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-CM RUM
Model No.:	mBSC0850i-005-RUCM11, mBSC0850i-002-RUCM11
Trade Mark:	BTI WIRELESS™
FCC ID:	WBKMBSC850IRUM
Applicable standards:	FCC CFR Title 47 Part 2:2016 FCC CFR Title 47 Part 90 Subpart S: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

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		

3 Contents

Page

4 Test Summary

Test Item	Test Description	Result
Maximum Permissible Exposure(MPE)	§ 1.1307(b)(1), § 2.1091	PASS* (Please refer to MPE Report)
Effective radiated power (ERP).	§ 2.1046; § 90.635	PASS
Modulation Characteristics	§ 2.1047	N/A*
Passband Gain and Occupied Bandwidth	§ 2.1049	PASS
Spurious Emissions at Antenna Terminal	§ 2.1051; § 90.691	PASS
Intermodulation	§ 2.1051; § 90.691	PASS
Field Strength of Spurious Radiation	§ 2.1053; § 90.691	PASS
Out of Band Emission, Band Edge	§ 90.219(d); § 90.691	PASS
Frequency Stability vs. Temperature Frequency Stability vs. Voltage	§ 2.1055; § 90.213	PASS
Measuring the EUT AGC threshold	---	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-CM RUM	
Model No.:	mBSC0850i-005-RUCM11, mBSC0850i-002-RUCM11	
Power supply:	RPM: Input: AC 120V/60Hz RUM: DC 28V, 3A Max RTM: Input DC 28V / 2.2A Normal test voltage: AC 120V/60Hz	
Operating Temperature:	-20℃ to + 55℃	
Operating Humidity:	up to 95%	
Technical Parameter:		
Frequency Range	Downlink	862MHz~869MHz
	Uplink	817MHz~824MHz
Operating Bandwidth	7MHz	
Channel Spacing(s) / Bandwidth(s)	CDMA: 1.25MHz; LTE: 1.4M,3M,5M;	
Maximun RF Output Power	Downlink: 37.31dBm(For 5W); 33.67dBm(For 2W); Uplink: 5.42dBm(For 5W); 5.33dBm(For 2W);	
Max Gain	Downlink: 54.35dB; Uplink: 62.31dB	
Type of modulation and Designator	CDMA(F9W), LTE(W7D);	
Antenna Type	External antenna (N female)	
Antenna Gain	Maximum permissible antenna gain is 17dBi	

5.3 Related Submittal(s) / Grant (s)

Title 47 Part 2	General Requirements and Information for the Certification of Radio Apparatus
Title 47 Part 90	PRIVATE LAND MOBILE RADIO SERVICES

5.4 Test Methodology

Title 47 Part 2	General Requirements and Information for the Certification of Radio Apparatus
Title 47 Part 90	PRIVATE LAND MOBILE RADIO SERVICES
ANSI C63.4: 2014	Methods of Measurement of Radio-Noise Emissions from Low Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz
KDB	AMPLIFIER, BOOSTER, AND REPEATER REMINDER SHEET PART 90 700/800 BANDS INDUSTRIAL BOOSTERS REQUIREMENTS SUMMARY
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 Description of Support Units

Manufacturer	Description	Model	Serial Number
BTI	RTM	mBSC1430-RTM-5SW	N/A

5.6 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.

5.7 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

5.8 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. 25 2017
8	Coaxial Cable	GTS	N/A	GTS211	Mar. 26 2016	Mar. 25 2017
9	Coaxial cable	GTS	N/A	GTS210	Mar. 26 2016	Mar. 25 2017
10	Coaxial Cable	GTS	N/A	GTS212	Mar. 26 2016	Mar. 25 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 Reflection Meter	Rohde & Schwarz	NRT	100540	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 09 2014	May 08 2016
31	Noise Figure Analyzer	Agilent	N8973A	GB42151304	May 09 2014	May 08 2016

6 TEST CONFIGURATION AND CONDITIONS

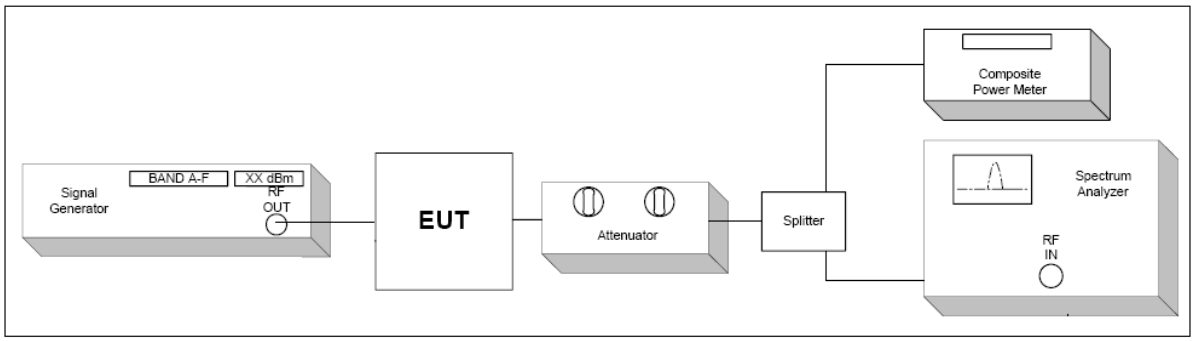
6.1 EUT Configuration

This mBSC0850i-005-RUCM11； mBSC0850i-002-RUCM11 are the Remote Unit on BTI CM system. This remote unit supports 850MHz band with the air standard CDMA and LTE. The unit consists of Duplexer, PA and CPU board. This product is designed to operate in an outdoor or indoor environment. The conducted output power of the RUM at Antenna interface port is average 37.31dBm (for 5W) and 33.67dBm (for 2W) Downlink path with Convection Cooling.

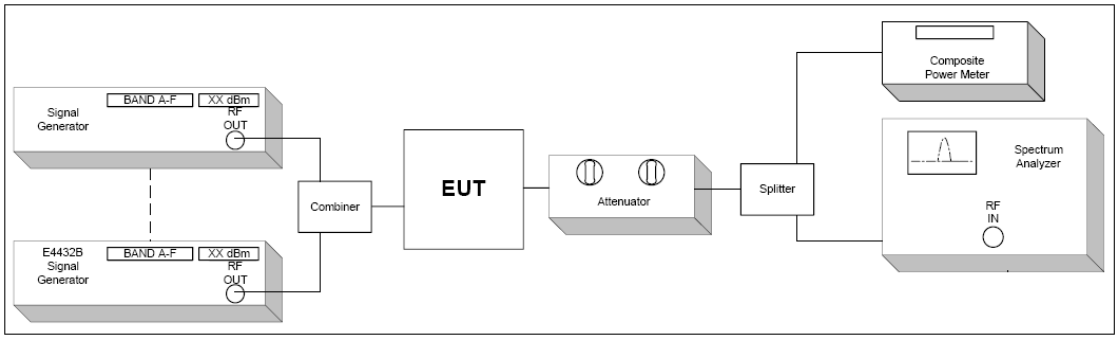
For details, refer to technical document and the user manual.

6.2 Configuration of Tested System

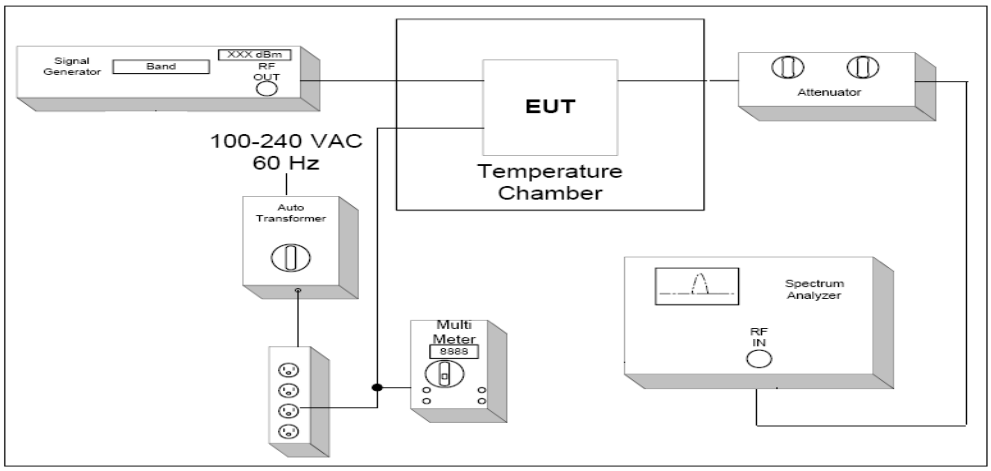
(A) RF Output Power, Occupied Bandwidth, Spurious Emissions at Antenna Terminal, Band Edge, Emission Mask , Noise Test Set-UP



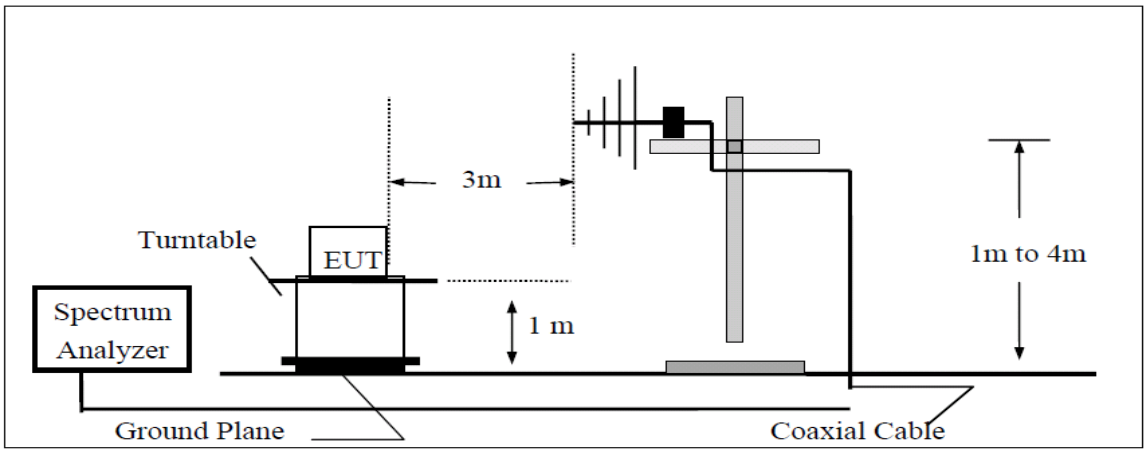
(B) Intermodulation Test Set-UP



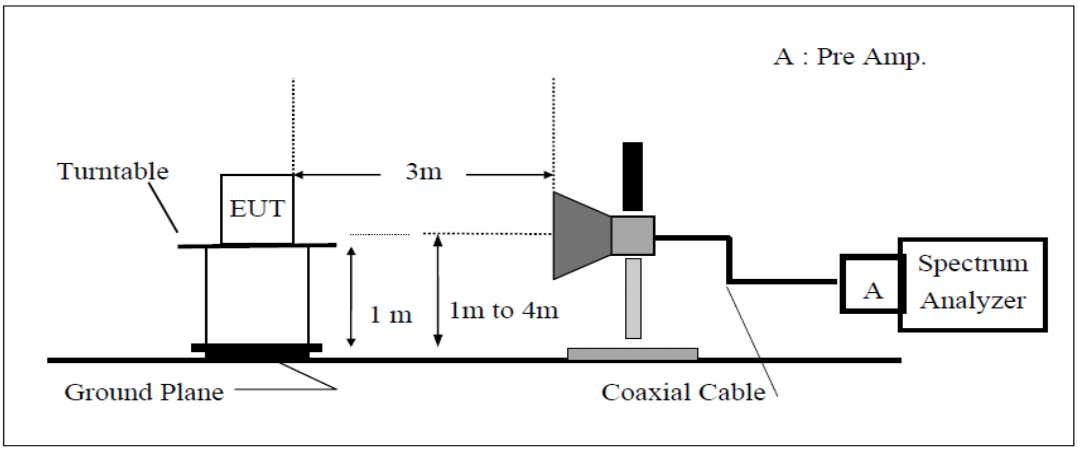
(C)Frequency stability Test Set-UP



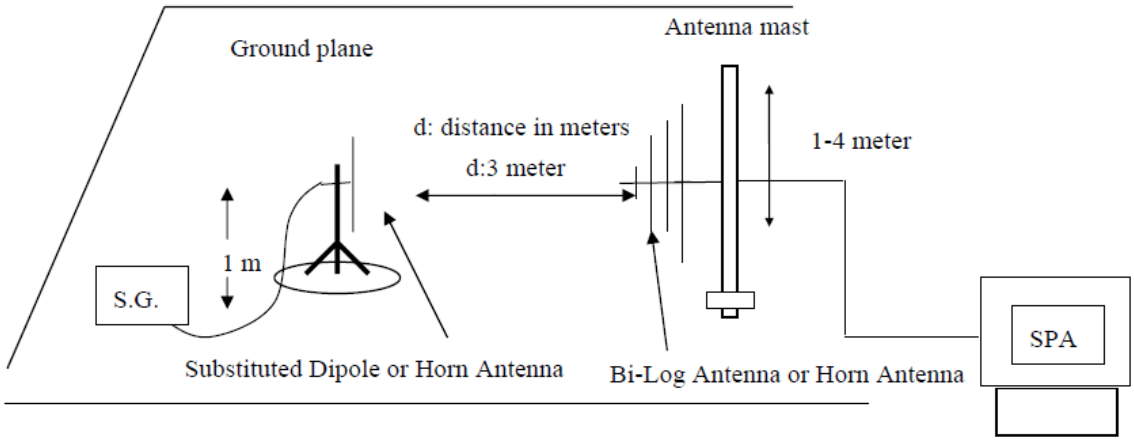
(D) Radiated Emission Test Set-Up, Frequency below 1000MHz



(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 frequency selection

Downlink:

Operating Mode(TX)	Channels No. Multi- Carriers	Channels frequency (MHz)		
		Low Ch.	Mid Ch.	High Ch.
CDMA	Single Carrier	863.25	865.50	867.75
LTE 1.4MHz Bandwidth	Single Carrier	862.70	865.50	868.30
LTE 3MHz Bandwidth	Single Carrier	863.50	865.50	867.50
LTE 5MHz Bandwidth	Single Carrier	---	865.50	---

Uplink:

Operating Mode(TX)	Channels No. Multi- Carriers	Channels frequency (MHz)		
		Low Ch.	Mid Ch.	High Ch.
CDMA	Single Carrier	818.25	820.50	822.75
LTE 1.4MHz Bandwidth	Single Carrier	817.70	820.50	823.30
LTE 3MHz Bandwidth	Single Carrier	818.50	820.50	822.50
LTE 5MHz Bandwidth	Single Carrier	---	820.50	---

6.5 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)
Modulation type	CDMA and 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 CDMA and 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.

5: All testing is end-to-end (input to host through to output from remote, and vice-versa)

7 RF POWER OUTPUT(ERP) MEASUREMENT

7.1 Standard Applicable

According to FCC § 2.1046 and § 90.635

Stations with antennas below 305 m (1,000 ft) (AAT) will be restricted to a maximum power of 1 kw (ERP).

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 CDMA and LTE signal.

7.4 Test Result

5W

Downlink:

Test mode	Carrier Conf.	Channel	Average Power （dBm）	Average Power （W）	RF Output Power(W/MHz)	Result
WCDMA	Single Carrier	Low	37.16	5.20	1.04	Compliant
		Middle	37.31	5.38	1.08	Compliant
		High	37.06	5.08	1.02	Compliant
LTE 1.4MHz Bandwidth	Single Carrier	Low	37.10	5.13	3.66	Compliant
		Middle	37.28	5.35	3.82	Compliant
		High	37.15	5.19	3.71	Compliant
LTE 3MHz Bandwidth	Single Carrier	Low	37.12	5.15	1.72	Compliant
		Middle	37.25	5.31	1.77	Compliant
		High	37.07	5.09	1.70	Compliant
LTE 5MHz Bandwidth	Single Carrier	Low	---	---	---	---
		Middle	37.23	5.28	1.06	Compliant
		High	---	---	---	---

Uplink:

Test mode	Carrier Conf.	Channel	Average Power （dBm）	Average Power （W）	RF Output Power(W/MHz)	Result
WCDMA	Single Carrier	Low	5.31	0.0034	0.0007	Compliant
		Middle	5.42	0.0035	0.0007	Compliant
		High	5.28	0.0034	0.0007	Compliant
LTE 1.4MHz Bandwidth	Single Carrier	Low	5.25	0.0033	0.0024	Compliant
		Middle	5.38	0.0035	0.0025	Compliant
		High	5.23	0.0033	0.0024	Compliant
LTE 3MHz Bandwidth	Single Carrier	Low	5.21	0.0033	0.0011	Compliant
		Middle	5.34	0.0034	0.0011	Compliant
		High	5.20	0.0033	0.0011	Compliant
LTE 5MHz Bandwidth	Single Carrier	Low	---	---	---	---
		Middle	5.35	0.0034	0.0007	Compliant
		High	---	---	---	---

2W

Downlink:

Test mode	Carrier Conf.	Channel	Average Power （dBm）	Average Power （W）	RF Output Power(W/MHz)	Result
WCDMA	Single Carrier	Low	33.54	2.26	0.45	Compliant
		Middle	33.67	2.33	0.47	Compliant
		High	33.46	2.22	0.44	Compliant
LTE 1.4MHz Bandwidth	Single Carrier	Low	33.51	2.24	1.60	Compliant
		Middle	33.62	2.30	1.64	Compliant
		High	33.47	2.22	1.59	Compliant
LTE 3MHz Bandwidth	Single Carrier	Low	33.50	2.24	0.75	Compliant
		Middle	33.61	2.30	0.77	Compliant
		High	33.42	2.20	0.73	Compliant
LTE 5MHz Bandwidth	Single Carrier	Low	---	---	---	---
		Middle	33.57	2.28	0.46	Compliant
		High	---	---	---	---

Uplink:

Test mode	Carrier Conf.	Channel	Average Power （dBm）	Average Power （W）	RF Output Power(W/MHz)	Result
WCDMA	Single Carrier	Low	5.21	0.0033	0.0007	Compliant
		Middle	5.33	0.0034	0.0007	Compliant
		High	5.16	0.0033	0.0007	Compliant
LTE 1.4MHz Bandwidth	Single Carrier	Low	5.17	0.0033	0.0023	Compliant
		Middle	5.28	0.0034	0.0024	Compliant
		High	5.13	0.0033	0.0023	Compliant
LTE 3MHz Bandwidth	Single Carrier	Low	5.19	0.0033	0.0011	Compliant
		Middle	5.29	0.0034	0.0011	Compliant
		High	5.24	0.0033	0.0011	Compliant
LTE 5MHz Bandwidth	Single Carrier	Low	---	---	---	---
		Middle	5.30	0.0034	0.0007	Compliant
		High	---	---	---	---

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.		
CDMA	Single Carrier	6.12	6.35	6..47	13	Compliant
LTE 1.4MHz Bandwidth	Single Carrier	7.64	7.57	7.96	13	Compliant
LTE 3MHz Bandwidth	Single Carrier	7.58	7.85	7.42	13	Compliant
LTE 5MHz Bandwidth	Single Carrier	7.65	7.55	7.53	13	Compliant

Uplink:

Test mode	Carrier Conf.	Peak to Average Ratio (dB)			Limit (dB)	Result
		Low Ch.	Middle Ch.	High Ch.		
CDMA	Single Carrier	6.25	6.38	6.54	13	Compliant
LTE 1.4MHz Bandwidth	Single Carrier	7.59	7.38	7.45	13	Compliant
LTE 3MHz Bandwidth	Single Carrier	7.38	7.39	7.52	13	Compliant
LTE 5MHz Bandwidth	Single Carrier	7.42	7.41	7.60	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.	
CDMA	Single Carrier	39.15	39.26	39.20	Compliant
LTE 1.4MHz Bandwidth	Single Carrier	39.12	39.21	39.13	Compliant
LTE 3MHz Bandwidth	Single Carrier	39.11	39.27	39.15	Compliant
LTE 5MHz Bandwidth	Single Carrier	39.01	39.24	39.02	Compliant

Uplink:

Test mode	Carrier Conf.	AGC threshold level （dB）			Result
		Low Ch.	Middle Ch.	High Ch.	
CDMA	Single Carrier	7.45	7.59	7.38	Compliant
LTE 1.4MHz Bandwidth	Single Carrier	7.31	7.55	7.42	Compliant
LTE 3MHz Bandwidth	Single Carrier	7.42	7.51	7.39	Compliant
LTE 5MHz Bandwidth	Single Carrier	7.28	7.49	7.35	Compliant

9 PASSBAND GAIN AND OCCUPIED BANDWIDTH

9.1 Standard Applicable

According to FCC § 2.1049

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.

iDEN: RBW= 300Hz, VBW≥RBW, Sweep: Auto

C4FM/Analog FM: RBW= 100Hz, VBW≥RBW, Sweep: Auto

9.4 Test Result

Pass band Gain

Downlink:

Test mode	Carrier Conf.	Channel	Pass band Gain (dB)	Nominal Gain (dB)	Result
CDMA	Single Carrier	Low	54.24	54±0.5	Compliant
		Middle	54.35		Compliant
		High	54.26		Compliant
LTE 1.4MHz Bandwidth	Single Carrier	Low	54.20		Compliant
		Middle	54.33		Compliant
		High	54.21		Compliant
LTE 3MHz Bandwidth	Single Carrier	Low	54.08		Compliant
		Middle	54.24		Compliant
		High	54.13		Compliant
LTE 5MHz Bandwidth	Single Carrier	Low	54.11		Compliant
		Middle	54.25		Compliant
		High	54.09		Compliant

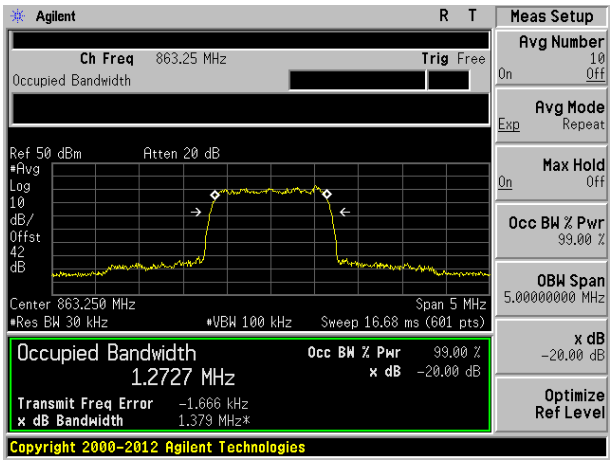
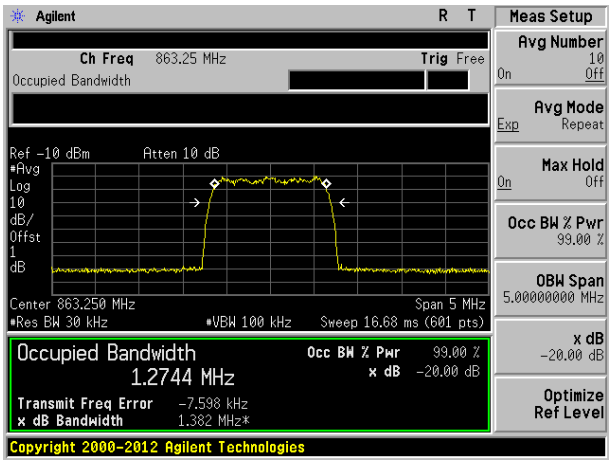
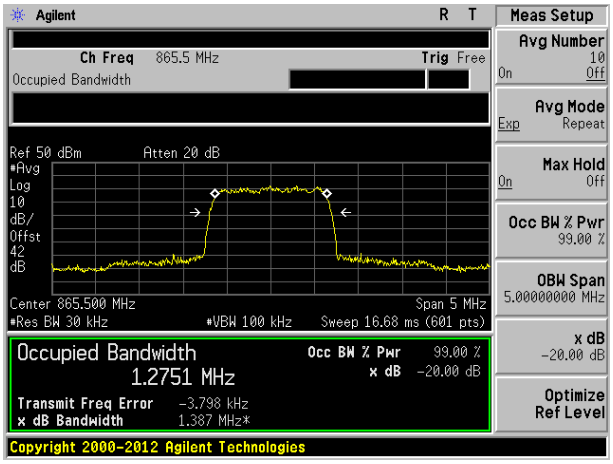
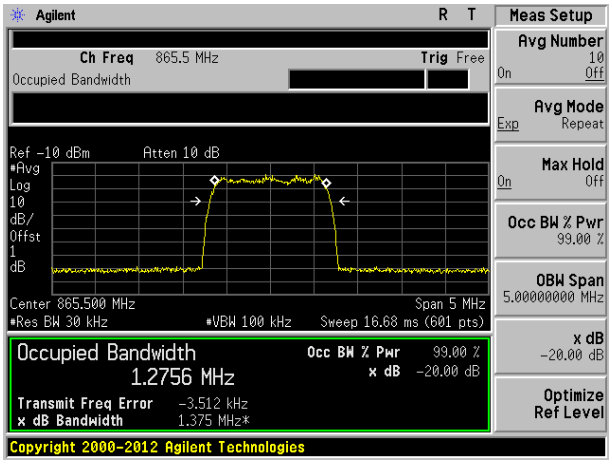
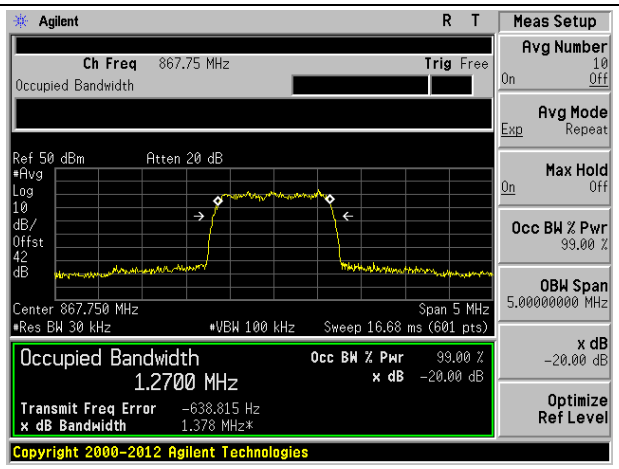
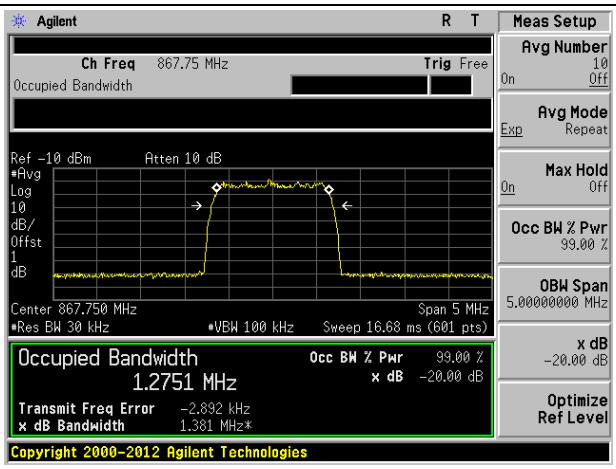
Uplink:

Test mode	Carrier Conf.	Channel	Pass band Gain (dB)	Nominal Gain (dB)	Result
CDMA	Single Carrier	Low	62.24	62±0.5	Compliant
		Middle	62.31		Compliant
		High	62.17		Compliant
LTE 1.4MHz Bandwidth	Single Carrier	Low	62.10		Compliant
		Middle	62.27		Compliant
		High	62.11		Compliant
LTE 3MHz Bandwidth	Single Carrier	Low	62.15		Compliant
		Middle	62.26		Compliant
		High	62.03		Compliant
LTE 5MHz Bandwidth	Single Carrier	Low	62.12		Compliant
		Middle	62.23		Compliant
		High	62.06		Compliant

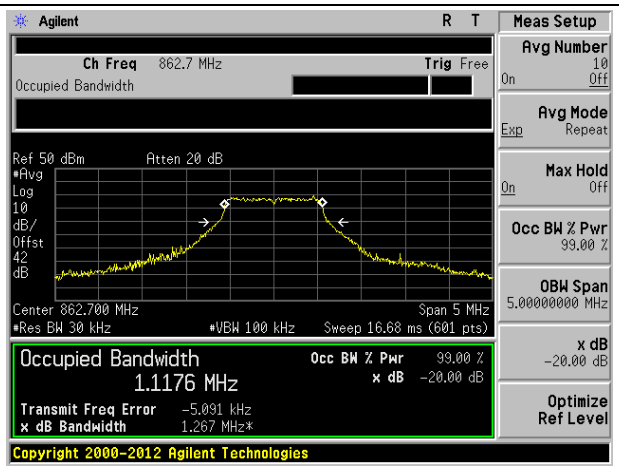
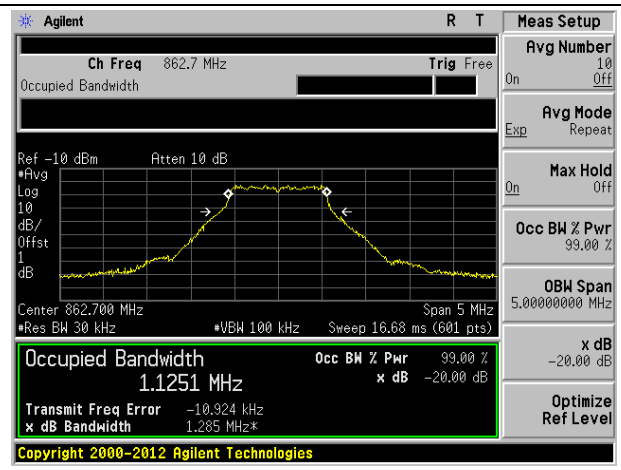
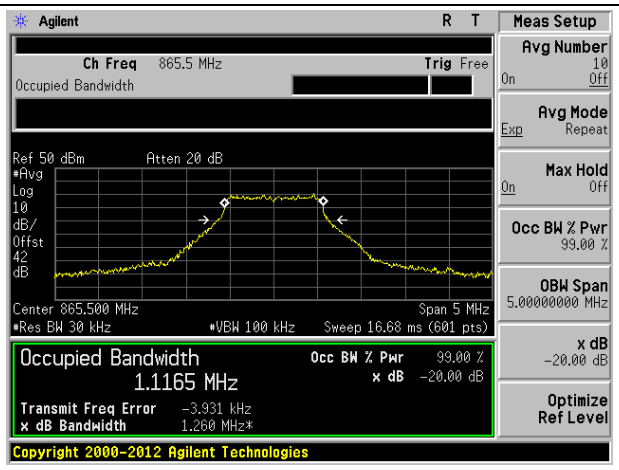
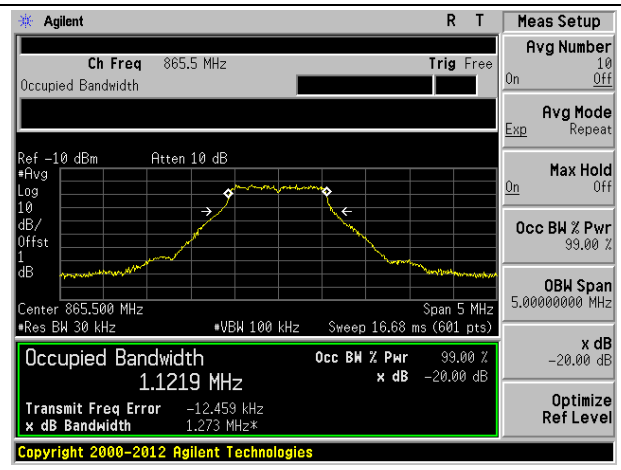
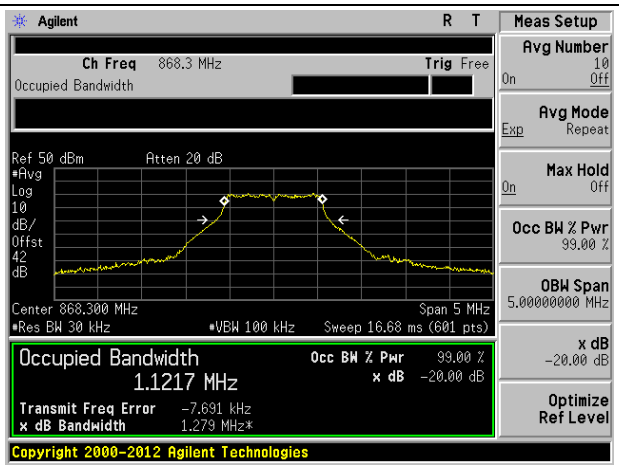
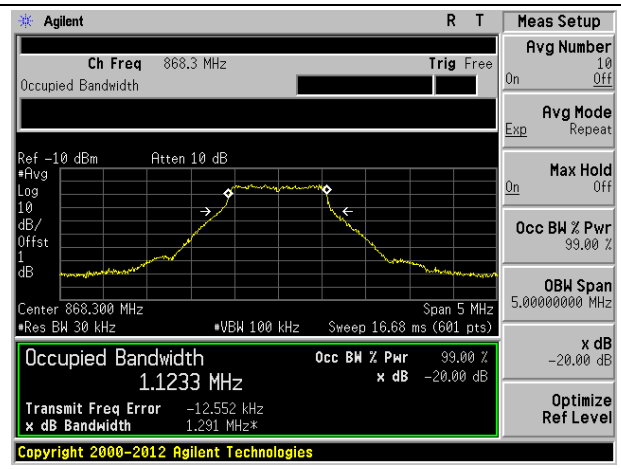
Input/output Bandwidth Comparison

Downlink:

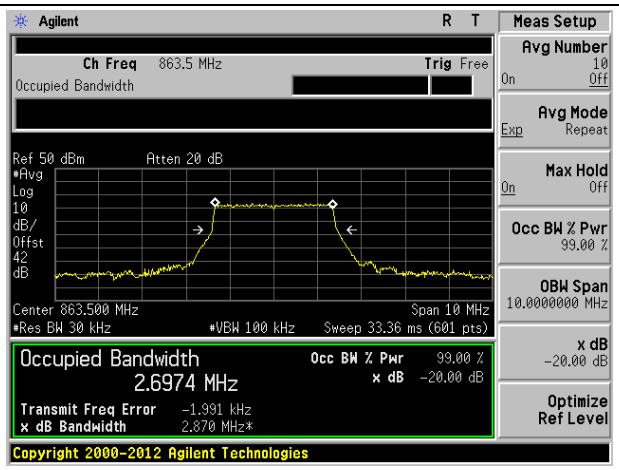
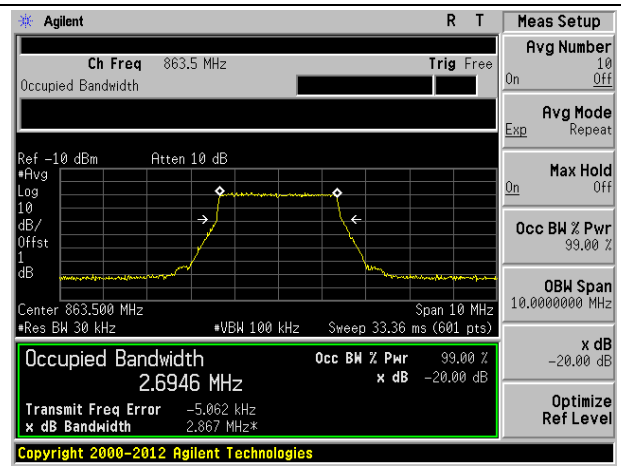
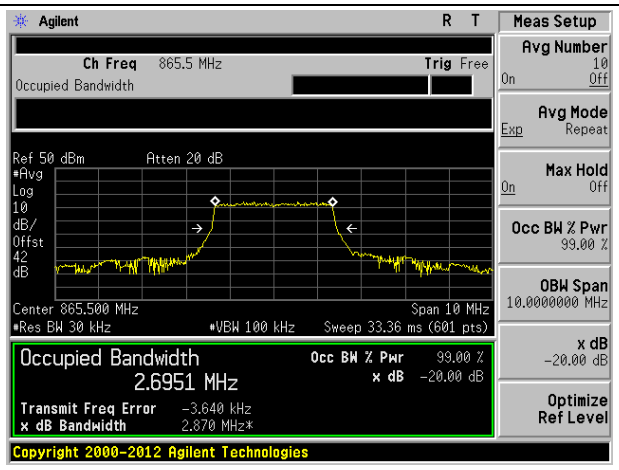
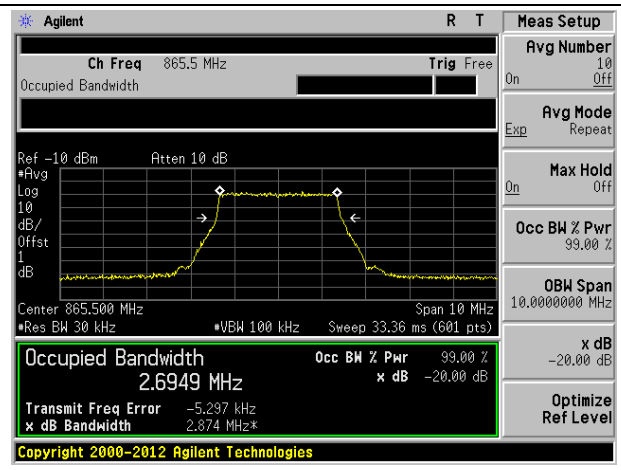
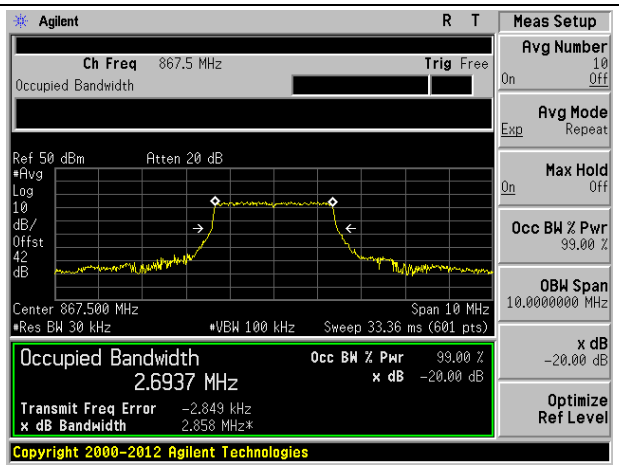
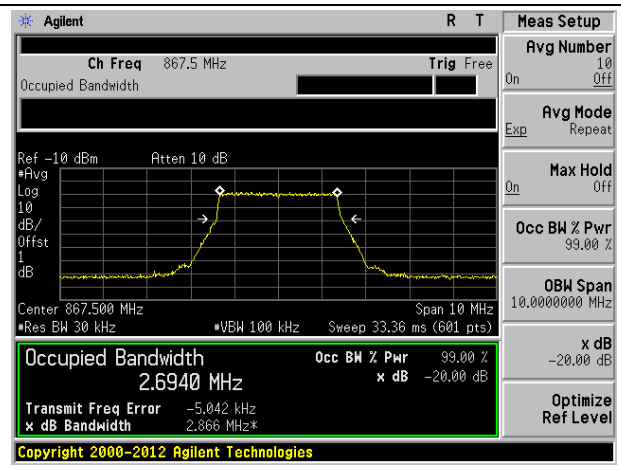
Input/output Bandwidth Comparison for CDMA

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

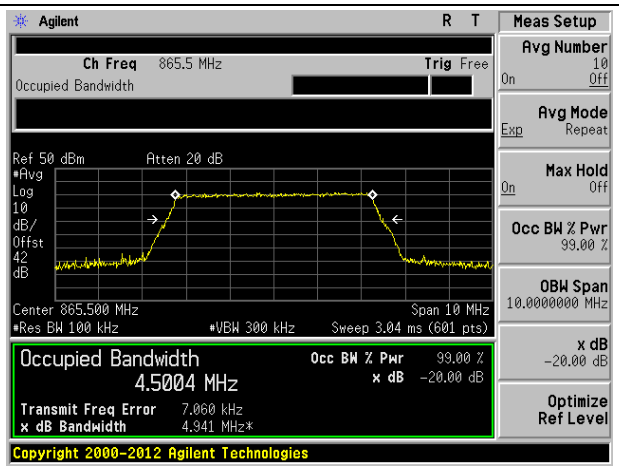
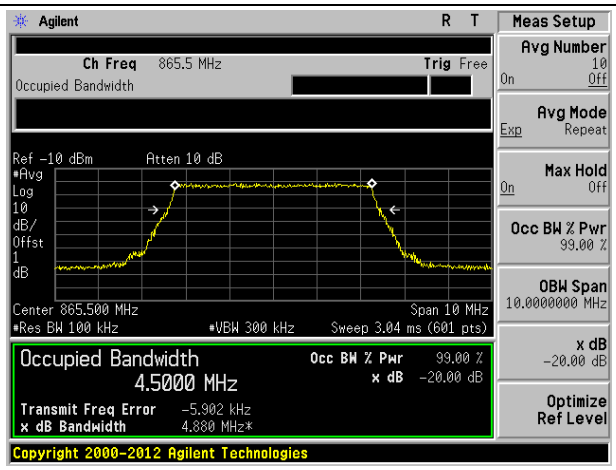
Input/output Bandwidth Comparison for LTE 1.4MHz Bandwidth

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 Bandwidth

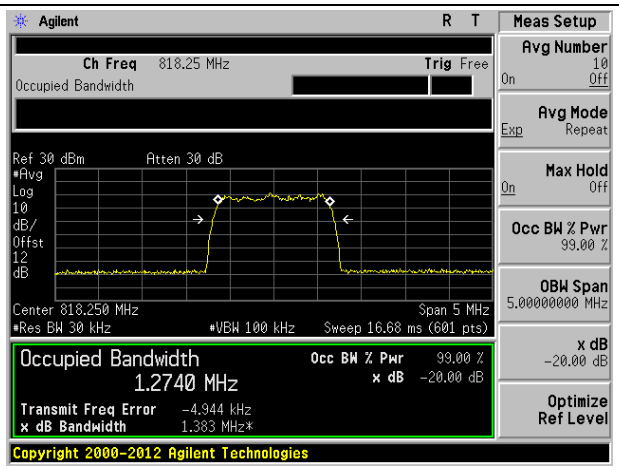
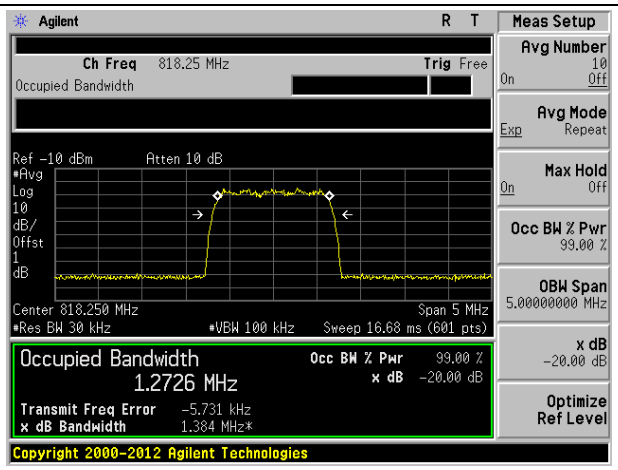
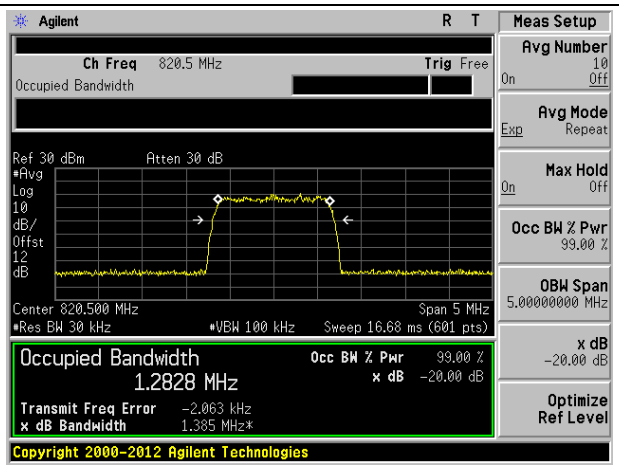
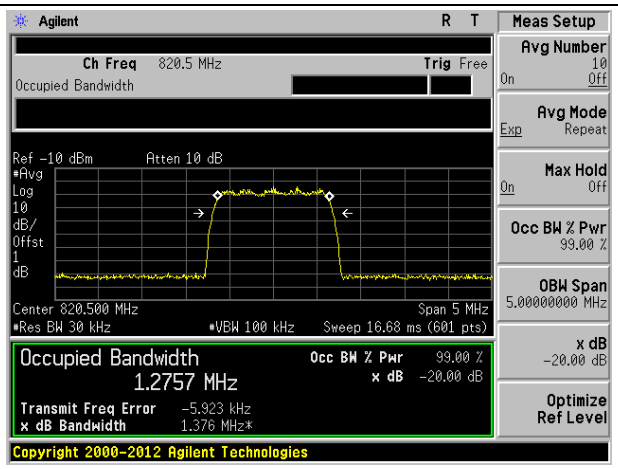
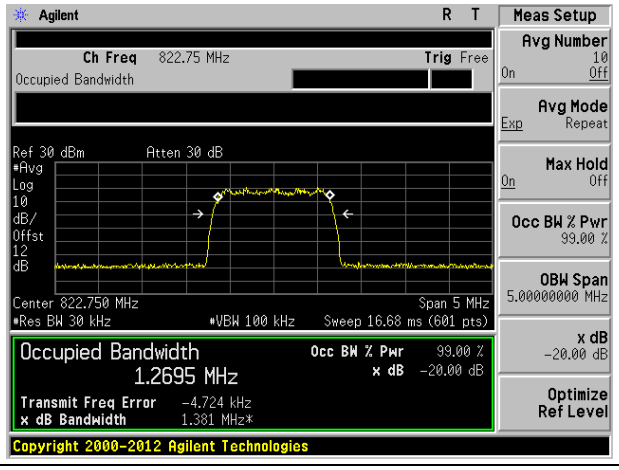
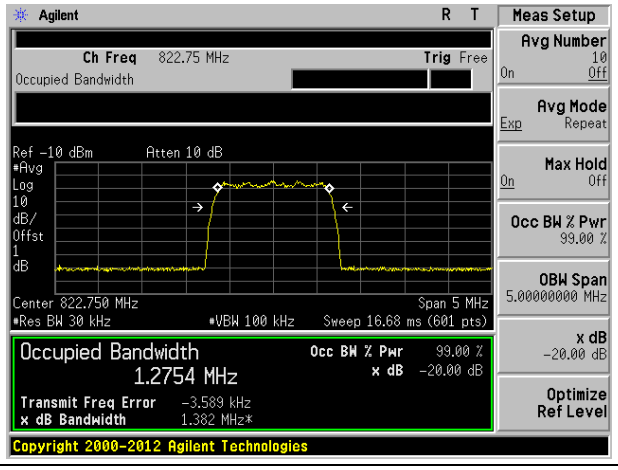
Output(Lowest channel)	Input(Lowest channel)
	
Output(Middle channel)	Input(Middle channel)
	
Output(Highest channel)	Input(Highest channel)
	

Input/output Bandwidth Comparison for LTE 5MHz Bandwidth

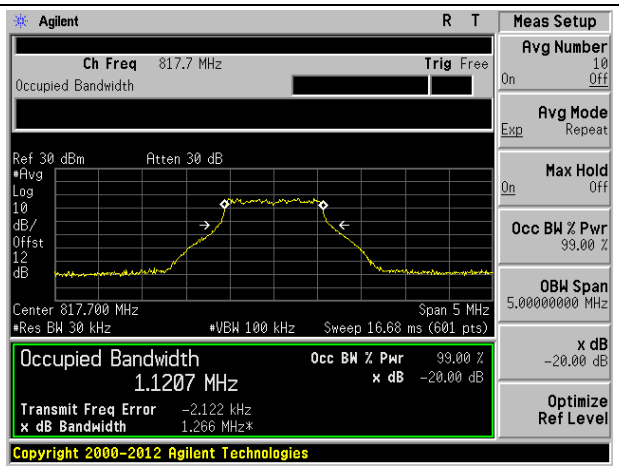
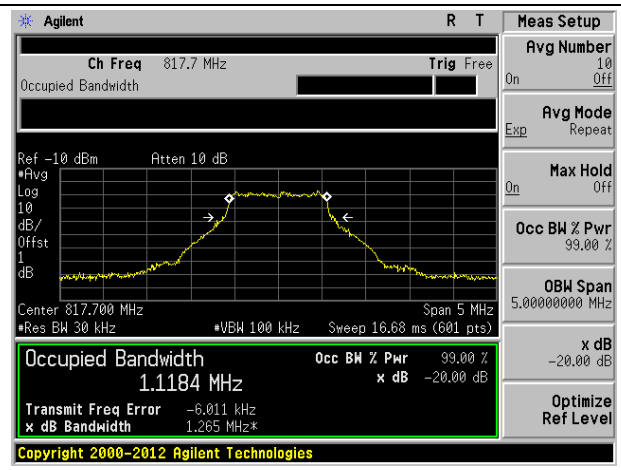
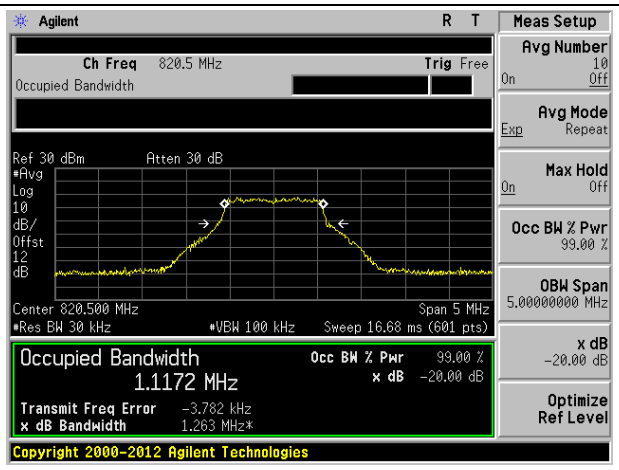
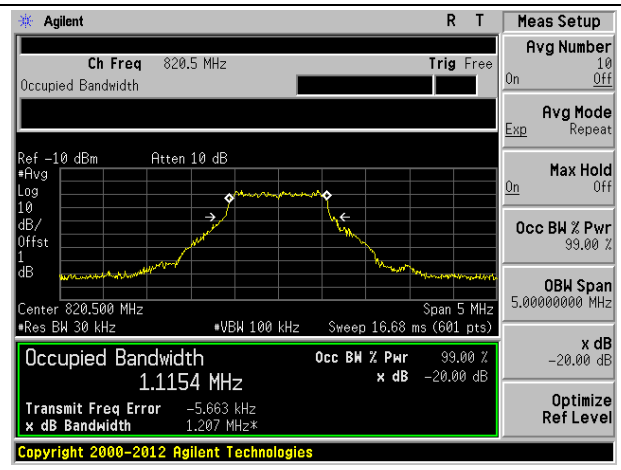
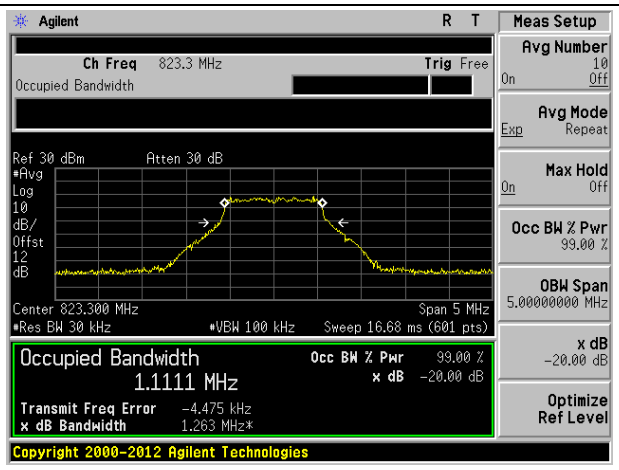
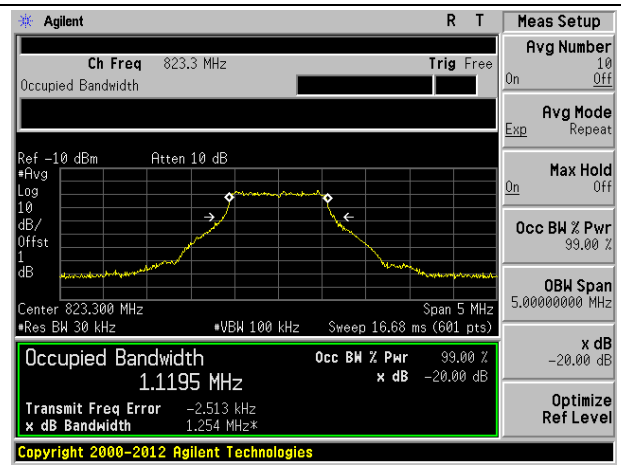
Output(Lowest channel)	Input(Lowest channel)
	

Uplink:

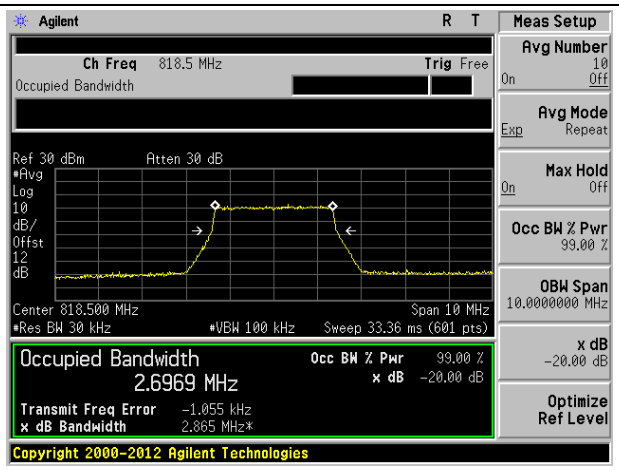
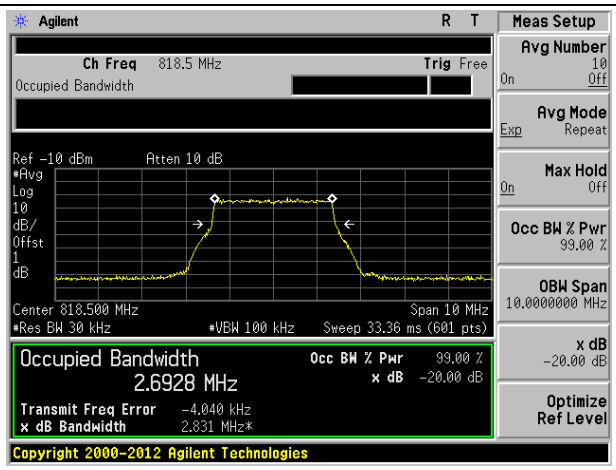
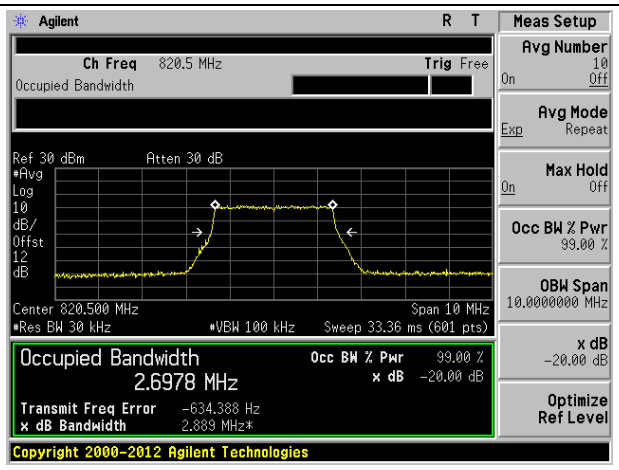
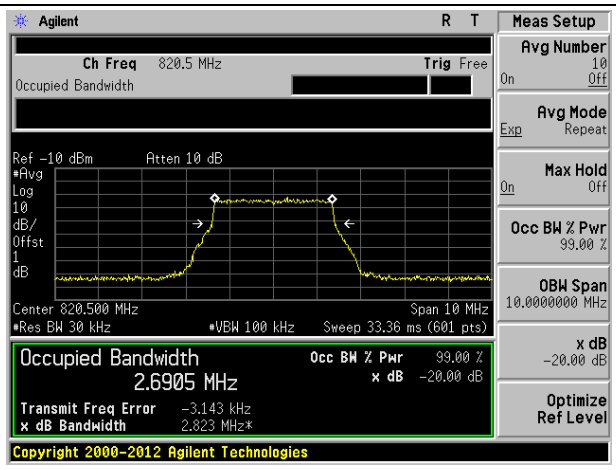
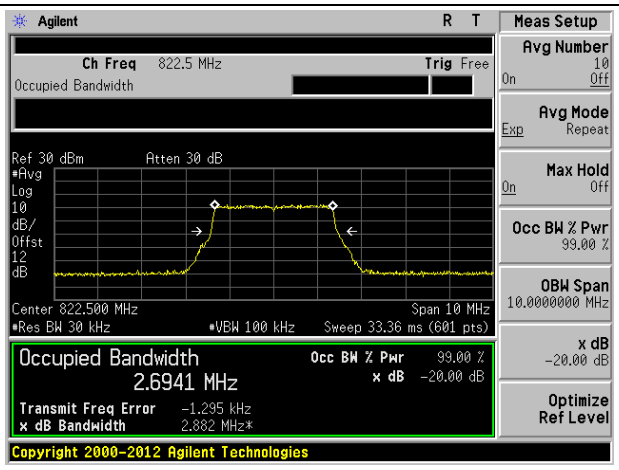
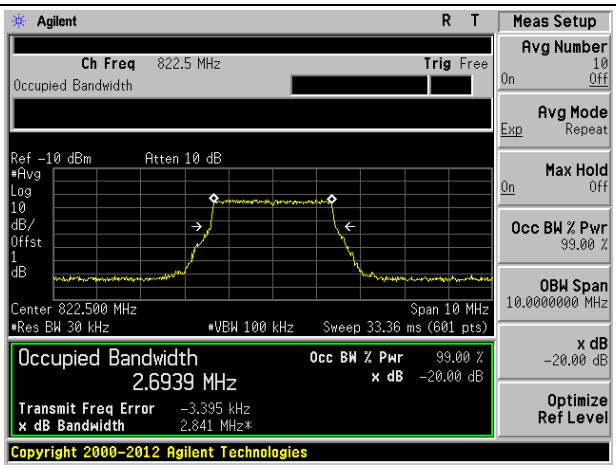
Input/output Bandwidth Comparison for CDMA

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

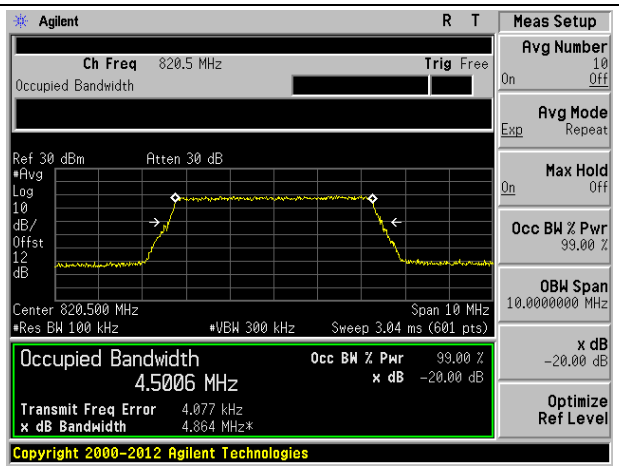
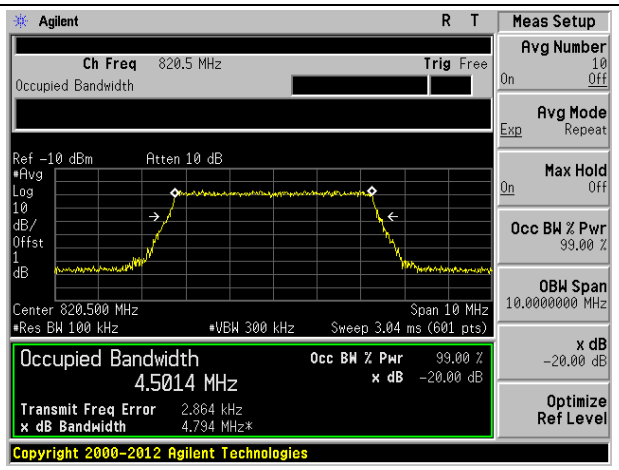
Input/output Bandwidth Comparison for LTE 1.4MHz Bandwidth

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 Bandwidth

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 Bandwidth

Output(Lowest channel)	Input(Lowest channel)
	

10 OUT OF BAND EMISSION AT ANTENNA TERMINALS

10.1 Standard Applicable

According to FCC § 2.1051 and § 90.691.

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 CDMA and LTE. The different signals were input one at a time to the EUT. Tests was performed with CDMA and LTE signal input.

Band edge compliance is also demonstrated using a CDMA and 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.

Band Edge:

RBW=1%of the occupied channel bandwidth without going below 1%, VBW≥ RBW

Spurious emissions:

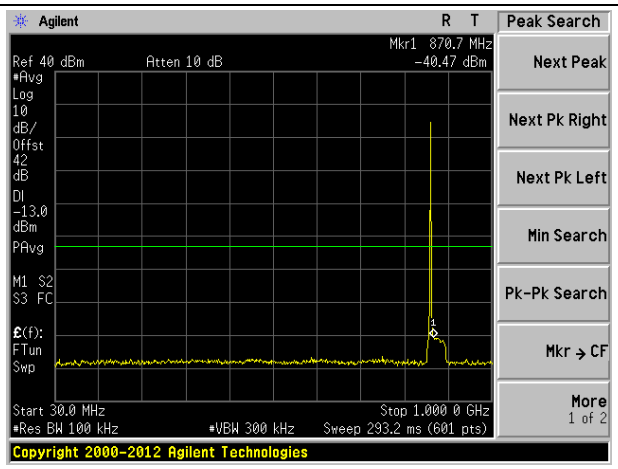
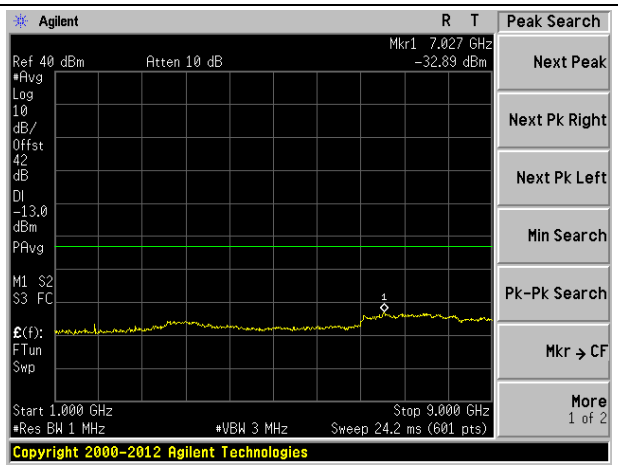
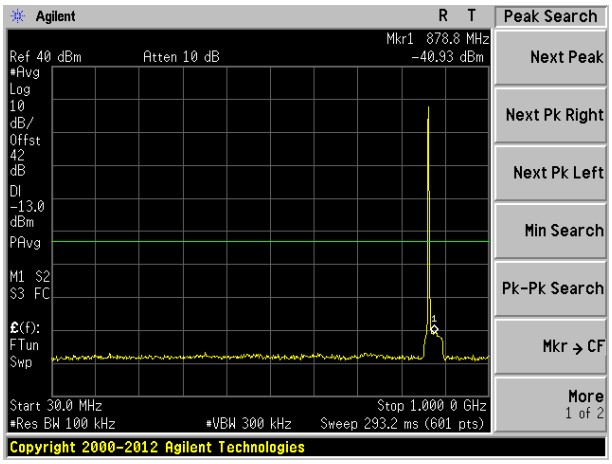
Below 1G: RBW=100kHz; VBW=300KHz; Above 1G: RBW=1 MHz ; VBW≥ RBW

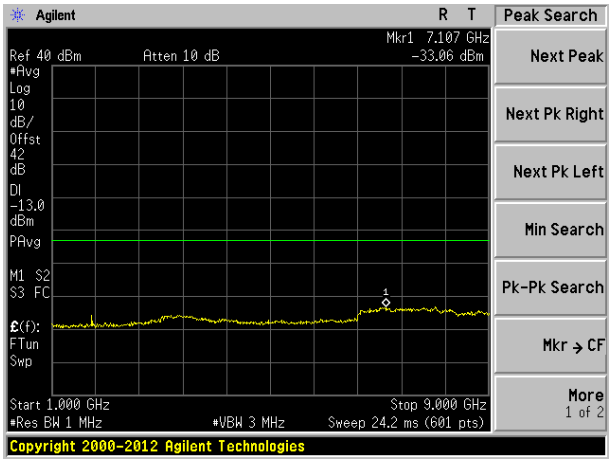
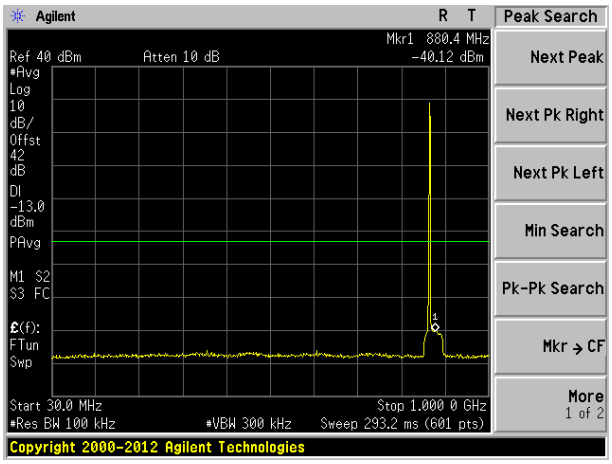
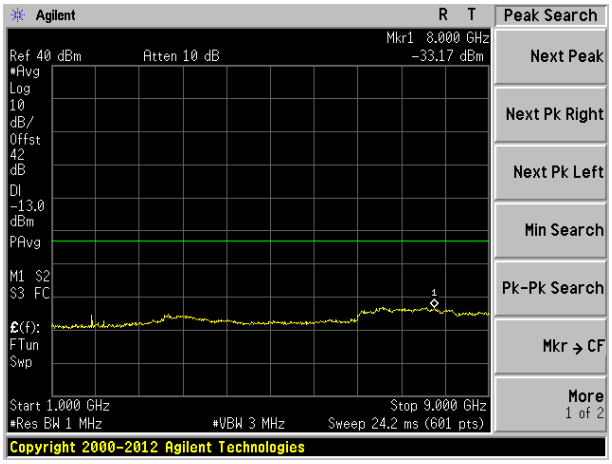
10.4 Measurement Result

10.4.1 Spurious emission

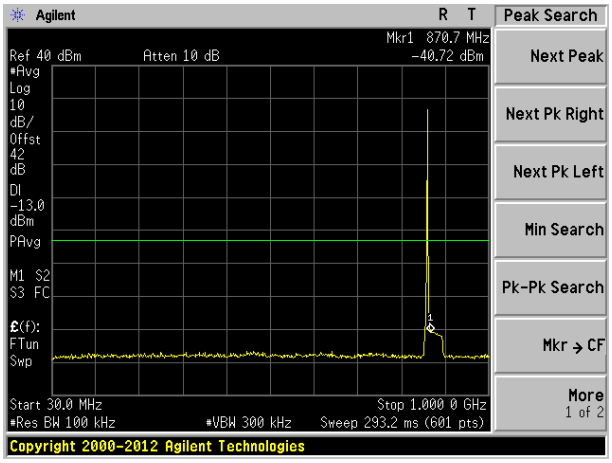
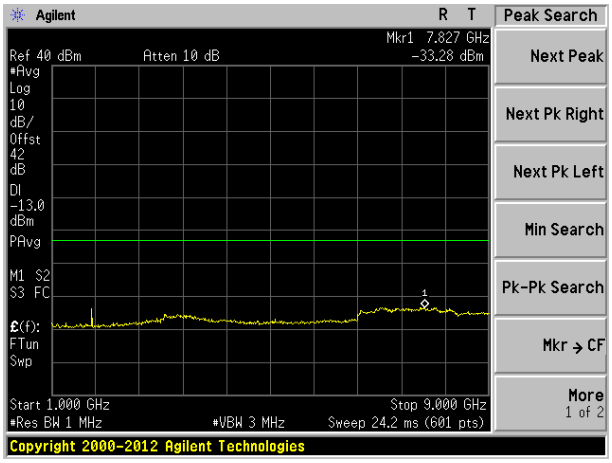
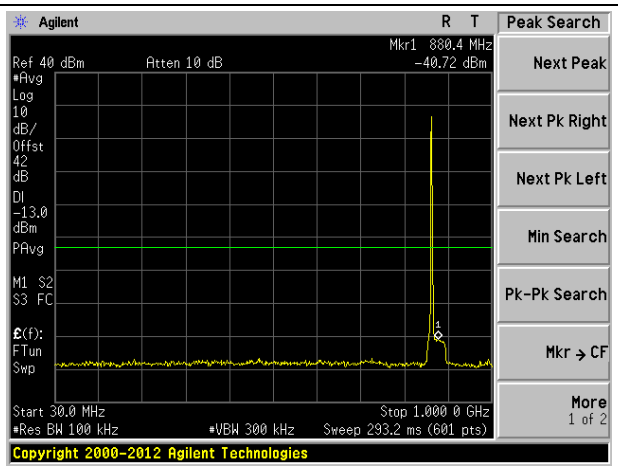
Downlink:

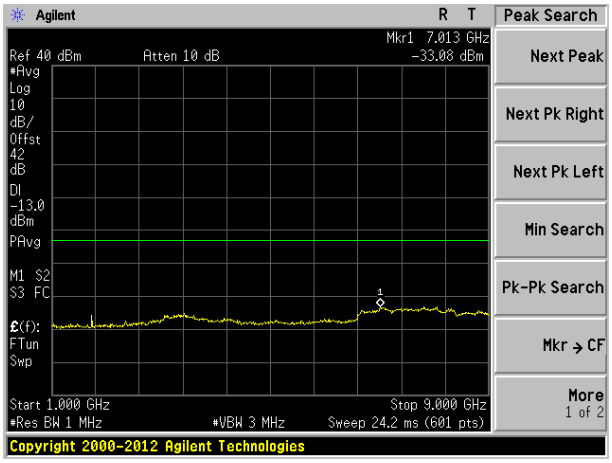
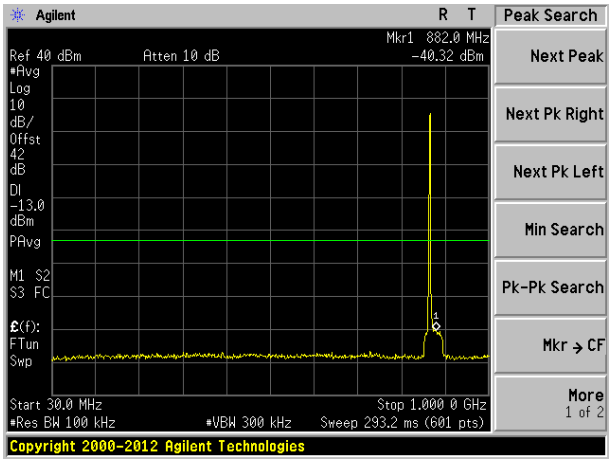
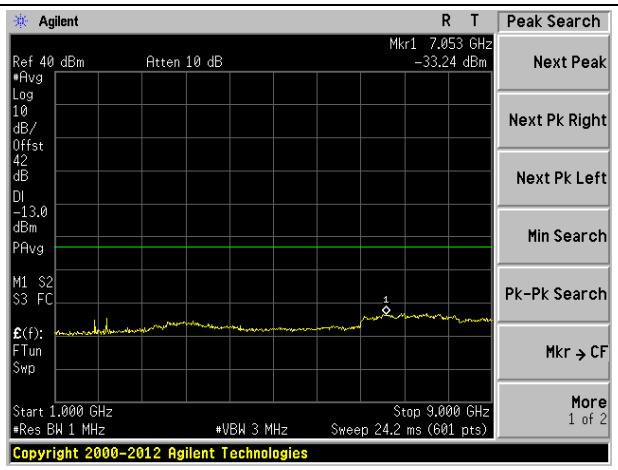
Spurious emission of CDMA

Lowest channel
30MHz-1000MHz

1000MHz-9000MHz

Middle channel
30MHz-1000MHz


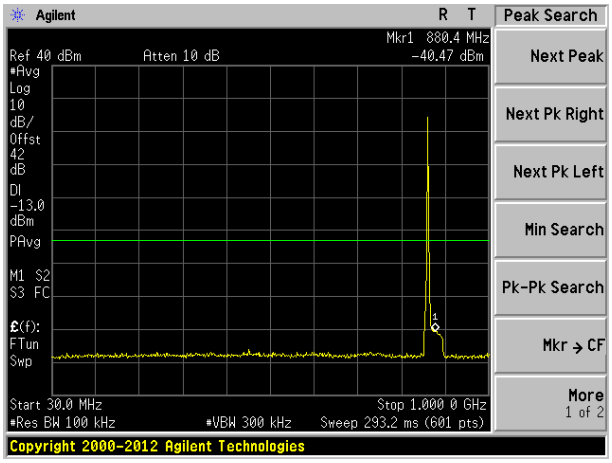
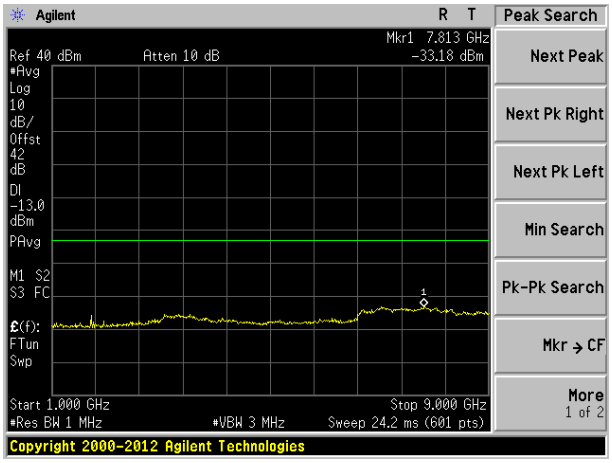
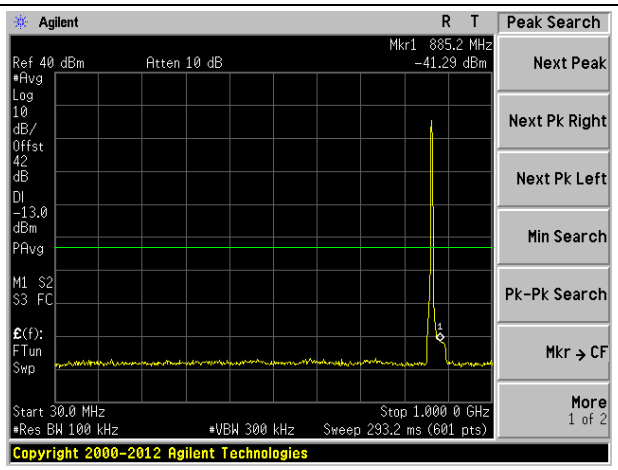
1000MHz-9000MHz

Highest channel
30MHz-1000MHz

1000MHz-9000MHz


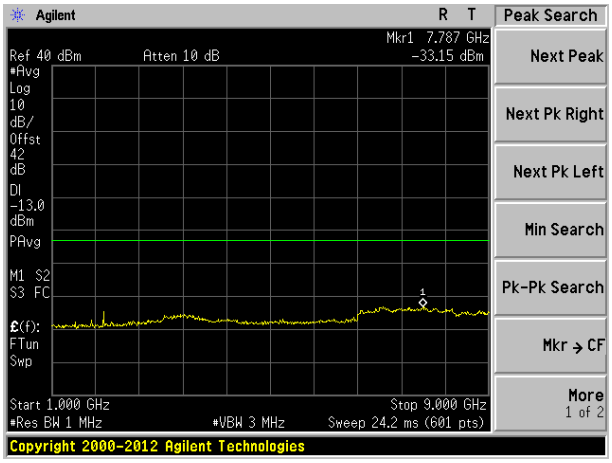
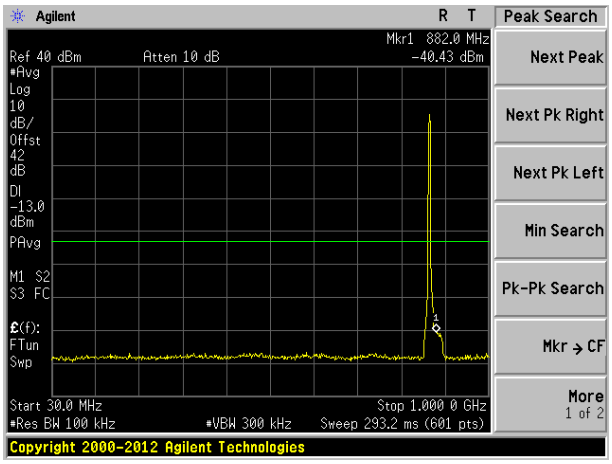
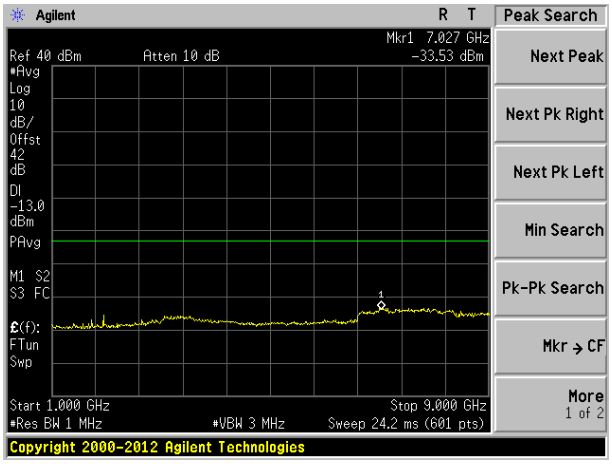
Spurious emission of LTE for 1.4MHz Bandwidth

Lowest channel
30MHz-1000MHz

1000MHz-9000MHz

Middle channel
30MHz-1000MHz


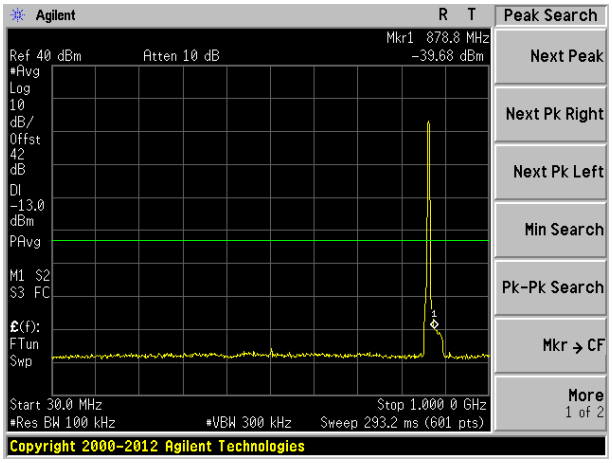
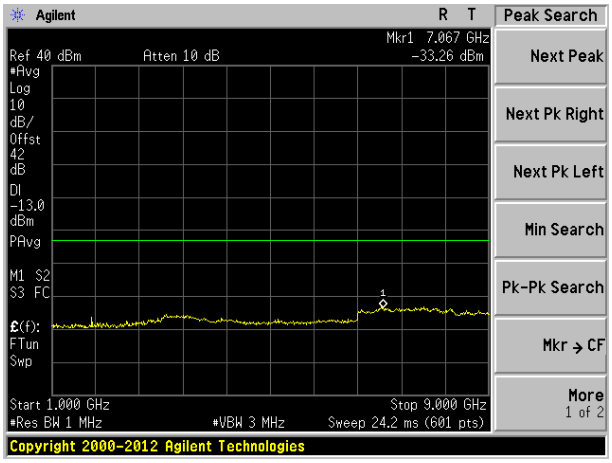
1000MHz-9000MHz

Highest channel
30MHz-1000MHz

1000MHz-9000MHz


Spurious emission of LTE 3MHz Bandwidth

Lowest channel
30MHz-1000MHz

1000MHz-9000MHz

Middle channel
30MHz-1000MHz


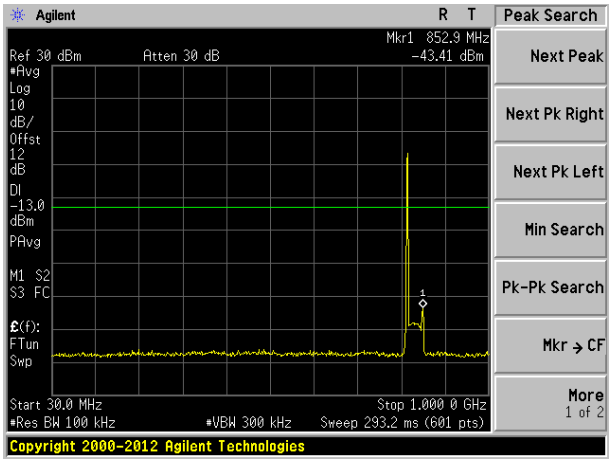
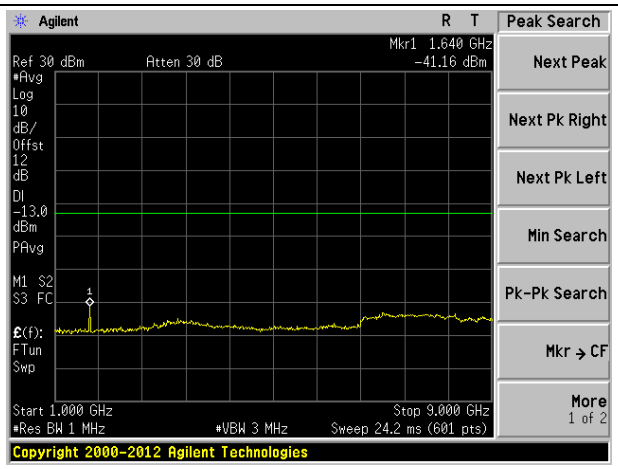
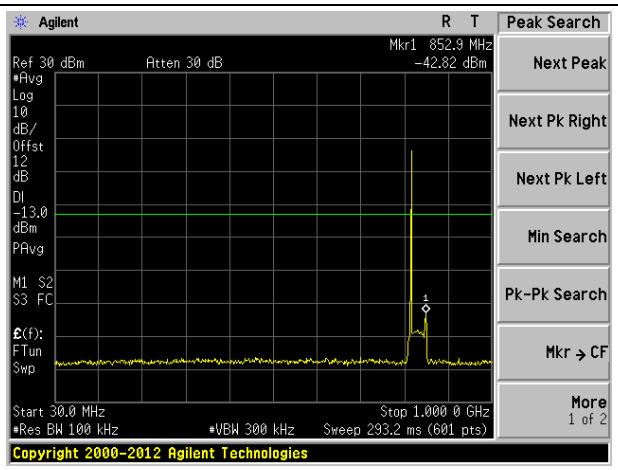
1000MHz-9000MHz

Highest channel
30MHz-1000MHz

1000MHz-9000MHz


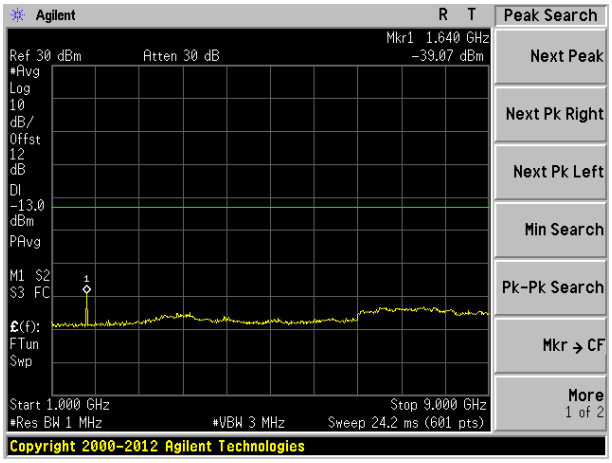
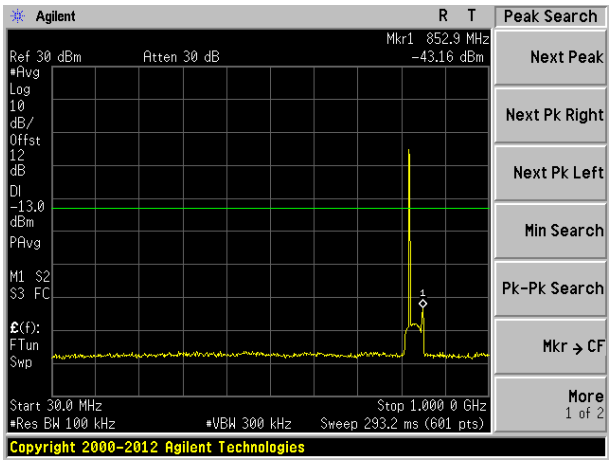
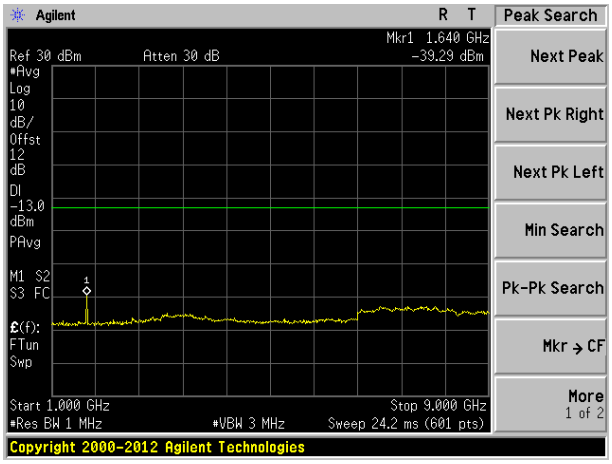
Spurious emission of LTE 5MHz Bandwidth

Middle channel
30MHz-1000MHz

1000MHz-9000MHz


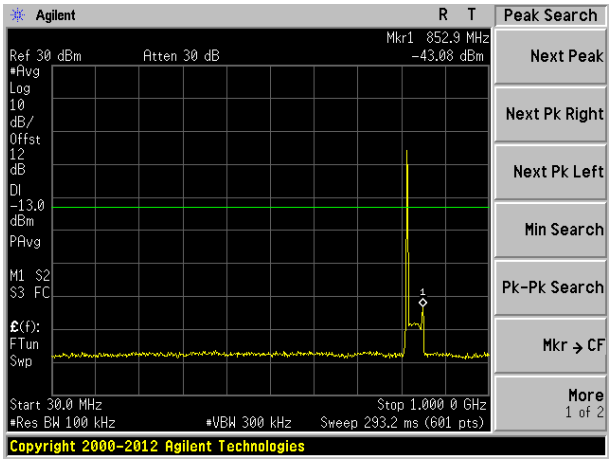
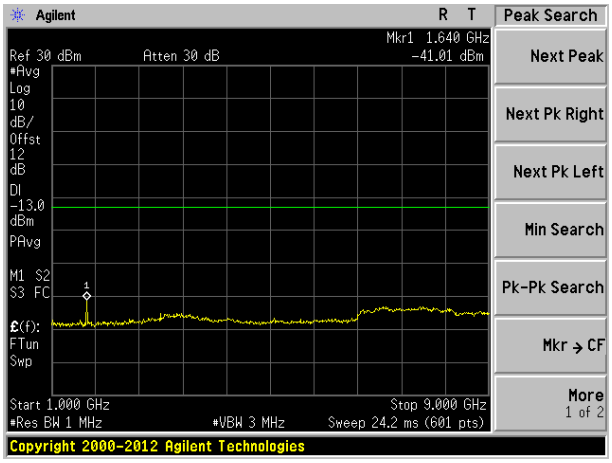
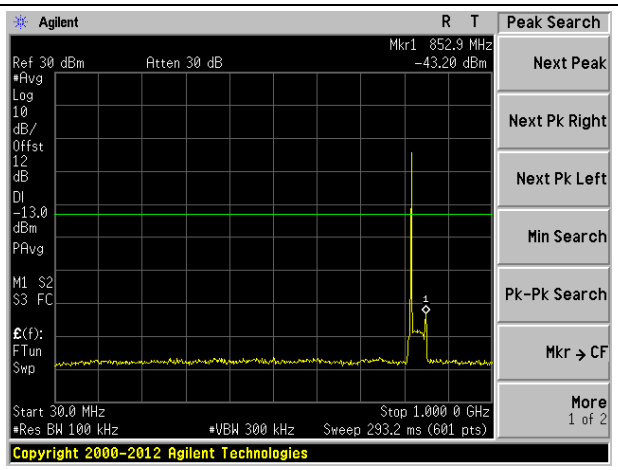
Uplink:

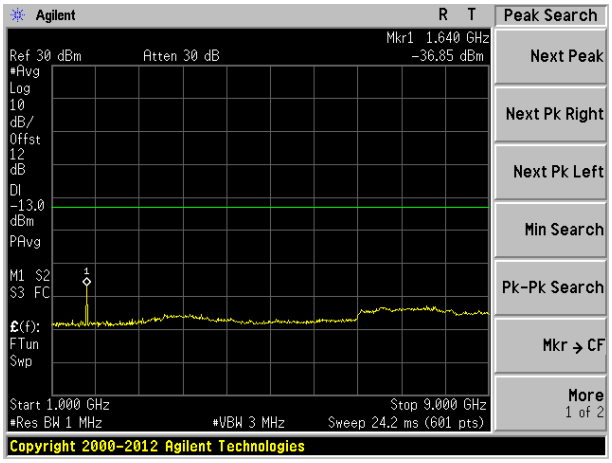
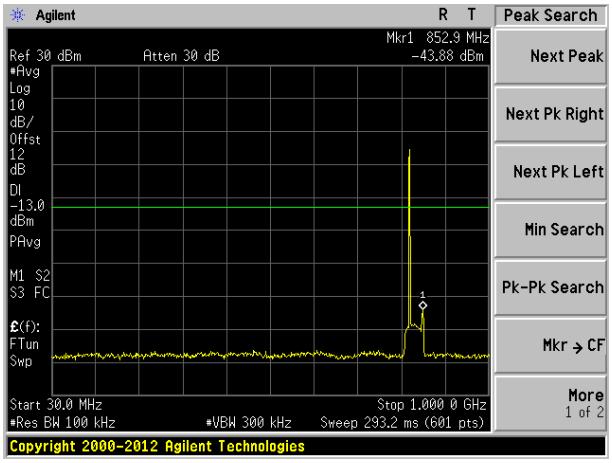
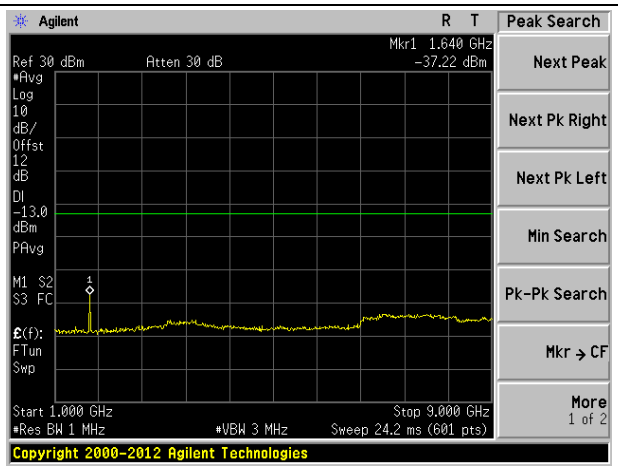
Spurious emission of CDMA

Lowest channel
30MHz-1000MHz

1000MHz-9000MHz

Middle channel
30MHz-1000MHz


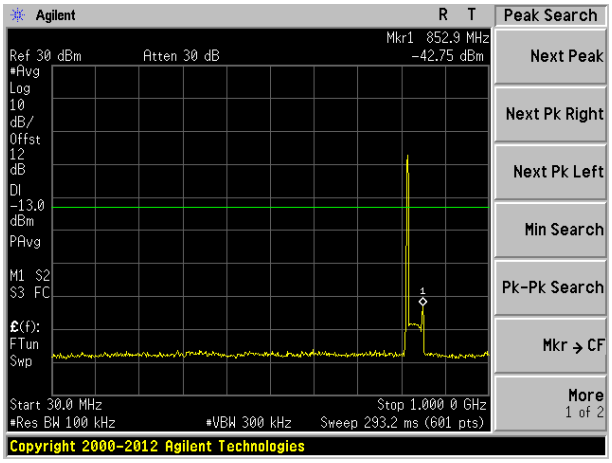
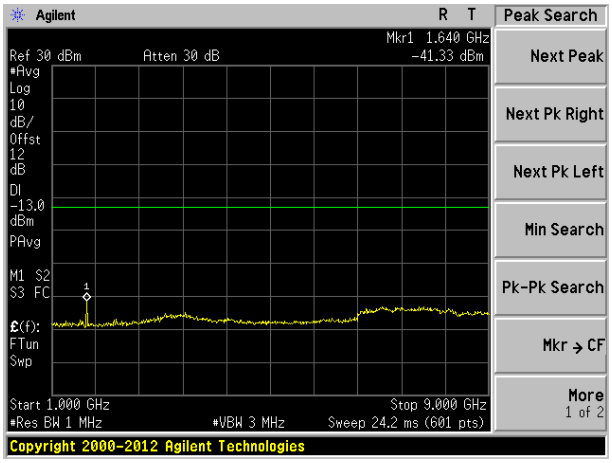
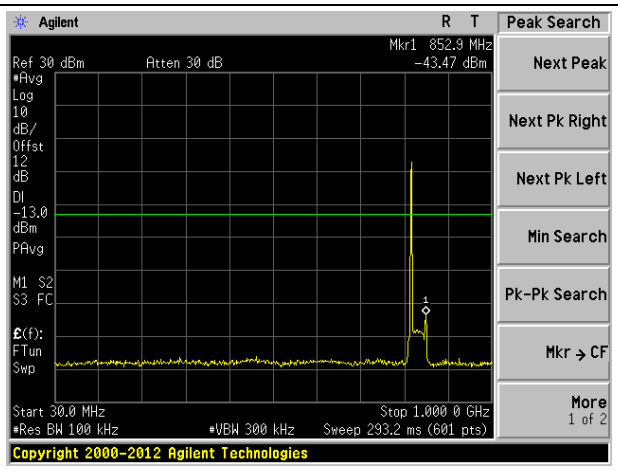
1000MHz-9000MHz

Highest channel
30MHz-1000MHz

1000MHz-9000MHz


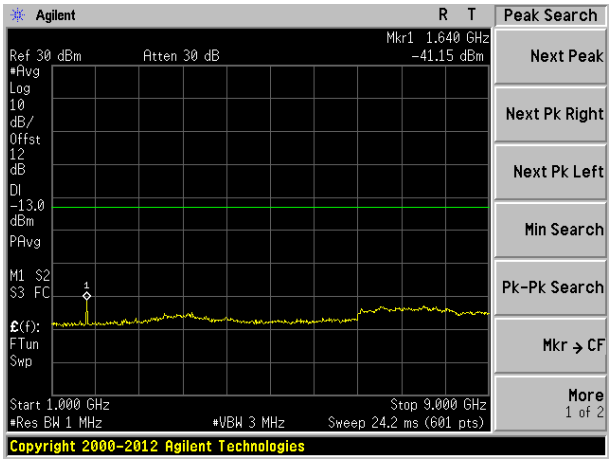
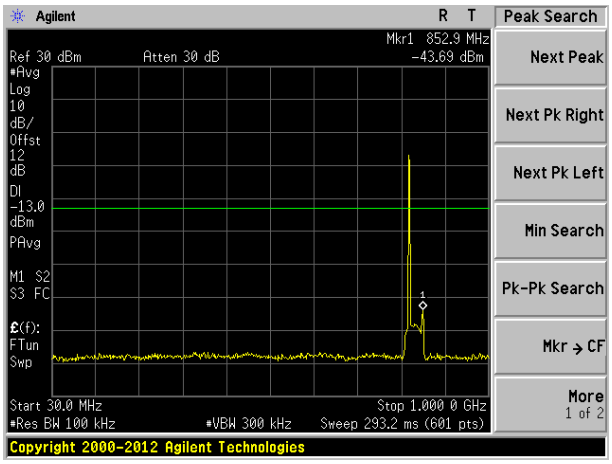
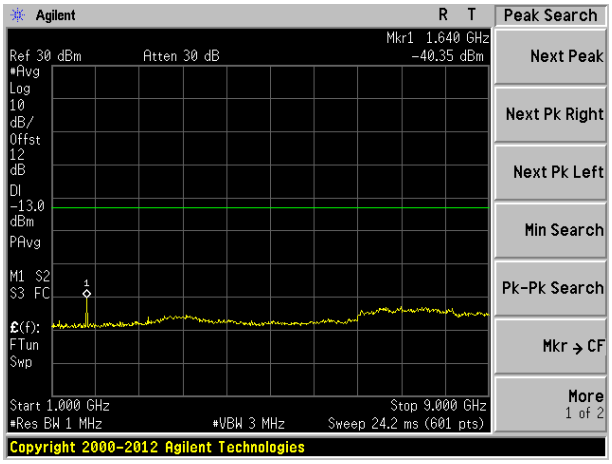
Spurious emission of LTE for 1.4MHz Bandwidth

Lowest channel
30MHz-1000MHz

1000MHz-9000MHz

Middle channel
30MHz-1000MHz


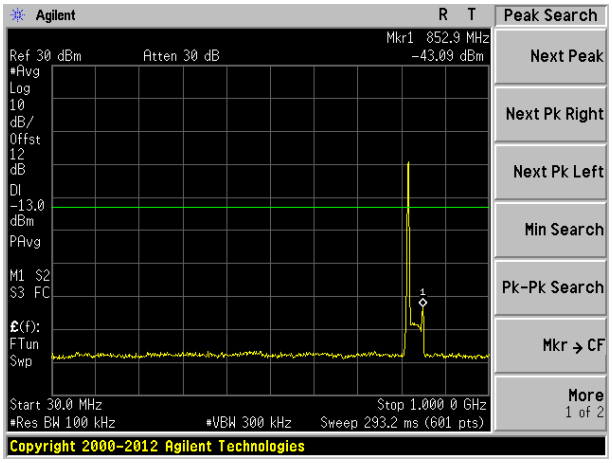
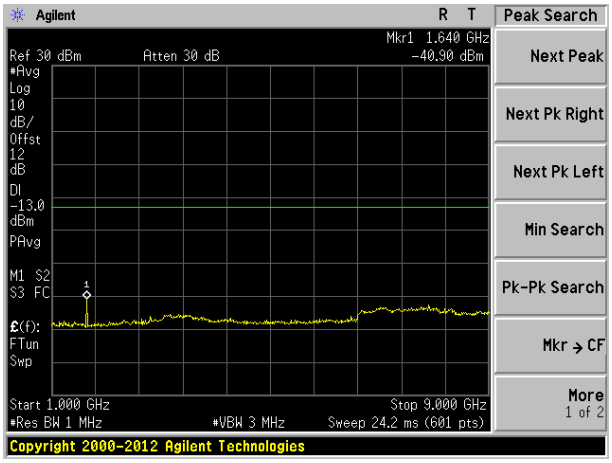
1000MHz-9000MHz

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


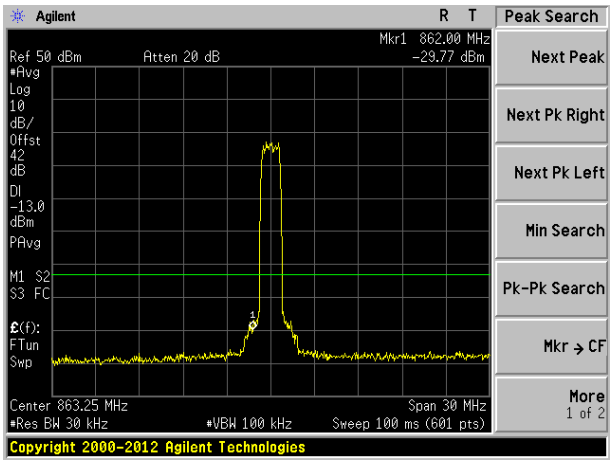
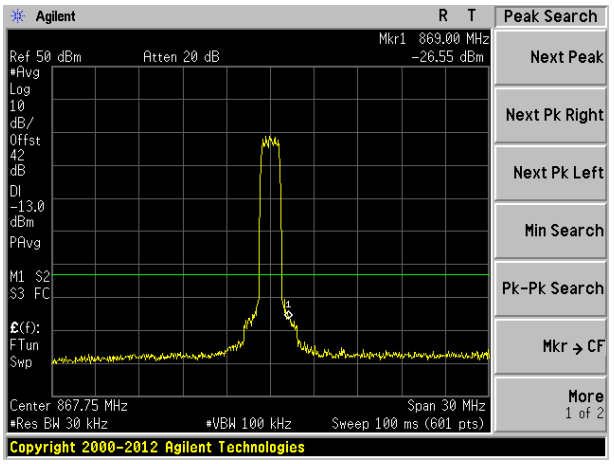
Spurious emission of LTE 5MHz Bandwidth

Middle channel
30MHz-1000MHz

1000MHz-9000MHz


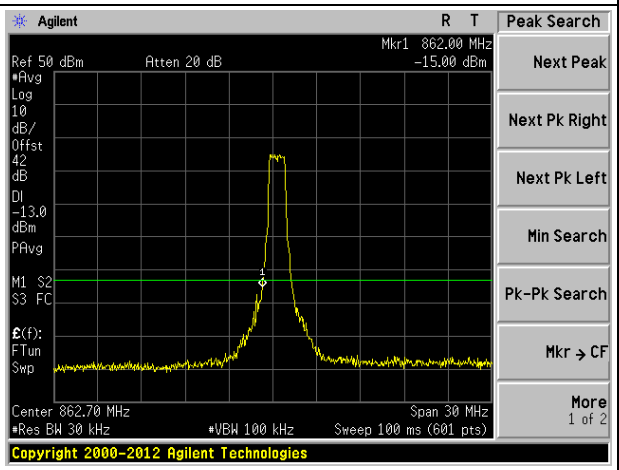
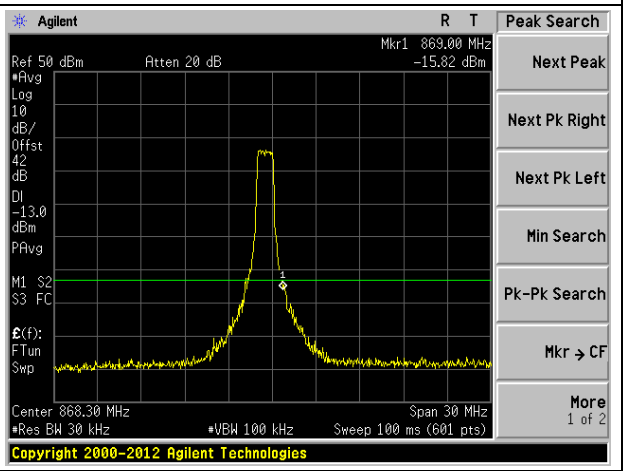
10.4.2 Band edge emission

Downlink:

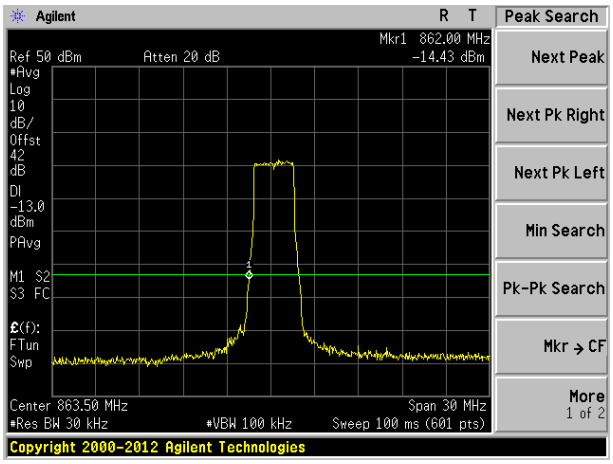
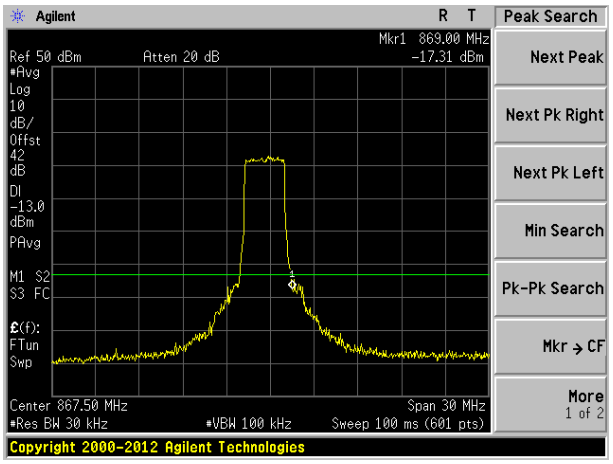
Band edge of CDMA

Left edge of band	Right edge of band
	

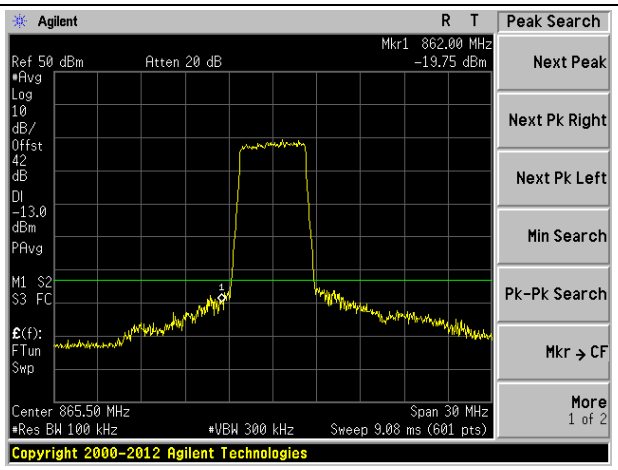
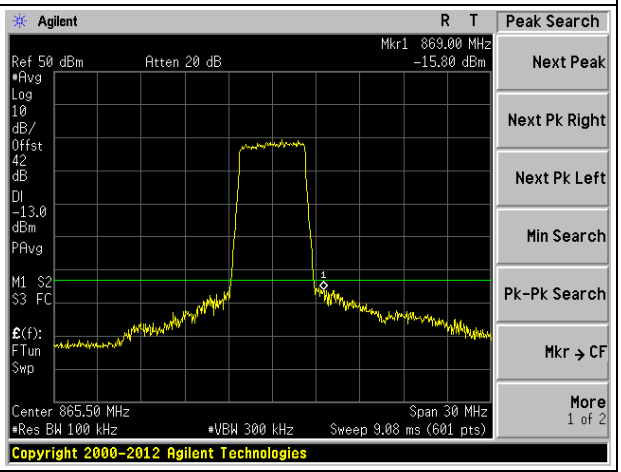
Band edge of LTE 1.4MHz Bandwidth

Left edge of band	Right edge of band
	

Band edge of 3MHz Bandwidth

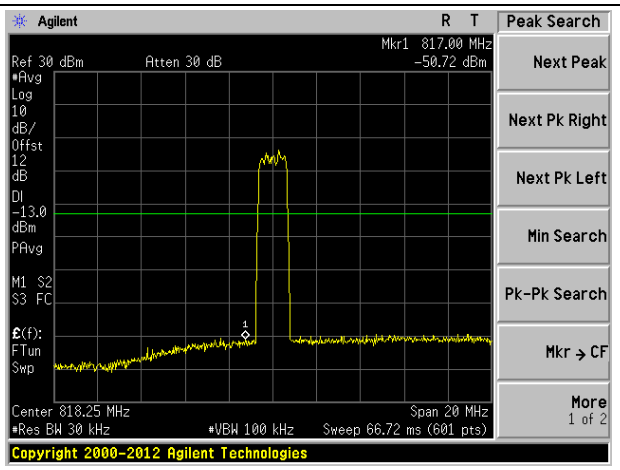
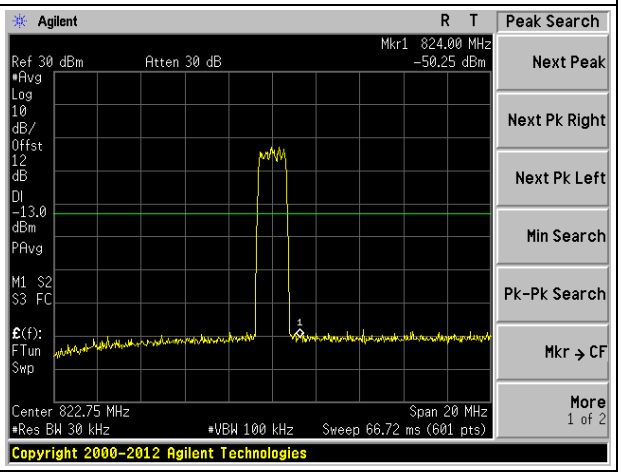
Left edge of band	Right edge of band
	

Band edge of 5MHz Bandwidth

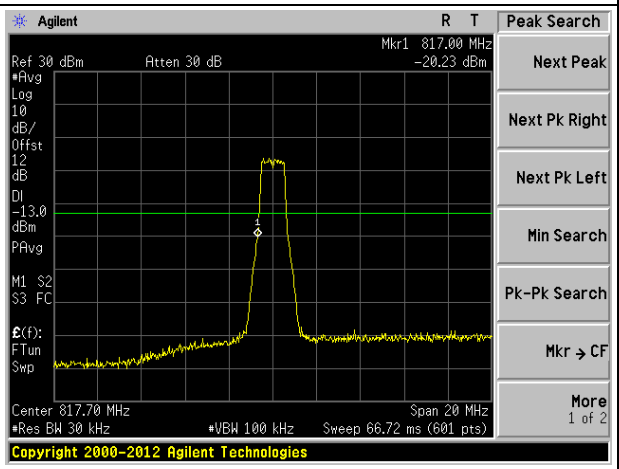
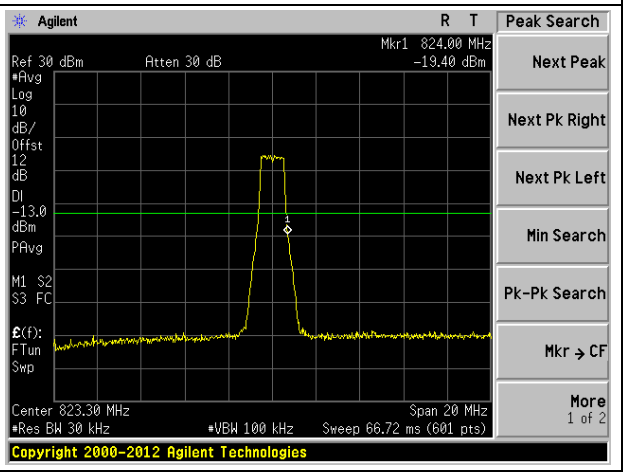
Left edge of band	Right edge of band
	

Uplink:
Downlink:

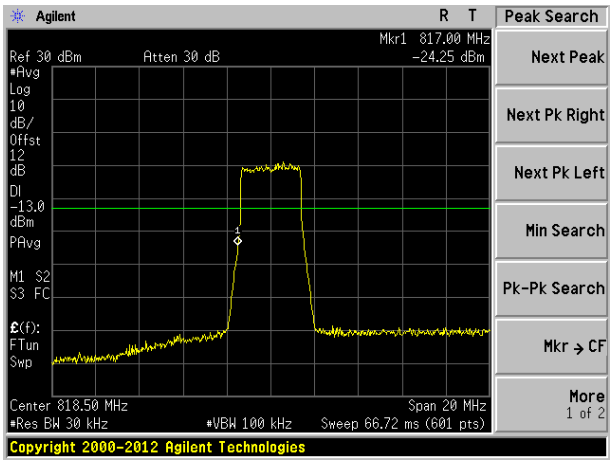
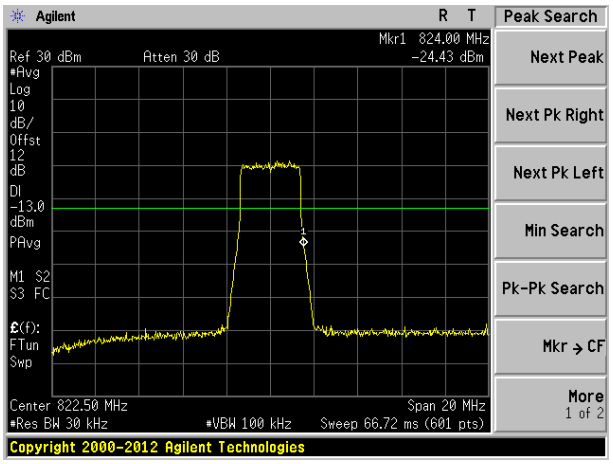
Band edge of CDMA

Left edge of band	Right edge of band
	

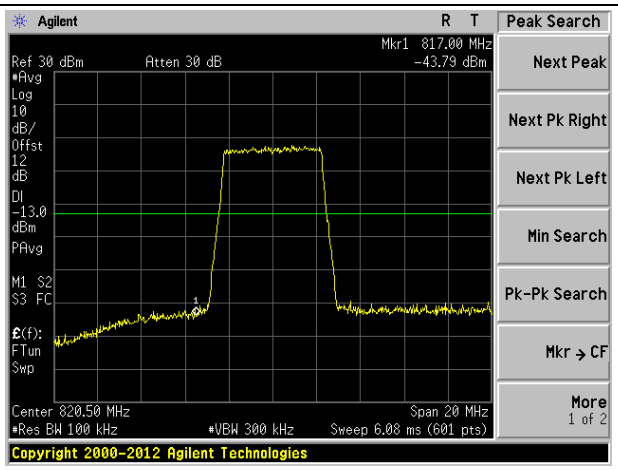
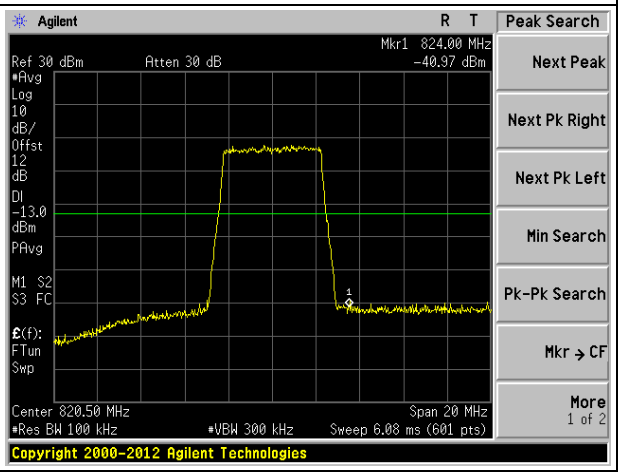
Band edge of LTE 1.4MHz Bandwidth

Left edge of band	Right edge of band
	

Band edge of 3MHz Bandwidth

Left edge of band	Right edge of band
	

Band edge of 5MHz Bandwidth

Left edge of band	Right edge of band
	

11 INTERMODULATION

11.1 Standard Applicable

According to FCC § 2.1051 and § 90.691.

11.2 Test setup

Please refer the section §6.2 Configuration of Tested System.

11.3 Measurement Procedure

1. The EUT RF output port was connected to spectrum analyzer. The EUT shall be set to maximum gain
   and maximum rated output power per channel.
2. Two continuous sinusoidal RF signals shall be fed to the input antenna port of the repeater using a combining device. The two channels near each other should be separated by at least one operating channel width.
3. The spurious emissions at antenna were measured at the RF output port of the EUT.
4. The modulation types tested is CDMA and LTE.

Spectrum analyzer settings:

Detector: RMS.

Intermodulation:

RBW=1%of the occupied channel bandwidth without going below 1%; VBW≥ RBW

Spurious emissions:

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

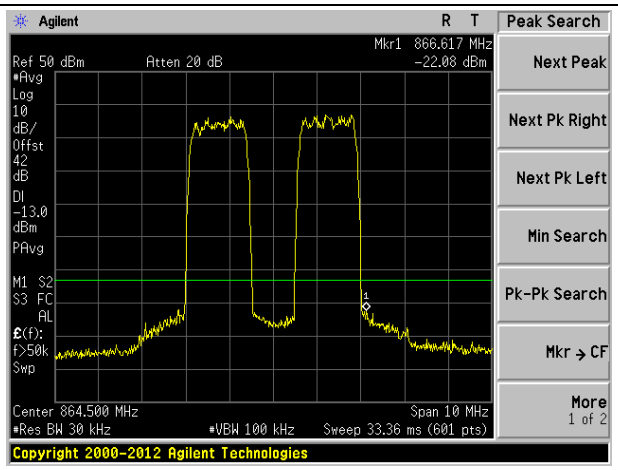
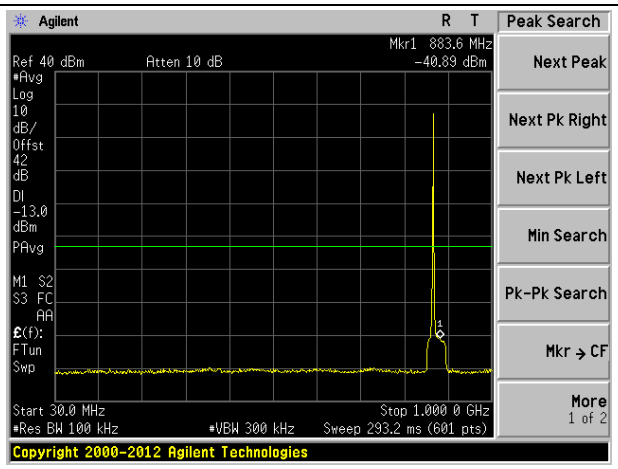
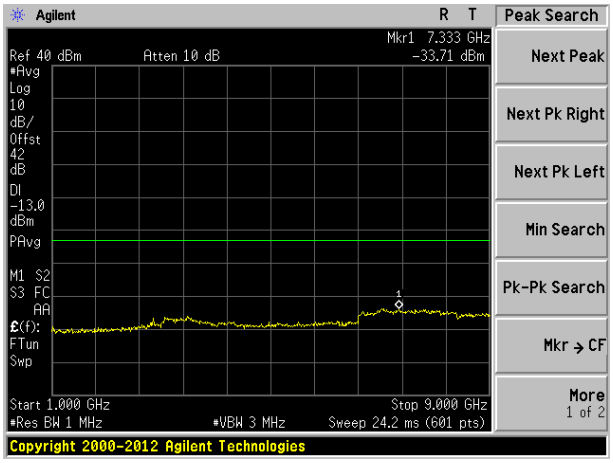
11.4 Test Result

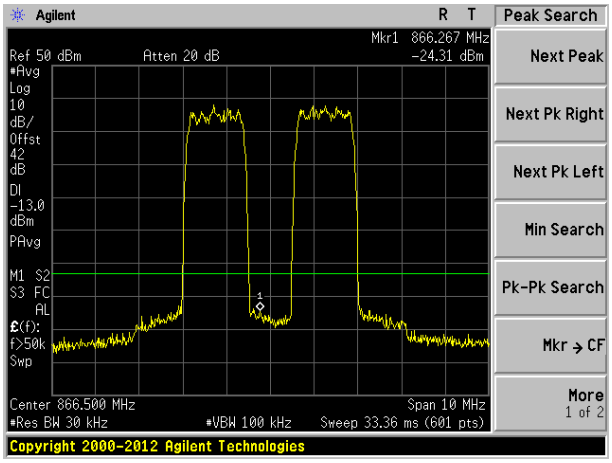
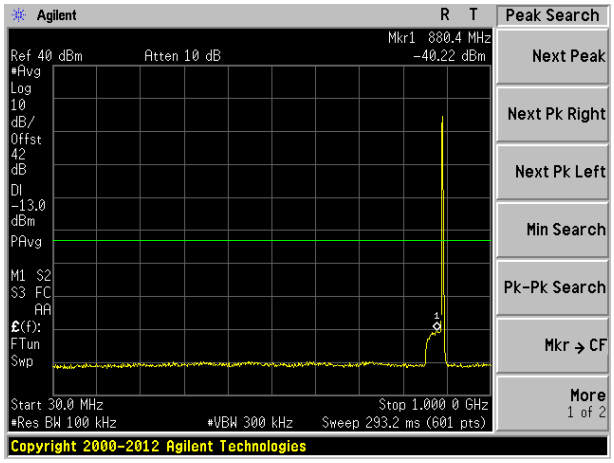
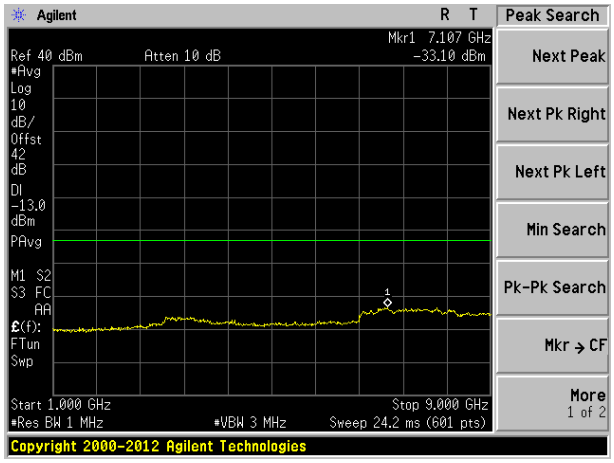
Passed.

Remark: Both case of the normal input power level and increase 3dB above the AGC threshold were tested, we found this case increase 3dB above the AGC threshold which was the worst, and record in the report.

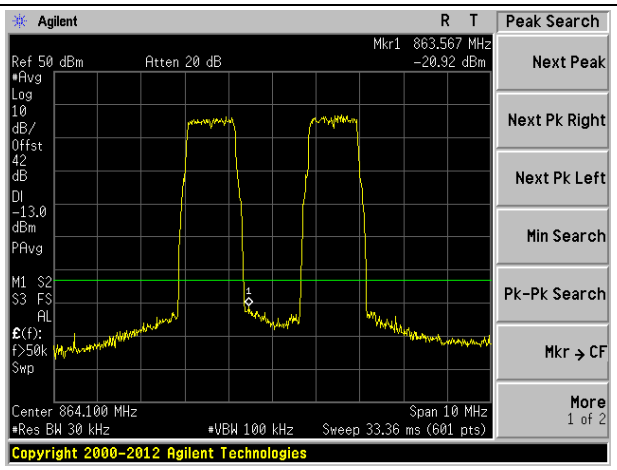
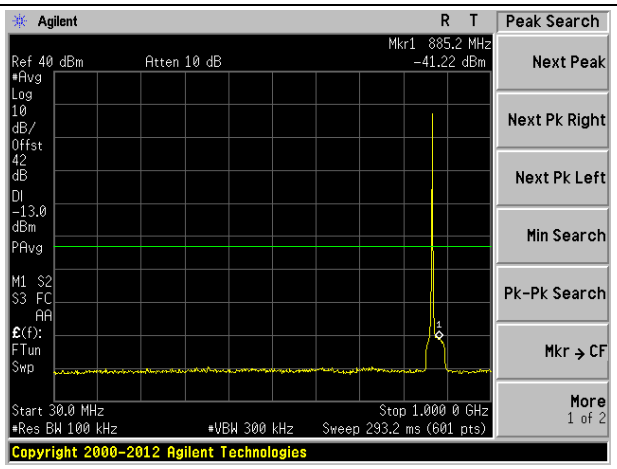
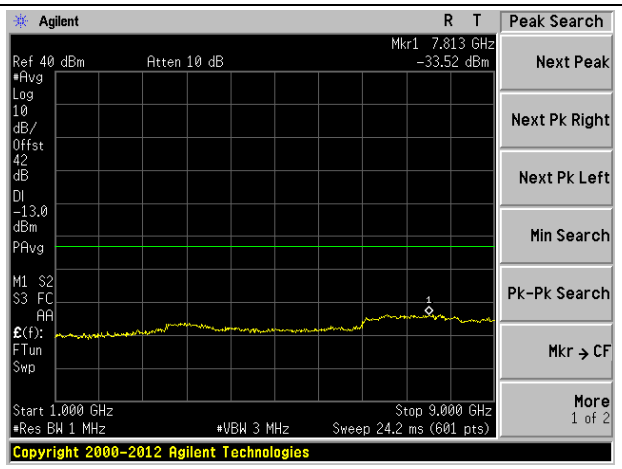
Downlink:

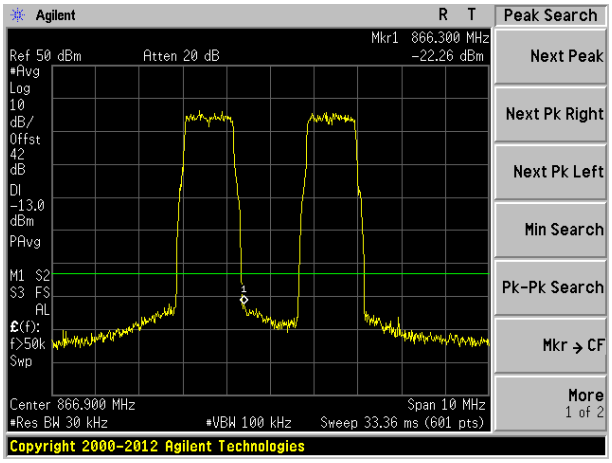
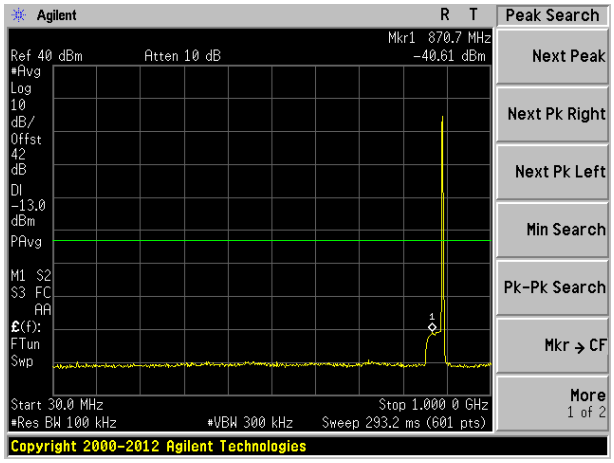
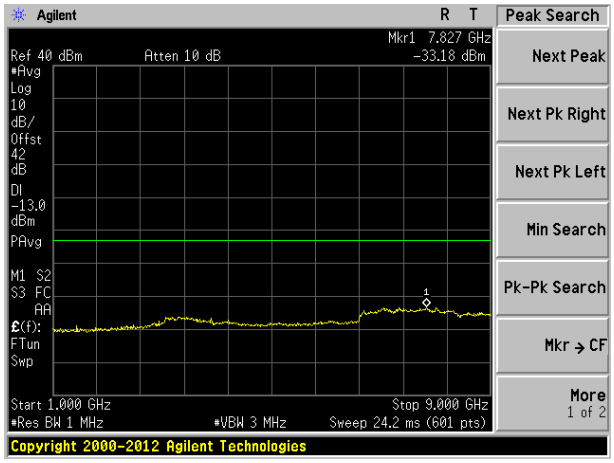
Intermodulation of CDMA

Intermodulation - Low part of band

30MHz-1000MHz spurious emissions

1000MHz-9000MHz spurious emissions


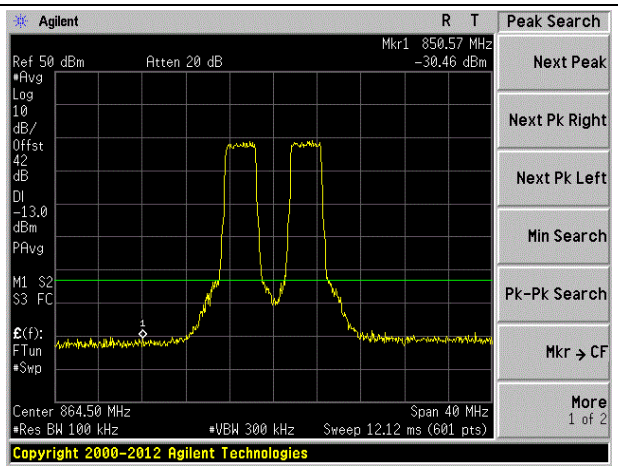
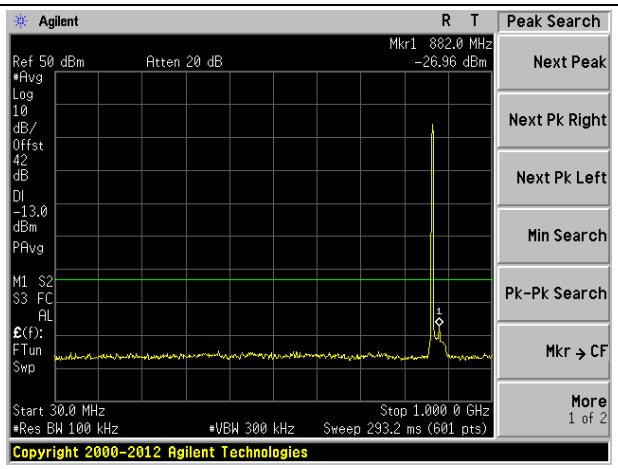
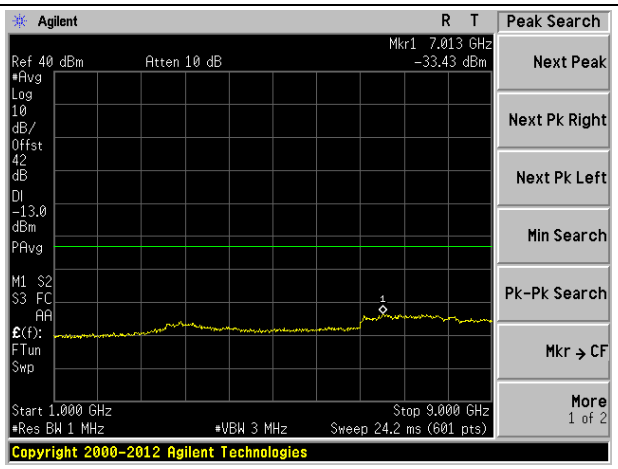
Intermodulation - High part of band

30MHz-1000MHz spurious emissions

1000MHz-9000MHz spurious emissions


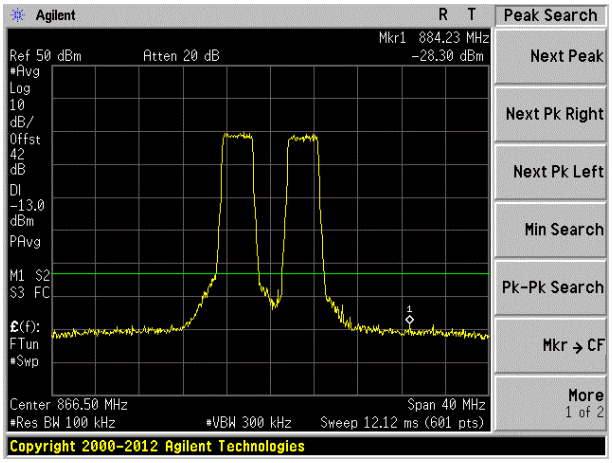
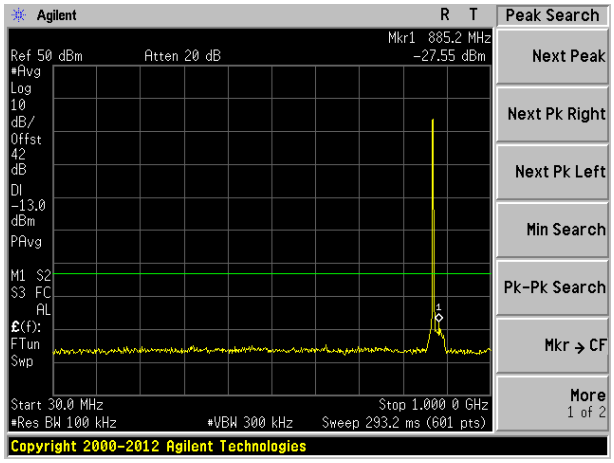
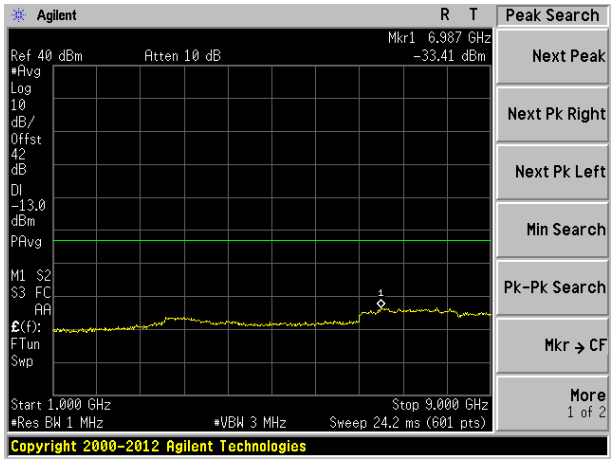
Intermodulation of LTE 1.4MHz Bandwidth

Intermodulation - Low part of band

30MHz-1000MHz spurious emissions

1000MHz-9000MHz spurious emissions


Intermodulation - High part of band

30MHz-1000MHz spurious emissions

1000MHz-9000MHz spurious emissions


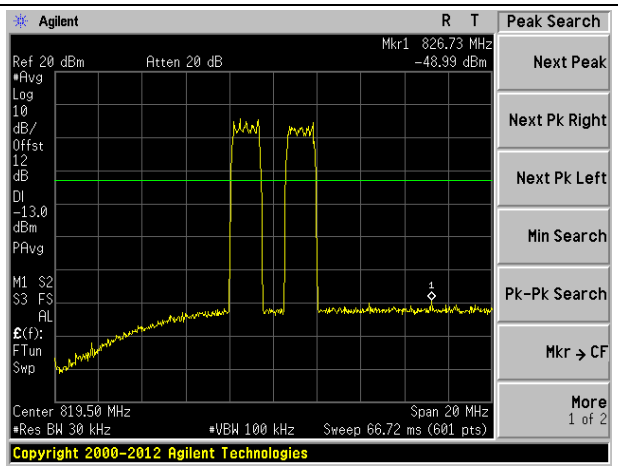
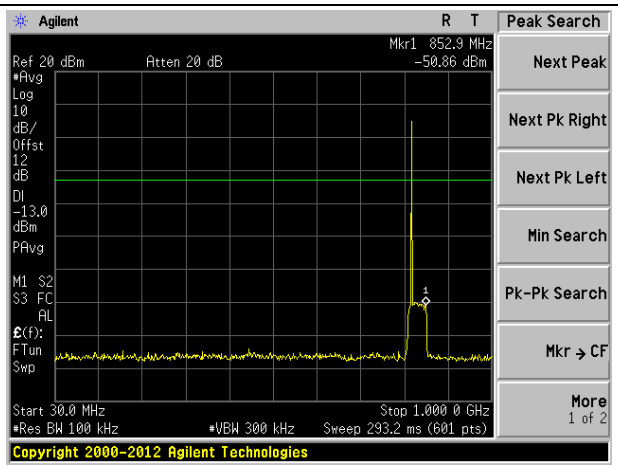
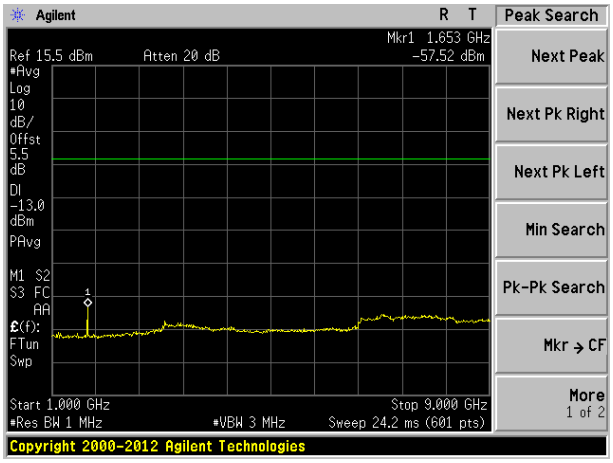
Intermodulation of LTE 3MHz Bandwidth

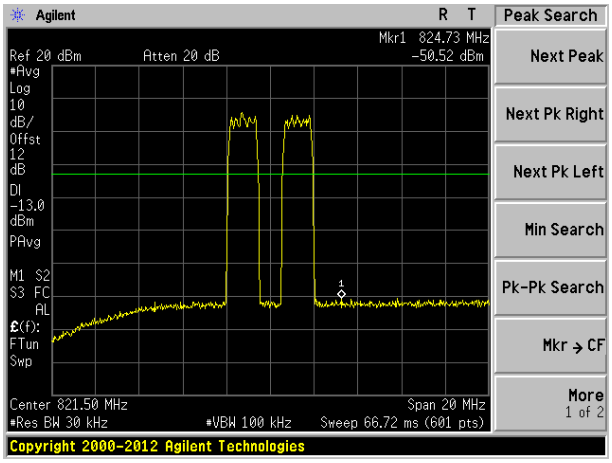
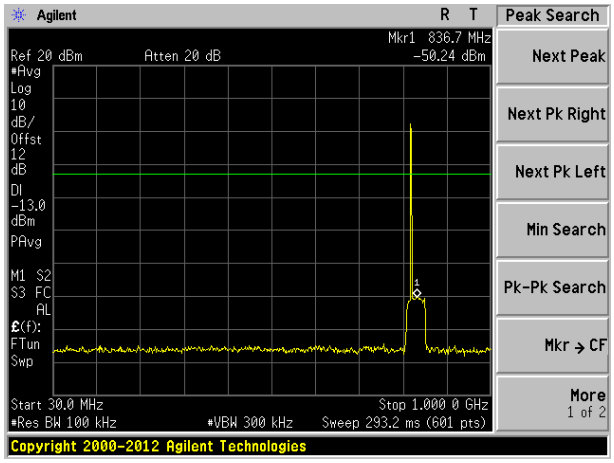
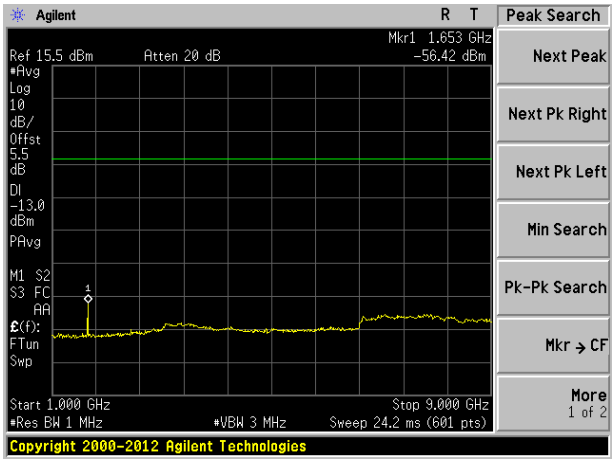
Intermodulation - Low part of band

30MHz-1000MHz spurious emissions

1000MHz-9000MHz spurious emissions


Intermodulation - High part of band

30MHz-1000MHz spurious emissions

1000MHz-9000MHz spurious emissions


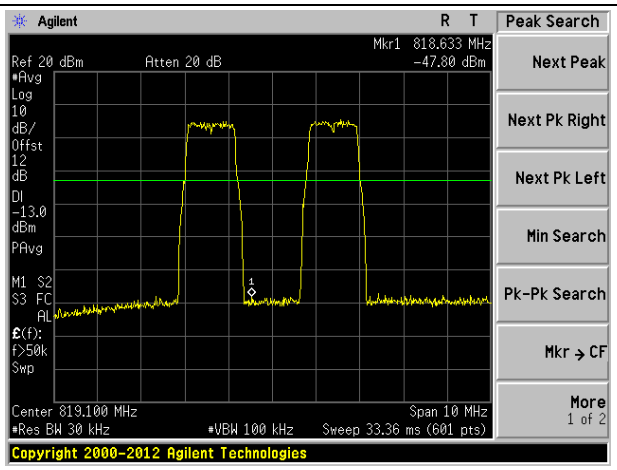
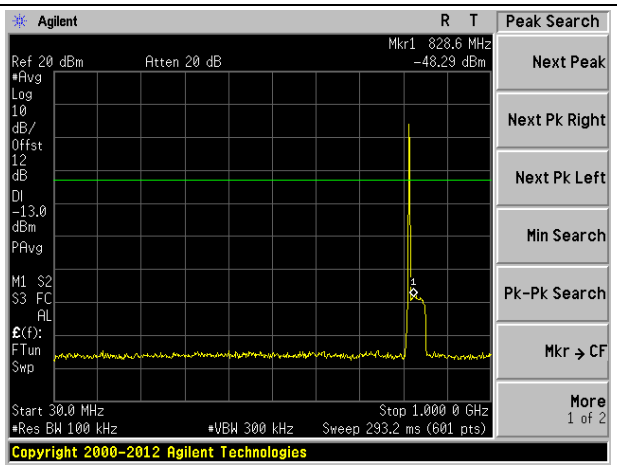
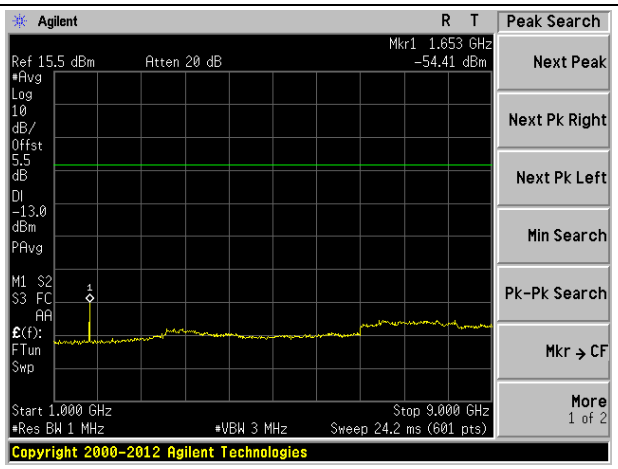
Uplink:

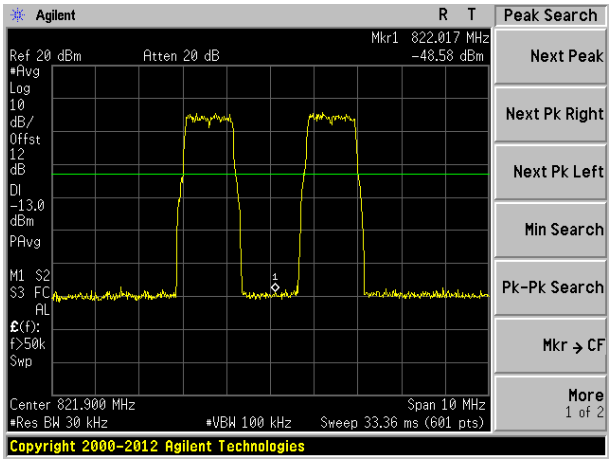
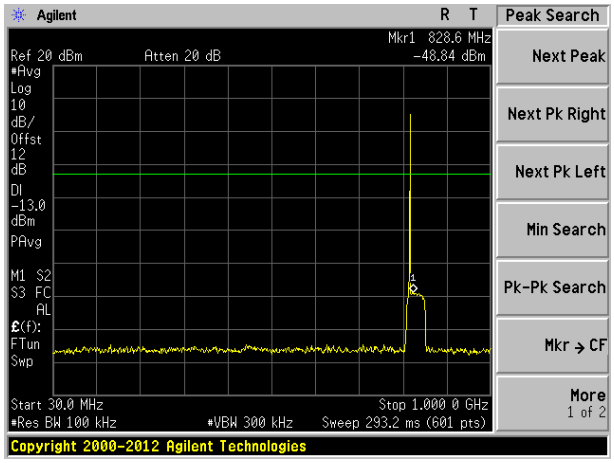
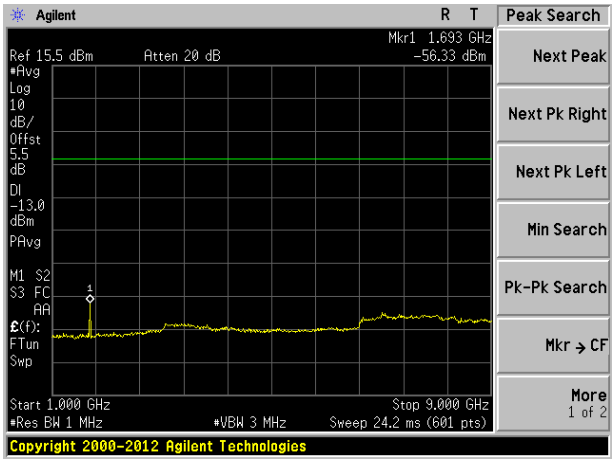
Intermodulation of CDMA

Intermodulation - Low part of band

30MHz-1000MHz spurious emissions

1000MHz-9000MHz spurious emissions


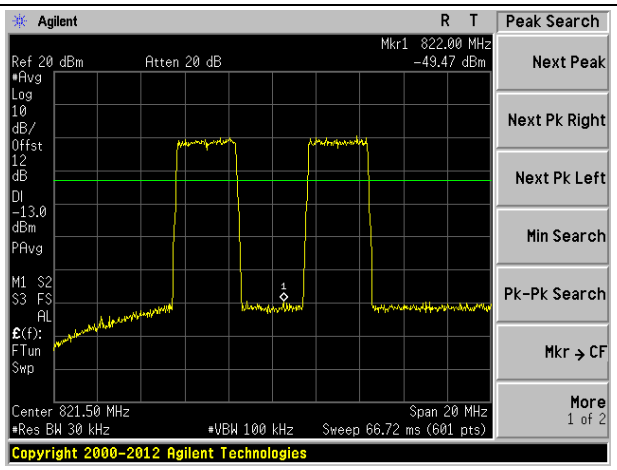
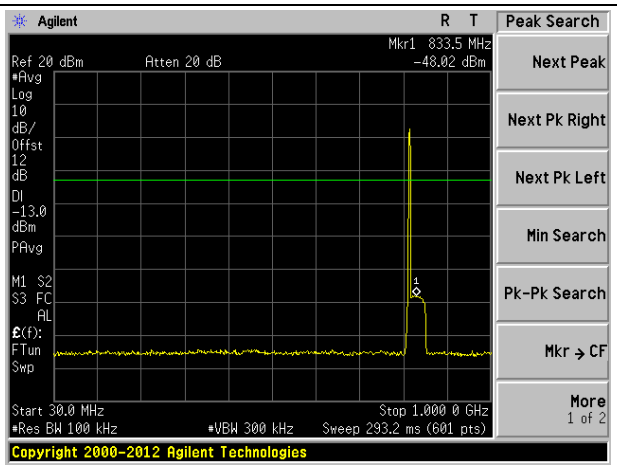
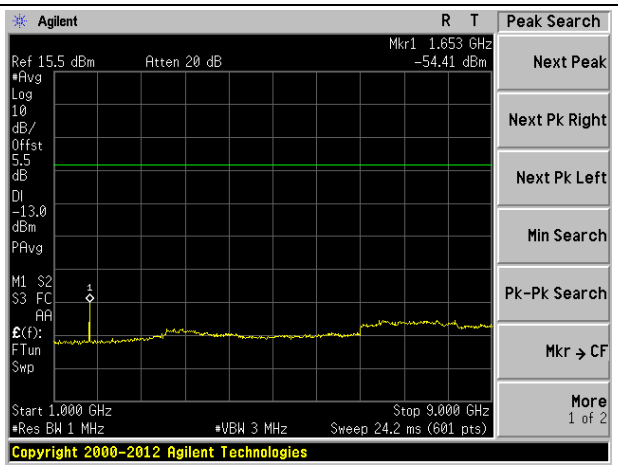
Intermodulation - High part of band

30MHz-1000MHz spurious emissions

1000MHz-9000MHz spurious emissions


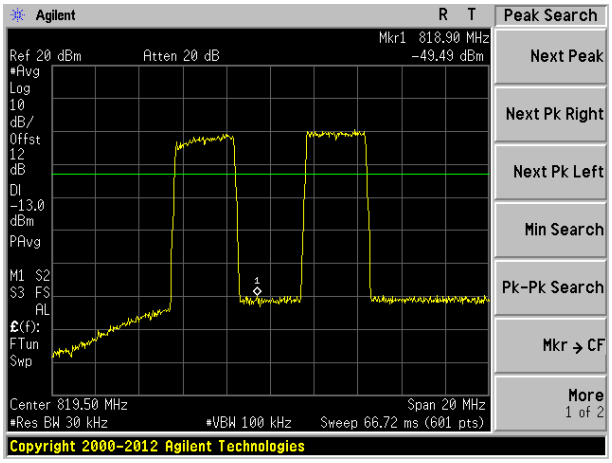
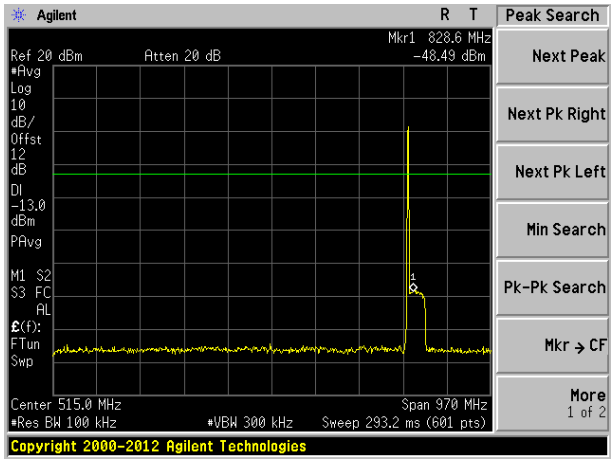
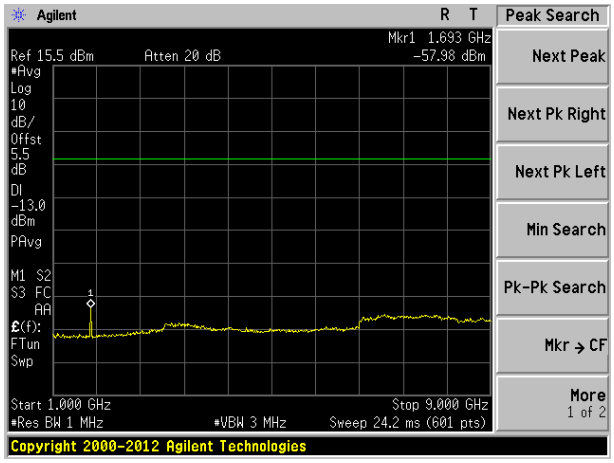
Intermodulation of LTE 1.4MHz Bandwidth

Intermodulation - Low part of band

30MHz-1000MHz spurious emissions

1000MHz-9000MHz spurious emissions


Intermodulation - High part of band

30MHz-1000MHz spurious emissions

1000MHz-9000MHz spurious emissions


Intermodulation of LTE 3MHz Bandwidth

Intermodulation - Low part of band

30MHz-1000MHz spurious emissions

1000MHz-9000MHz spurious emissions


Intermodulation - High part of band

30MHz-1000MHz spurious emissions

1000MHz-9000MHz spurious emissions


12 FIELD STRENGTH OF SPURIOUS RADIATION MEASUREMENT

12.1 Standard Applicable

According to FCC § 2.1053 and § 90.691

12.2 EUT Setup (Block Diagram of Configuration)

Please refer the section §6.2 Configuration of Tested System.

12.3 Measurement Procedure

1. The EUT RF output port was connected to 50 ohm RF load.
2. The EUT input port was connected to signal generator and was setup to transmit maximum power.
3. The measurement antenna was placed at a distance of 3 meters from the EUT.
4. During the tests, the antenna height and polarization as well as EUT azimuth were varied in order to identify the maximum level of emissions from EUT.
5. The frequency range up to 10-th harmonic of each of the three fundamental frequencies (low, middle and high channels) was investigated. The worst case of emissions was reported.
6. For spurious emissions attenuation, the substitution method was used.
7. The EUT was substituted by a reference antenna (half-wave dipole – below 1 GHz, or Horn antenna – above 1 GHz), connected to a signal generator.
8. The signal generator output level was adjusted to obtain the same reading as from EUT. The EIRP at the spurious emissions frequency was calculated as follows:

   EIRP = S.G. output (dBm) + Antenna Gain(dBi) – Cable Loss (dB)
9. The antenna substitution method is used to determine the equivalent radiated power at spurious frequencies. The spurious emissions are measured at a distance of 3 meters. The EUT is then replaced with a reference substitution antenna with a known gain referenced to a dipole. This antenna is fed with a signal at the spurious frequency. The level of the signal is adjusted to repeat the previously measured level. The resulting eirp is the signal level fed to the reference antenna corrected for gain referenced to an isotropic dipole
10. From KDB (AMPLIFIER, BOOSTER, AND REPEATER REMINDER SHEET): Radiated spurs (enclosure) – Use of CW signal (low, mid. and high freq.) is acceptable rather than all modulations.
11. The maximum RFI field strength was determined during the measurement by rotating the turntable (±180 degrees) and varying the height of the receive antenna (h = 1 ... 4 m) as like defined in ANSI C63.4. A measurement receiver has been used with a RBW 120 kHz up to 1 GHz and 1 MHz above 1 GHz. Steps with during pre measurement was half the RBW.
12. Both, the Fully Anechoic Chamber (FAC) and the Semi Anechoic Chamber (SAC) fulfil the requirements of ANSI C63.4 and CISPR 16-1-4 with regards to NSA and SVSWR.

12.4 Measurement data

Downlink mode

Test mode:	Below 1G		Test channel:	Lowest channel
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
36.95	Vertical	-44.58	-13.00	Pass
72.53	V	-43.92		
232.47	V	-45.47		
522.71	V	-48.55		
628.31	V	---		
776.88	V	---		
41.96	Horizontal	-47.14	-13.00	Pass
75.83	H	-45.10		
126.85	H	-42.96		
455.83	H	-48.57		
742.31	H	---		
828.59	H	---		
Test mode:	**Above 1G**		**Test channel:**	**Lowest channel**
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
2153.00	Vertical	-53.85	-13.00	Pass
3954.00	V	-55.66		
4672.00	V	-54.74		
7231.00	V	---		
8235.00	V	---		
1754.00	Horizontal	-55.36	-13.00	Pass
2395.00	H	-54.61		
3958.00	H	-52.96		
6574.00	H	---		
7395.00	H	---		

Test mode:	Below 1G		Test channel:	Middle channel
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
32.69	Vertical	-42.82	-13.00	Pass
72.58	V	-45.66		
186.47	V	-43.51		
356.41	V	-42.63		
531.34	V	---		
653.45	V	---		
43.56	Horizontal	-45.69	-13.00	Pass
124.71	H	-44.28		
243.85	H	-43.67		
355.75	H	-45.73		
495.81	H	---		
836.59	H	---		
Test mode:	**Above 1G**		**Test channel:**	**Middle channel**
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
1645.00	Vertical	-53.85	-13.00	Pass
2649.00	V	-56.55		
4384.00	V	-54.69		
5935.00	V	---		
7341.00	V	---		
1358.00	Horizontal	-58.47	-13.00	Pass
2485.00	H	-55.37		
4352.00	H	-54.85		
5539.00	H	---		
6728.00	H	---		

Test mode:	Below 1G		Test channel:	Highest channel
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
35.75	Vertical	-44.65	-13.00	Pass
69.52	V	-46.76		
212.74	V	-45.82		
395.47	V	-44.93		
573.52	V	---		
655.24	V	---		
42.53	Horizontal	-43.26	-13.00	Pass
146.22	H	-45.86		
385.96	H	-46.93		
425.58	H	-42.75		
638.14	H	---		
715.38	H	---		
Test mode:	**Above 1G**		**Test channel:**	**Highest channel**
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
1549.00	Vertical	-52.35	-13.00	Pass
2533.00	V	-54.96		
3869.00	V	-53.97		
5283.00	V	---		
7253.00	V	---		
2534.00	Horizontal	-53.55	-13.00	Pass
3854.00	H	-55.69		
4698.00	H	-52.85		
5863.00	H	---		
7259.00	H	---		

Remark:
1. Remark"---" means that the emission level is too low to be measured

Uplink mode

Test mode:	Below 1G		Test channel:	Lowest channel
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
33.56	Vertical	-43.68	-13.00	Pass
75.72	V	-45.53		
138.53	V	-42.88		
242.35	V	-46.07		
356.76	V	---		
486.75	V	---		
36.53	Horizontal	-45.27	-13.00	Pass
114.52	H	-44.39		
235.70	H	-42.07		
384.74	H	-45.59		
432.96	H	---		
527.04		---		
Test mode:	**Above 1G)**		**Test channel:**	**Lowest channel**
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
1438.00	Vertical	-55.38	-13.00	Pass
2751.00	V	-52.75		
3869.00	V	-56.09		
5782.00	V	---		
7396.00	V	---		
2753.00	Horizontal	-53.96	-13.00	Pass
3869.00	H	-55.27		
4576.00	H	-55.20		
5927.00	H	---		
7356.00	H	---		

Test mode:	Below 1G		Test channel:	Middle channel
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
32.96	Vertical	-45.12	-13.00	Pass
69.69	V	-44.38		
121.35	V	-44.96		
245.28	V	-42.38		
385.27	V	---		
469.58	V	---		
45.25	Horizontal	-42.75	-13.00	Pass
127.65	H	-45.39		
285.70	H	-43.71		
352.89	H	-44.33		
486.41	H	---		
752.36	H	---		
Test mode:	**Aabove 1G**		**Test channel:**	**Middle channel**
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
1586.00	Vertical	-56.93	-13.00	Pass
2734.00	V	-57.83		
4375.00	V	-55.22		
5396.00	V	---		
7283.00	V	---		
1539.00	Horizontal	-54.74	-13.00	Pass
3852.00	H	-55.86		
4358.00	H	-56.33		
5374.00	H	---		
6827.00	H	---		

Test mode:	Below 1G		Test channel:	Highest channel
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
35.69	Vertical	-45.36	-13.00	Pass
68.83	V	-44.27		
127.54	V	-45.66		
245.53	V	-46.72		
356.45	V	---		
538.55	V	---		
33.69	Horizontal	-42.37	-13.00	Pass
123.56	H	-46.39		
243.86	H	-44.22		
352.74	H	-43.75		
465.44	H	---		
652.57	H	---		
Test mode:	**Above 1G**		**Test channel:**	**Highest channel**
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
1955.00	Vertical	-53.58	-13.00	Pass
3568.00	V	-56.38		
4822.00	V	-57.43		
5762.00	V	---		
7531.00	V	---		
2438.00	Horizontal	-55.71	-13.00	Pass
3396.00	H	-53.69		
4826.00	H	-54.57		
5769.00	H	---		
7235.00	H	---		

Remark:
1. Remark”---“ means that the emission level is too low to be measured

13 FREQUENCY STABILITY

13.1 Standard Applicable

According to FCC § 2.1055 and § 90.213

13.2 Test setup

Please refer the section §6.2 Configuration of Tested System.

13.3 Test Procedure

1. The EUT was placed inside the temperature chamber.
2. The RF output port was connected to a spectrum analyzer.
3. The level of RF input signal shall be increased, until the maximum output power per channel, declared by client, is reached.
4. After the temperature stabilized for approximately 20 min, the transmitting frequency was measured by the spectrum analyzer and recorded.
5. At room temperature, the frequency was measured when EUT was powered with the nominal voltage and with 85% and 115% of the nominal voltage.

13.4 Test Result

Passed.

Downlink:

CDMA mode					
Reference Frequency: Middle channel=865.50MHz					
Voltage with nominal Voltage	Power Supplied (VAC)	Temperature (℃)	Frequency Error (Hz)	Frequency Error (ppm)	Result
100%	120V	-40	18	0.0208	Passed
100%		-30	17	0.0196	Passed
100%		-20	14	0.0162	Passed
100%		-10	11	0.0127	Passed
100%		0	8	0.0092	Passed
100%		10	9	0.0104	Passed
100%		20	11	0.0127	Passed
100%		30	13	0.0150	Passed
100%		40	14	0.0162	Passed
100%		50	17	0.0196	Passed
100%		55	18	0.0208	Passed
85%	102V	20	17	0.0196	Passed
115%	138V	20	14	0.0162	Passed

Remark: EUT is specified for outdoor use with temperature range of -40° to +55° C, and was tested with its range.

Uplink:

CDMA mode					
Reference Frequency: Middle channel=820.50MHz					
Voltage with nominal Voltage	Power Supplied (VAC)	Temperature (℃)	Frequency Error (Hz)	Frequency Error (ppm)	Result
100%	120V	-40	19	0.0232	Passed
100%		-30	16	0.0195	Passed
100%		-20	14	0.0171	Passed
100%		-10	13	0.0158	Passed
100%		0	9	0.0110	Passed
100%		10	6	0.0073	Passed
100%		20	10	0.0122	Passed
100%		30	13	0.0158	Passed
100%		40	13	0.0158	Passed
100%		50	17	0.0207	Passed
100%		55	19	0.0232	Passed
85%	102V	20	16	0.0195	Passed
115%	138V	20	14	0.0171	Passed

Remark: EUT is specified for outdoor use with temperature range of -40° to +55° C, and was tested with its range.

14 OUT-OF-BAND REJECTION

14.1 Standard Applicable

According to KDB (AMPLIFIER, BOOSTER, AND REPEATER REMINDER SHEET):

Out of Band Rejection – Test for rejection of out of band signals. Filter freq. response plots are acceptable.

Please refer the section §3.3 OUT-OF-BAND REJECTION of D05 Indus Booster Basic Meas v01

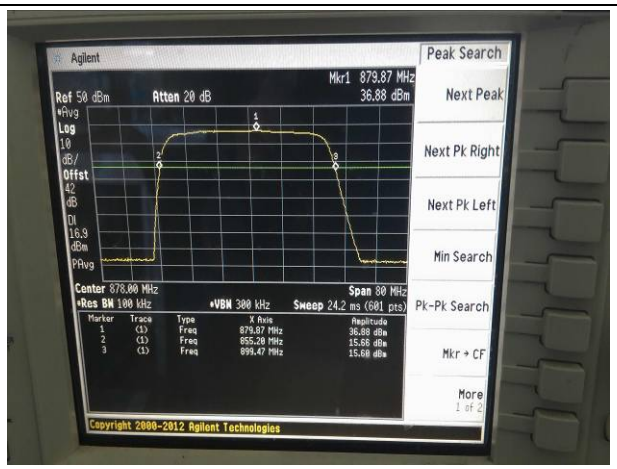
14.2 Test setup

Please refer the section §6.2 Configuration of Tested System.

14.3 Test Procedure

Please refer the section §3.3 OUT-OF-BAND REJECTION of D05 Indus Booster Basic Meas v01

14.4 Test Result

Out-of-Band Rejection	
	
Downlink	Uplink

15 POWER LINE CONDUCTED EMISSION TEST

15.1 Standard Applicable

According to FCC §15.207. The emission value for frequency within 150KHz to 30MHz shall not Exceed criteria of below chart.

Frequency range (MHz)	Limits dB(uV)	
	Quasi-peak	Average
0.15 to 0.50	79	66
0.50 to 30	73	60
Note 1.The lower limit shall apply at the transition frequencies 2.The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.		

15.2 Test setup

1. The conducted emission tests were performed in the test site, using the setup in accordance with the ANSI C63.4-2001.
2. The EUT was plug-in DC power adaptort and was placed on the center of the back edge on the test table. The peripherals like earphone was placed on the side of the EUT. The rear of the EUT and peripherals were placed flushed with the rear of the tabletop.
3. The Power adaptor was connected with 110VAC/60Hz power source.

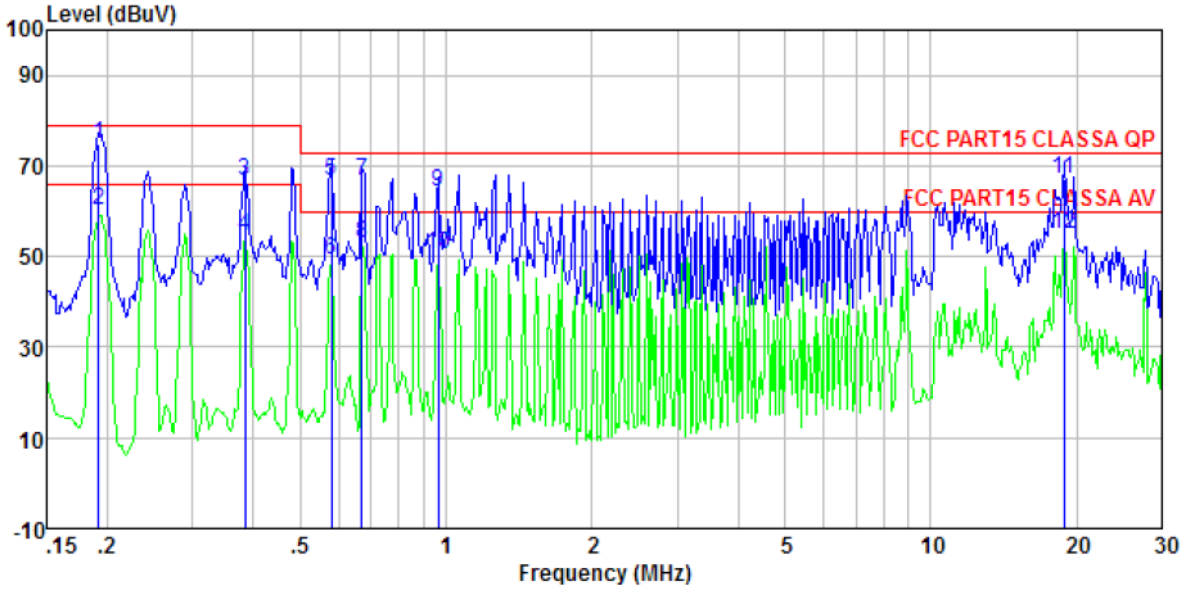
15.3 Test Procedure

1. The EUT was placed on a table which is 0.8m above ground plane.
2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
3. Repeat above procedures until all frequency measured were complete.

15.4 Measurement Result

Downlink:

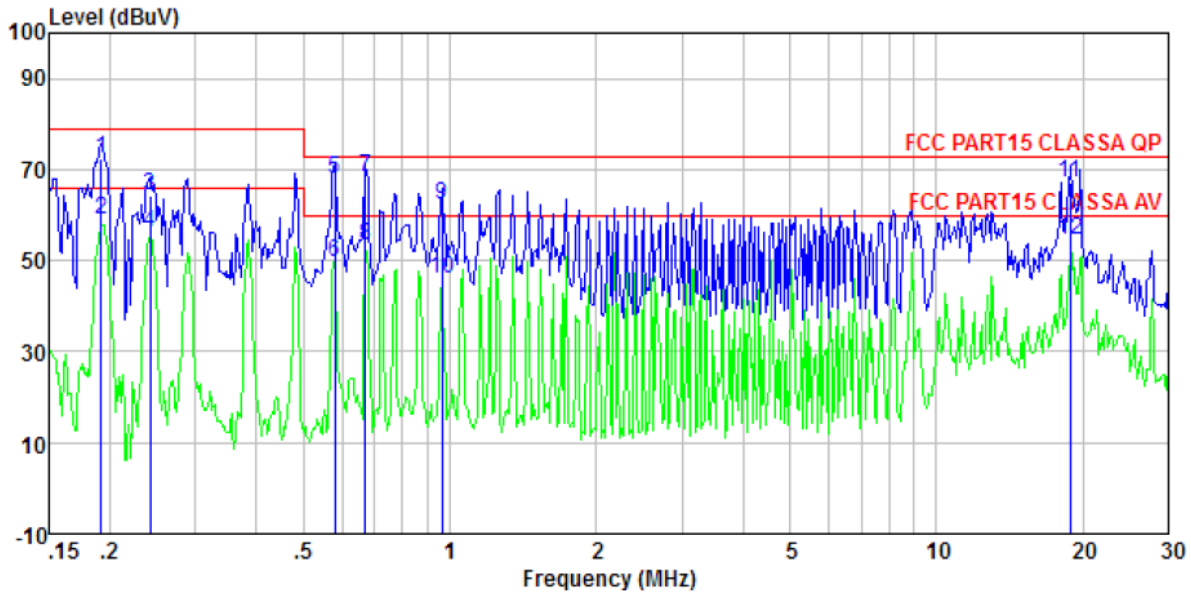
Line:



Site : Shielded room
Condition : FCC PART15 CLASSA QP LISN-2013 LINE
Job No. : 0438
Test mode : Downlink mode
Test Engineer: Sky

	Freq	Read Level	Level	Cable Loss	LISN Factor	Limit Line	Over Limit	Remark
	MHz	dBuV	dBuV	dB	dB	dBuV	dB	
1	0.192	74.55	74.82	0.13	0.14	79.00	-4.18	QP
2	0.192	60.02	60.29	0.13	0.14	66.00	-5.71	Average
3	0.385	66.37	66.58	0.10	0.11	79.00	-12.42	QP
4	0.385	54.49	54.70	0.10	0.11	66.00	-11.30	Average
5	0.579	66.35	66.60	0.12	0.13	73.00	-6.40	QP
6	0.579	48.87	49.12	0.12	0.13	60.00	-10.88	Average
7	0.672	66.32	66.59	0.13	0.14	73.00	-6.41	QP
8	0.672	52.80	53.07	0.13	0.14	60.00	-6.93	Average
9	0.963	64.15	64.42	0.13	0.14	73.00	-8.58	QP
10	0.963	50.30	50.57	0.13	0.14	60.00	-9.43	Average
11	18.820	66.54	67.31	0.22	0.55	73.00	-5.69	QP
12	18.820	54.19	54.96	0.22	0.55	60.00	-5.04	Average

Neutral:

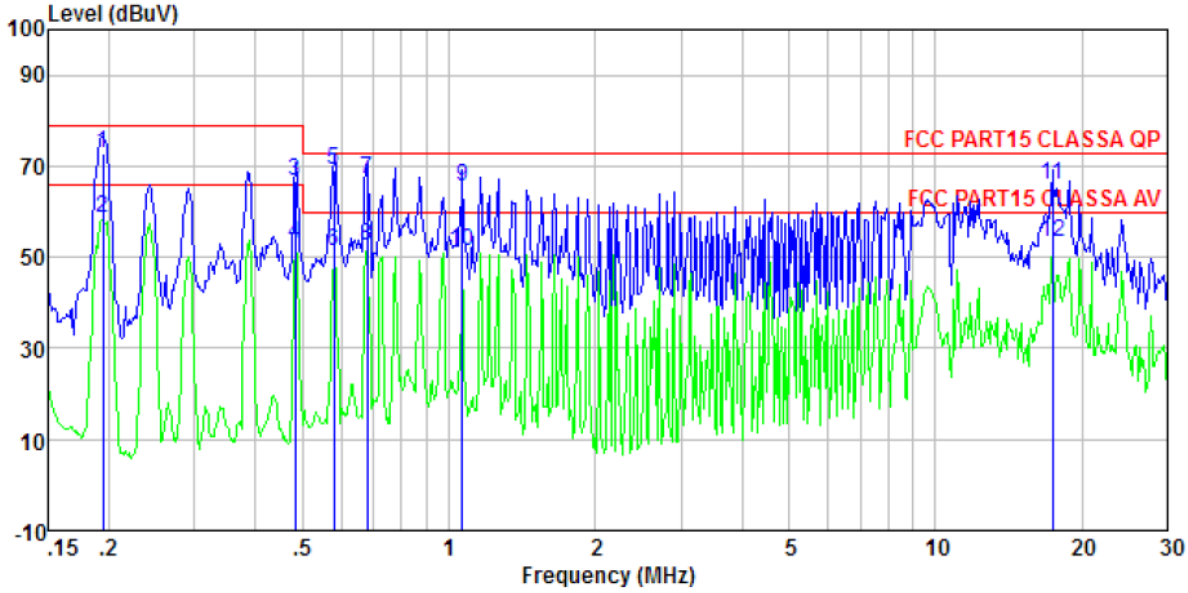


Site : Shielded room
Condition : FCC PART15 CLASSA QP LISN-2013 NEUTRAL
Job No. : 0438
Test mode : Downlink mode
Test Engineer: Sky

	Freq	Read Level	Level	Cable Loss	LISN Factor	Limit Line	Over Limit	Remark
	MHz	dBuV	dBuV	dB	dB	dBuV	dB	
1	0.192	72.33	72.53	0.13	0.07	79.00	-6.47	QP
2	0.192	58.64	58.84	0.13	0.07	66.00	-7.16	Average
3	0.242	64.22	64.40	0.12	0.06	79.00	-14.60	QP
4	0.242	55.98	56.16	0.12	0.06	66.00	-9.84	Average
5	0.579	67.54	67.73	0.12	0.07	73.00	-5.27	QP
6	0.579	49.55	49.74	0.12	0.07	60.00	-10.26	Average
7	0.672	68.14	68.34	0.13	0.07	73.00	-4.66	QP
8	0.672	53.17	53.37	0.13	0.07	60.00	-6.63	Average
9	0.963	62.16	62.36	0.13	0.07	73.00	-10.64	QP
10	0.963	45.74	45.94	0.13	0.07	60.00	-14.06	Average
11	18.820	66.35	67.03	0.22	0.46	73.00	-5.97	QP
12	18.820	53.96	54.64	0.22	0.46	60.00	-5.36	Average

Uplink:

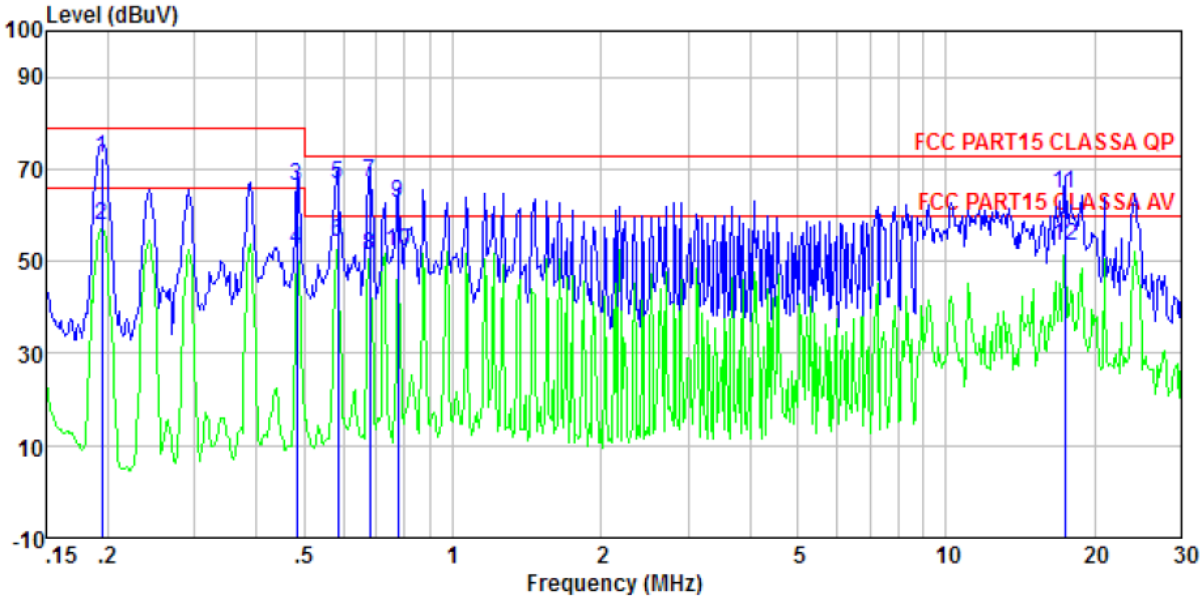
Line:



Site : Shielded room
Condition : FCC PART15 CLASSA QP LISN-2013 LINE
Job No. : 0438
Test mode : Uplink mode
Test Engineer: Sky

	Freq	Read Level	Level	Cable Loss	LISN Factor	Limit Line	Over Limit	Remark
	MHz	dBuV	dBuV	dB	dB	dBuV	dB	
1	0.194	72.36	72.63	0.13	0.14	79.00	-6.37	QP
2	0.194	58.34	58.61	0.13	0.14	66.00	-7.39	Average
3	0.484	66.57	66.80	0.11	0.12	79.00	-12.20	QP
4	0.484	52.62	52.85	0.11	0.12	66.00	-13.15	Average
5	0.579	68.99	69.24	0.12	0.13	73.00	-3.76	QP
6	0.579	51.04	51.29	0.12	0.13	60.00	-8.71	Average
7	0.679	66.75	67.02	0.13	0.14	73.00	-5.98	QP
8	0.679	52.42	52.69	0.13	0.14	60.00	-7.31	Average
9	1.065	65.36	65.63	0.13	0.14	73.00	-7.37	QP
10	1.065	50.91	51.18	0.13	0.14	60.00	-8.82	Average
11	17.383	65.21	65.91	0.22	0.48	73.00	-7.09	QP
12	17.383	52.67	53.37	0.22	0.48	60.00	-6.63	Average

Neutral:

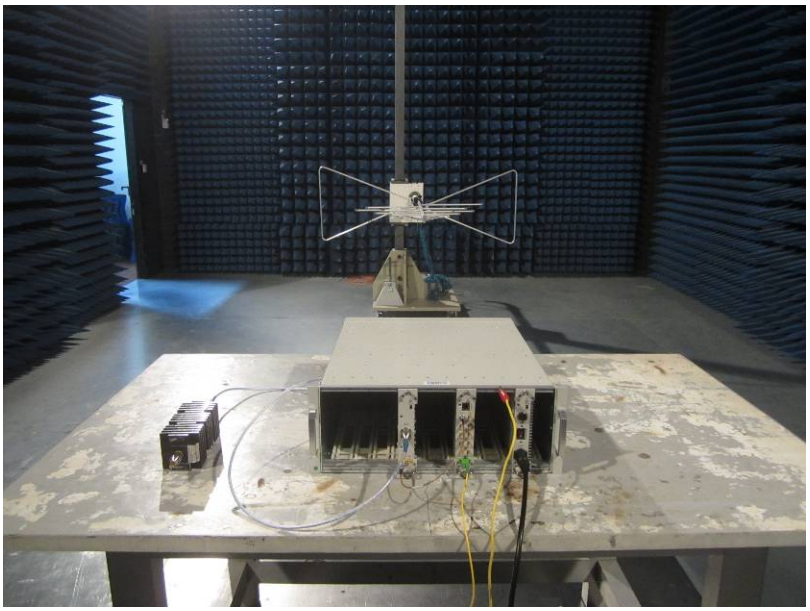


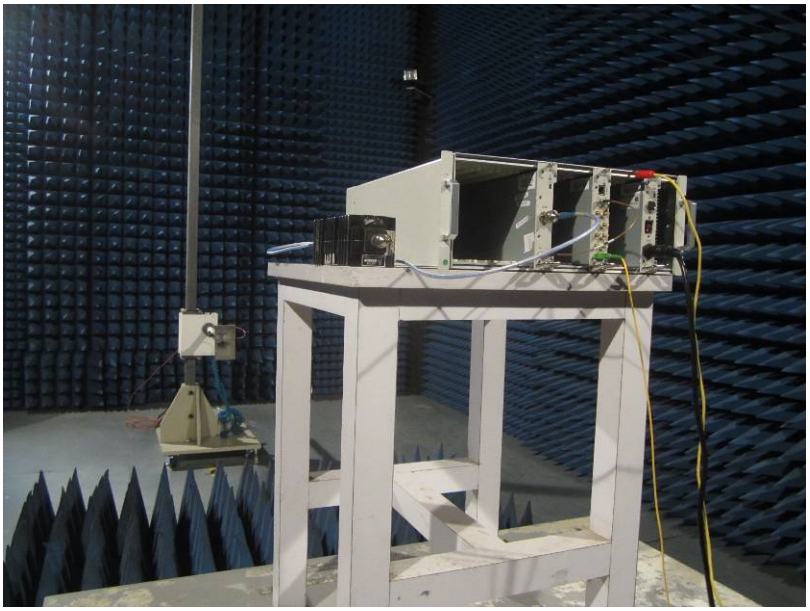
Site : Shielded room
Condition : FCC PART15 CLASSA QP LISN-2013 NEUTRAL
Job No. : 0438
Test mode : Uplink mode
Test Engineer: Sky

	Freq	Read Level	Level	Cable Loss	LISN Factor	Limit Line	Over Limit	Remark
	MHz	dBuV	dBuV	dB	dB	dBuV	dB	
1	0.194	72.36	72.56	0.13	0.07	79.00	-6.44	QP
2	0.194	57.57	57.77	0.13	0.07	66.00	-8.23	Average
3	0.484	65.99	66.16	0.11	0.06	79.00	-12.84	QP
4	0.484	52.48	52.65	0.11	0.06	66.00	-13.35	Average
5	0.585	66.60	66.79	0.12	0.07	73.00	-6.21	QP
6	0.585	53.91	54.10	0.12	0.07	60.00	-5.90	Average
7	0.679	66.78	66.98	0.13	0.07	73.00	-6.02	QP
8	0.679	51.17	51.37	0.13	0.07	60.00	-8.63	Average
9	0.775	62.36	62.56	0.13	0.07	73.00	-10.44	QP
10	0.775	51.75	51.95	0.13	0.07	60.00	-8.05	Average
11	17.383	64.21	64.83	0.22	0.40	73.00	-8.17	QP
12	17.383	52.65	53.27	0.22	0.40	60.00	-6.73	Average

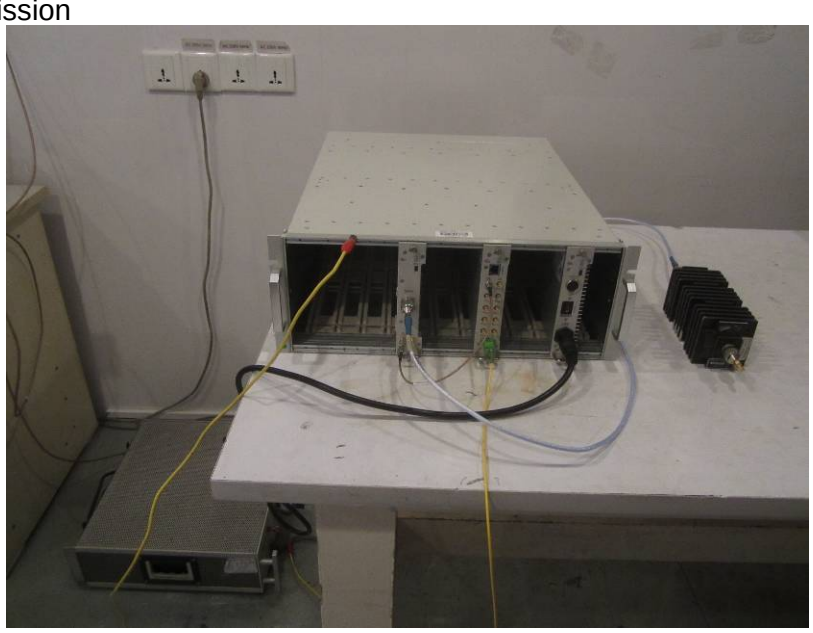
16 Test Setup Photo

Radiated Emission





Conducted Emission



17 EUT Constructional Details

Reference to the test report No. GTS16000438E01

------end------