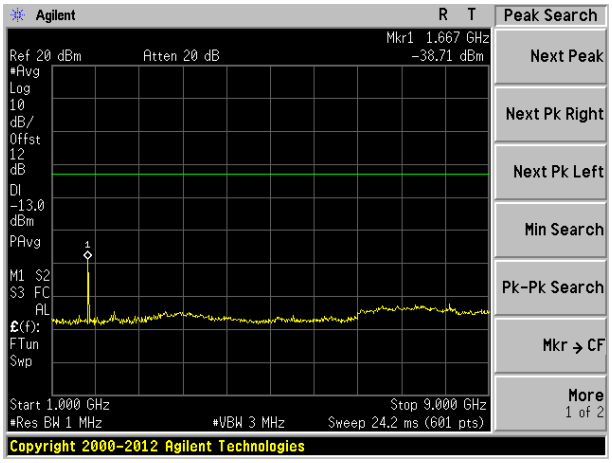


Middle channel

30MHz-1000MHz

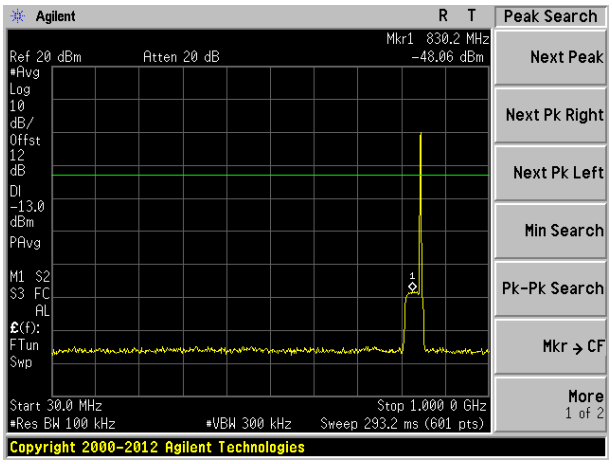


1000MHz-9000MHz

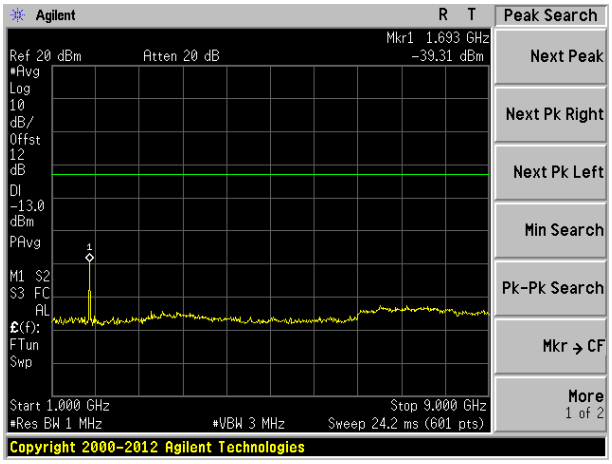


Highest channel

30MHz-1000MHz



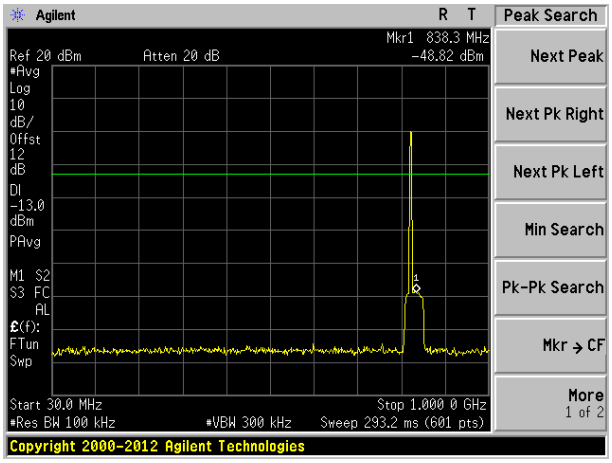
1000MHz-9000MHz



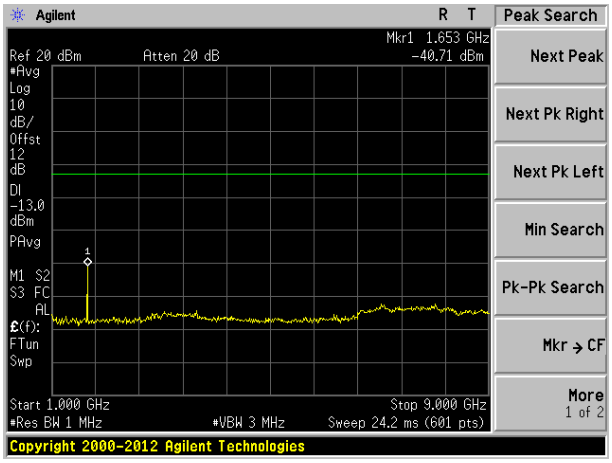
Spurious emission of WCDMA

Lowest channel

30MHz-1000MHz

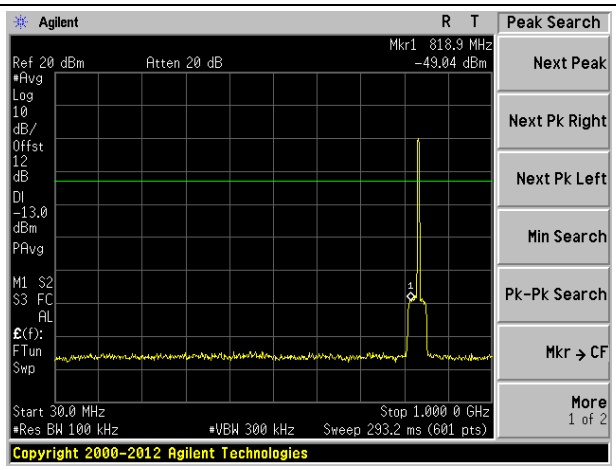


1000MHz-9000MHz

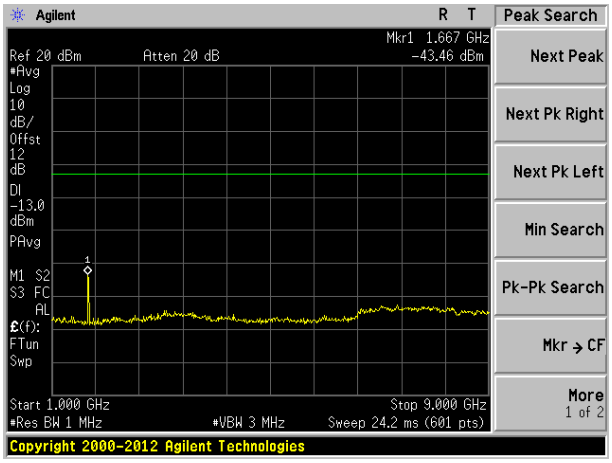


Middle channel

30MHz-1000MHz

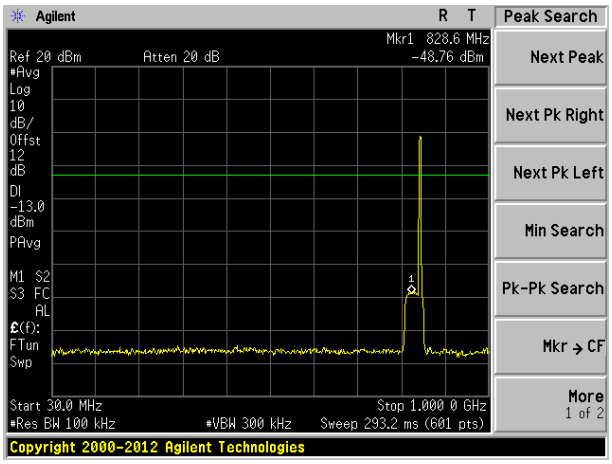


1000MHz-9000MHz

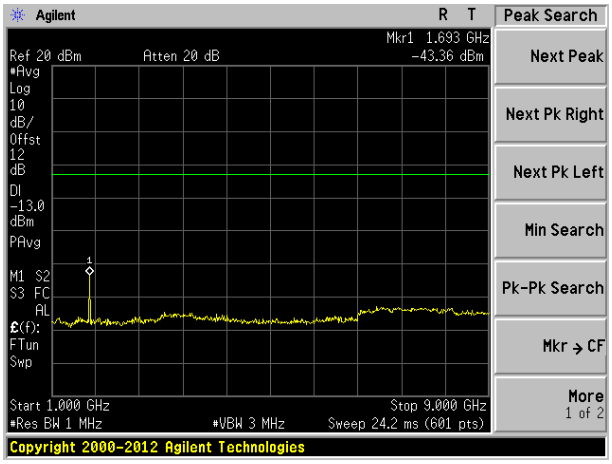


Highest channel

30MHz-1000MHz



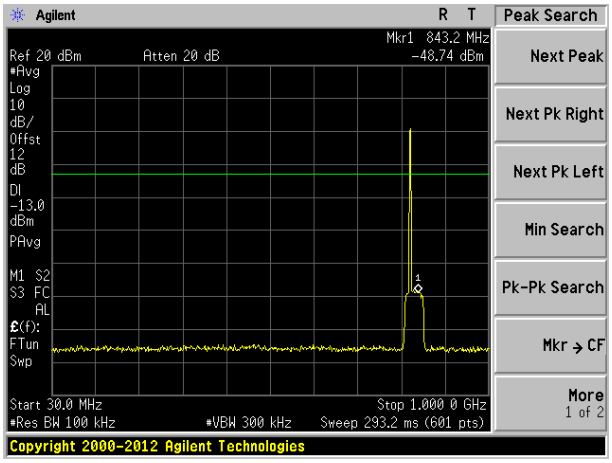
1000MHz-9000MHz



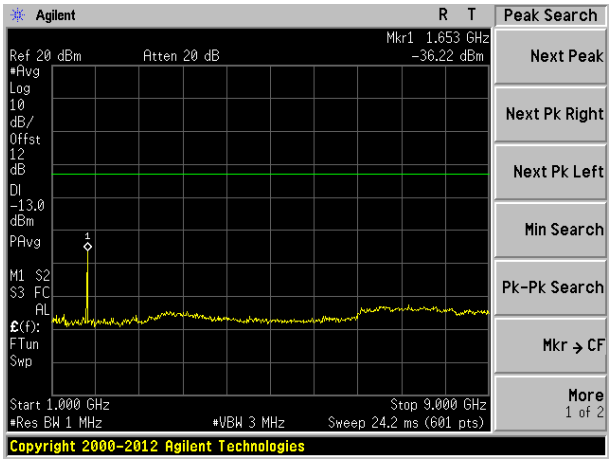
Spurious emission of LTE 1.4MHz Bandwidth

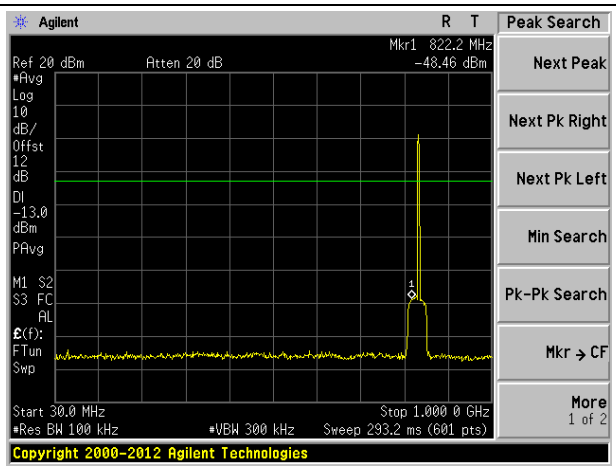
Lowest channel

30MHz-1000MHz



1000MHz-9000MHz



Middle channel

30MHz-1000MHz