FCC REPORT

Applicant:	BTI Wireless
Address of Applicant:	6185 Phyllis Drive #D Cypress California 90630 United States
Equipment Under Test (EUT)	
Product Name:	mBSC-C RU
Model No.:	mBSC0700-040-RUC11, mBSC0700-040-RUC12, mBSC0700-020-RUC11, mBSC0700-020-RUC12
Trade Mark:	BTI WIRELESS™
FCC ID:	WBKMBSC700FRUC
Applicable standards:	FCC CFR Title 47 Part 2:2014 FCC CFR Title 47 Part27 Subpart C:2014
Date of sample receipt:	March 10, 2016
Date of Test:	March 10-April 08, 2016
Date of report issued:	April 08, 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 08, 2016*	*Original*

Prepared By: Edward.Pan ***Date:*** *April 08, 2016*

Project Engineer

Check By: hank.yan ***Date:*** *April 08, 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; § 27.50(b)	PASS
Modulation Characteristics	§ 2.1047	N/A*
Measuring The EUT AGC Threshold	---	PASS
Passband Gain and 99% Occupied Bandwidth	§ 2.1049 ; § 27.53(g)	PASS
Spurious Emissions at Antenna Terminal	§ 2.1051; § 27.53(g)	PASS
Intermodulation	§ 2.1051; § 27.53(g)	PASS
Field Strength of Spurious Radiation	§ 2.1053; § 27.53(g)	PASS
Out of band emission, Band Edge	§ 27.53(g)	PASS
Frequency stability vs. temperature Frequency stability vs. voltage	§ 2.1055; § 27.54	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 Drive #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.:	mBSC0700-040-RUC11, mBSC0700-040-RUC12, mBSC0700-020-RUC11, mBSC0700-020-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	728MHz~746MHz
	Uplink	698MHz~716MHz
Operating Bandwidth	18MHz	
Multiple Carrier Supported	1 carrier	
Channel Spacing(s) / Bandwidth(s)	LTE: 1.4MHz; 3MHz; 5MHz; 10MHz.	
Maximun RF Output Power	Downlink: 46.31dBm(For 40W); 43.37dBm(For 20W); Uplink: 15.34dBm(For 40W); 15.38dBm(For 20W).	
Max Gain	Downlink: 62.41dB, Uplink: 62.43dB.	
Type of modulation and Designator	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 27	MISCELLANEOUS WIRELESS COMMUNICATIONS SERVICES

5.4 Test Methodology

Title 47 Part 2	General Requirements and Information for the Certification of Radio Apparatus
Title 47 Part 20	COMMERCIAL MOBILE SERVICES
Title 47 Part 27	MISCELLANEOUS WIRELESS COMMUNICATIONS 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
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 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. 25 2016	Mar. 24 2017
8	Coaxial Cable	GTS	N/A	GTS211	Mar. 25 2016	Mar. 24 2017
9	Coaxial cable	GTS	N/A	GTS210	Mar. 25 2016	Mar. 24 2017
10	Coaxial Cable	GTS	N/A	GTS212	Mar. 25 2016	Mar. 24 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

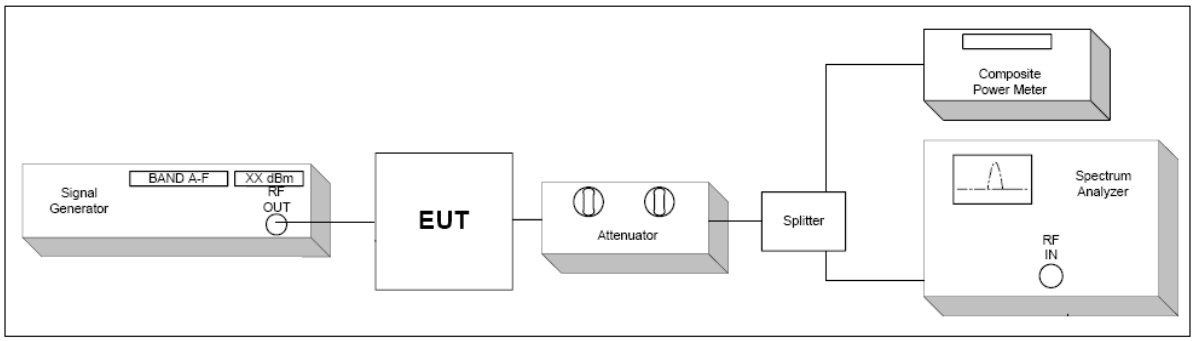
6.1 EUT Configuration

This mBSC0700-040-RUCM11,mBSC0700-040-RUCM12,mBSC0700-020-RUCM11,mBSC0700-020-RUCM12 are the Remote Unit on BTI CM system. This remote unit supports 700MHz band with the air standard 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 46.31dBm(for 40W) and 43.37dBm(for 20W) for Downlink path with Convection Cooling.

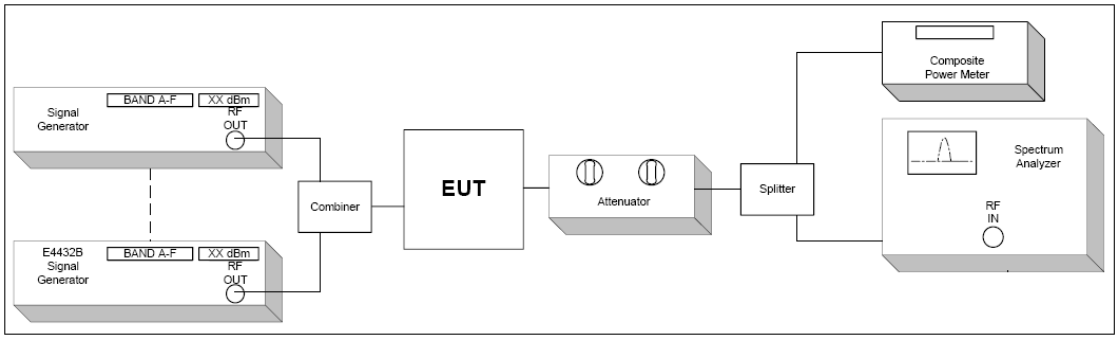
For details, refer to technical document and the user manual.

6.2 Configuration of Tested System

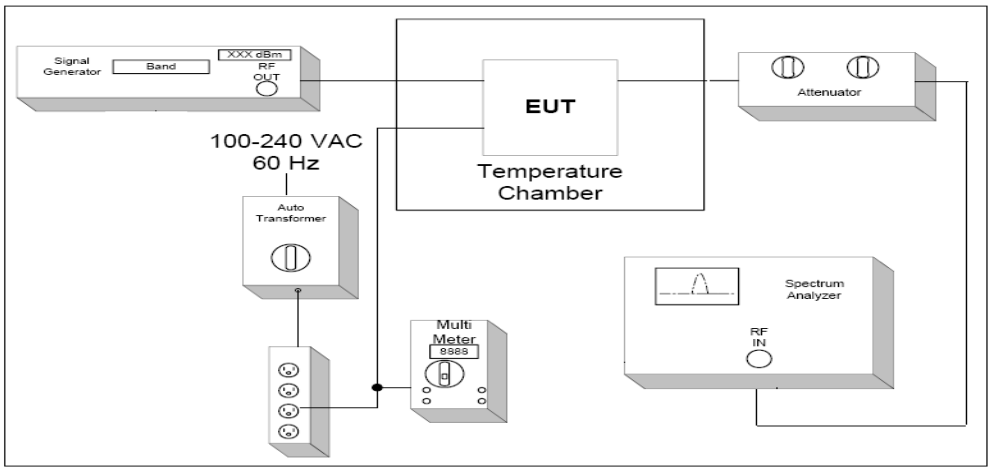
(A) RF Output Power, Occupied Bandwidth, Spurious Emissions at Antenna Terminal, Band Edge, Test Set-UP



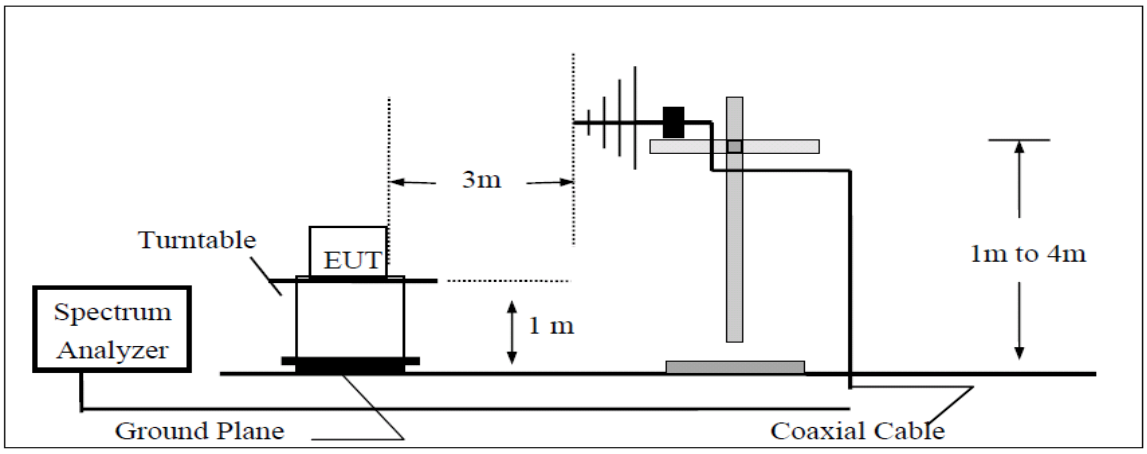
(B) Intermodulation Test Set-UP



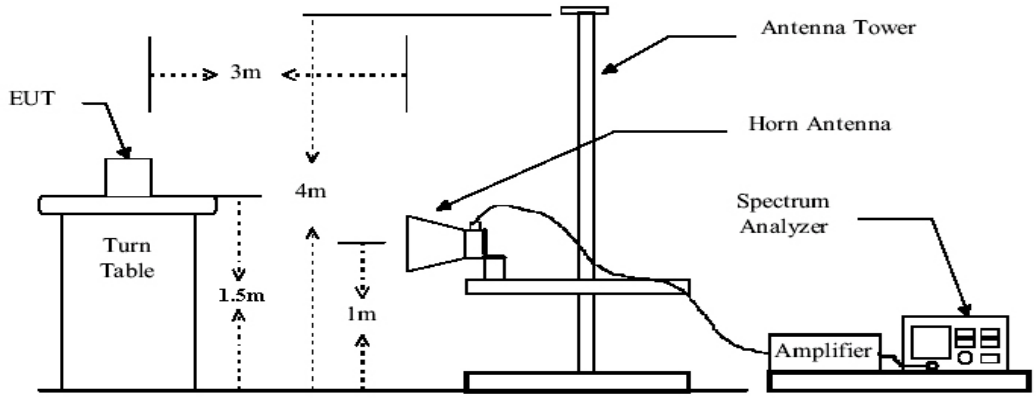
(C)Frequency stability Test Set-UP



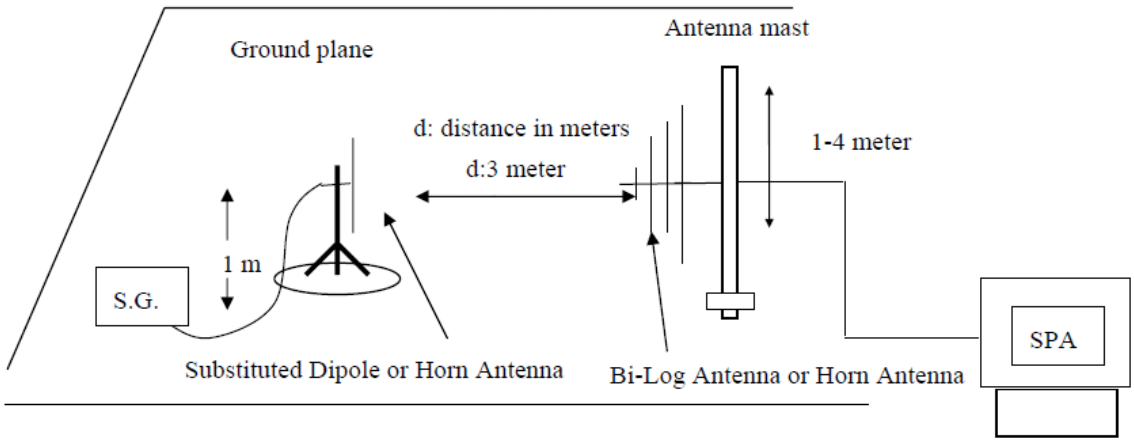
(D) Radiated Emission Test Set-Up, Frequency below 1000MHz



(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 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).

2：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.
LTE 1.4MHz Bandwidth	Single Carrier	728.70	737.00	745.30
LTE 3MHz Bandwidth	Single Carrier	729.50	737.00	744.50
LTE 5MHz Bandwidth	Single Carrier	730.50	737.00	743.50
LTE 10MHz Bandwidth	Single Carrier	733.00	737.00	741.00

Uplink:

Operating Mode(TX)	Channels No. / Multi- Carriers	Channels frequency (MHz)		
		Low Ch.	Mid Ch.	High Ch.
LTE 1.4MHz Bandwidth	Single Carrier	698.70	707.00	715.30
LTE 3MHz Bandwidth	Single Carrier	699.50	707.00	714.50
LTE 5MHz Bandwidth	Single Carrier	700.50	707.00	713.50
LTE 10MHz Bandwidth	Single Carrier	703.00	707.00	711.00

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
Multi-bandwidth	LTE: 1.4MHz; 3MHz; 5MHz; 10MHz.
Modulation type	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 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 MEASUREMENT

7.1 Standard Applicable

According to FCC § 2.1046 and § 27.50(b).

7.2 Test setup

Please refer the section §6.2 Configuration of Tested System.

7.3 Measurement Procedure

Fixed and base stations transmitting a signal with an emission bandwidth greater than 1 MHz must not exceed an ERP of 1000 watts/MHz and an antenna height of 305 m HAAT, except that antenna heights greater than 305 m HAAT are permitted if power levels are reduced below 1000 watts/MHz ERP in accordance with Table 3 of this section

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 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
LTE	LTE 1.4MHz Bandwidth	Low	46.22	41.88	29.91	Compliant
		Middle	46.31	42.76	30.54	Compliant
		High	46.27	42.36	30.26	Compliant
	LTE 3MHz Bandwidth	Low	46.24	42.07	14.02	Compliant
		Middle	46.30	42.66	14.22	Compliant
		High	46.17	41.40	13.80	Compliant
	LTE 5MHz Bandwidth	Low	46.15	41.21	8.24	Compliant
		Middle	46.28	42.46	8.49	Compliant
		High	46.13	41.02	8.20	Compliant
	LTE 10MHz Bandwidth	Low	46.16	41.30	4.13	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
LTE	LTE 1.4MHz Bandwidth	Low	15.22	0.0333	0.0238	Compliant
		Middle	15.34	0.0342	0.0244	Compliant
		High	15.21	0.0332	0.0237	Compliant
	LTE 3MHz Bandwidth	Low	15.20	0.0331	0.0110	Compliant
		Middle	15.31	0.0340	0.0113	Compliant
		High	15.14	0.0327	0.0109	Compliant
	LTE 5MHz Bandwidth	Low	15.15	0.0327	0.0065	Compliant
		Middle	15.28	0.0337	0.0067	Compliant
		High	15.24	0.0334	0.0067	Compliant
	LTE 10MHz Bandwidth	Low	15.18	0.0330	0.0033	Compliant
		Middle	15.27	0.0337	0.0034	Compliant
		High	15.15	0.0327	0.0033	Compliant

20W

Downlink:

Test mode	Carrier Conf.	Channel	Average Power （dBm）	Average Power （W）	RF Output Power(W/MHz)	Result
LTE	LTE 1.4MHz Bandwidth	Low	43.15	20.65	14.75	Compliant
		Middle	43.37	21.73	15.52	Compliant
		High	43.19	20.84	14.89	Compliant
	LTE 3MHz Bandwidth	Low	43.21	20.94	6.98	Compliant
		Middle	43.35	21.63	7.21	Compliant
		High	43.18	20.80	6.93	Compliant
	LTE 5MHz Bandwidth	Low	43.14	20.61	4.12	Compliant
		Middle	43.28	21.28	4.26	Compliant
		High	43.22	20.99	4.20	Compliant
	LTE 10MHz Bandwidth	Low	43.21	20.94	2.09	Compliant
		Middle	43.25	21.13	2.11	Compliant
		High	43.13	20.56	2.06	Compliant

Uplink:

Test mode	Carrier Conf.	Channel	Average Power （dBm）	Average Power （W）	RF Output Power(W/MHz)	Result
LTE	LTE 1.4MHz Bandwidth	Low	15.24	0.0334	0.0239	Compliant
		Middle	15.38	0.0345	0.0247	Compliant
		High	15.21	0.0332	0.0237	Compliant
	LTE 3MHz Bandwidth	Low	15.25	0.0335	0.0112	Compliant
		Middle	15.33	0.0341	0.0114	Compliant
		High	15.21	0.0332	0.0111	Compliant
	LTE 5MHz Bandwidth	Low	15.16	0.0328	0.0066	Compliant
		Middle	15.23	0.0333	0.0067	Compliant
		High	15.06	0.0321	0.0064	Compliant
	LTE 10MHz Bandwidth	Low	15.14	0.0327	0.0033	Compliant
		Middle	15.30	0.0339	0.0034	Compliant
		High	15.22	0.0333	0.0033	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.		
LTE	1.4MHz	8.36	8.25	8.69	13	Compliant
	3MHz	8.28	8.15	8.42	13	Compliant
	5MHz	8.16	8.34	8.24	13	Compliant
	10MHz	8.12	8.33	8.29	13	Compliant

Uplink:

Test mode	Carrier Conf.	Peak to Average Ratio (dB)			Limit (dB)	Result
		Low Ch.	Middle Ch.	High Ch.		
LTE	1.4MHz	7.25	8.24	8.14	13	Compliant
	3MHz	8.06	7.88	8.21	13	Compliant
	5MHz	8.15	8.32	8.28	13	Compliant
	10MHz	8.32	8.26	8.19	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.	
LTE	1.4MHz	47.36	47.59	47.38	Compliant
	3MHz	47.33	47.57	47.26	Compliant
	5MHz	47.33	47.46	47.31	Compliant
	10MHz	47.25	47.51	47.33	Compliant

Uplink:

Test mode	Carrier Conf.	AGC threshold level （dB）			Result
		Low Ch.	Middle Ch.	High Ch.	
LTE	1.4MHz	16.45	16.68	16.47	Compliant
	3MHz	16.44	16.55	16.42	Compliant
	5MHz	16.35	16.61	16.35	Compliant
	10MHz	16.33	16.46	16.42	Compliant

9 PASSBAND GAIN AND 99% OCCUPIED BANDWIDTH

9.1 Standard Applicable

According to FCC § 2.1049 , § 27.53(g)

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.

RBW= 1% to 5 % of the anticipated OBW

VBW≥3*RBW Sweep: Auto

9.4 Test Result

Pass band Gain

Downlink:

Test mode	Carrier Conf.	Channel	Passband Gain (dB)	Nominal Gain (dB)	Result
LTE	LTE 1.4MHz Bandwidth	Low	62.26	62±0.5dB	Compliant
		Middle	62.41		Compliant
		High	62.32		Compliant
	LTE 3MHz Bandwidth	Low	62.15		Compliant
		Middle	62.37		Compliant
		High	62.24		Compliant
	LTE 5MHz Bandwidth	Low	62.21		Compliant
		Middle	62.33		Compliant
		High	62.24		Compliant
	LTE 10MHz Bandwidth	Low	62.21		Compliant
		Middle	62.37		Compliant
		High	62.24		Compliant

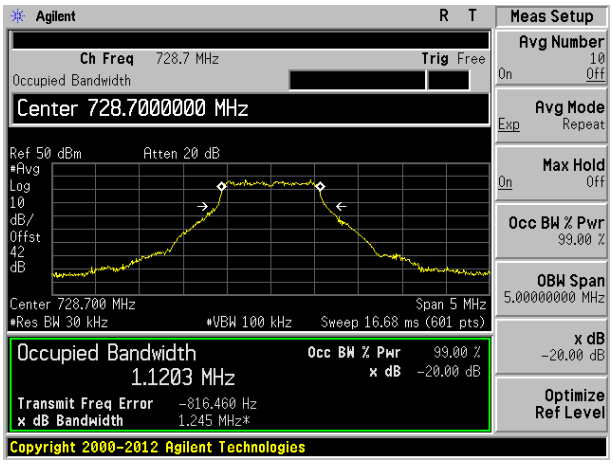
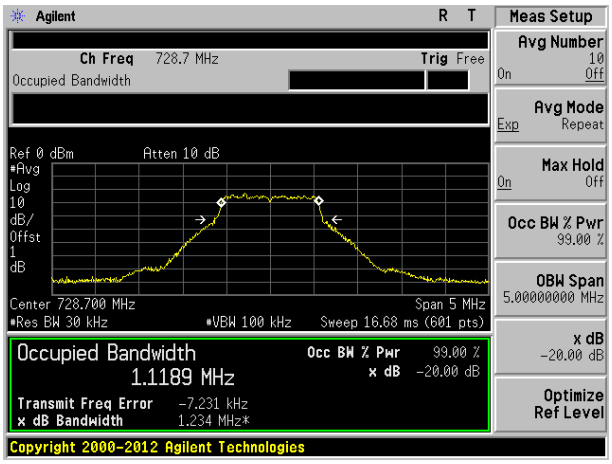
Uplink:

Test mode	Carrier Conf.	Channel	Passband Gain (dB)	Nominal Gain (dB)	Result
LTE	LTE 1.4MHz Bandwidth	Low	62.31	62±0.5dB	Compliant
		Middle	62.43		Compliant
		High	62.33		Compliant
	LTE 3MHz Bandwidth	Low	62.19		Compliant
		Middle	62.32		Compliant
		High	62.20		Compliant
	LTE 5MHz Bandwidth	Low	62.18		Compliant
		Middle	62.36		Compliant
		High	62.29		Compliant
	LTE 10MHz Bandwidth	Low	62.17		Compliant
		Middle	62.33		Compliant
		High	62.15		Compliant

Input/output Bandwidth Comparison

Downlink:

Input/output Bandwidth Comparison for LTE 1.4MHz Bandwidth

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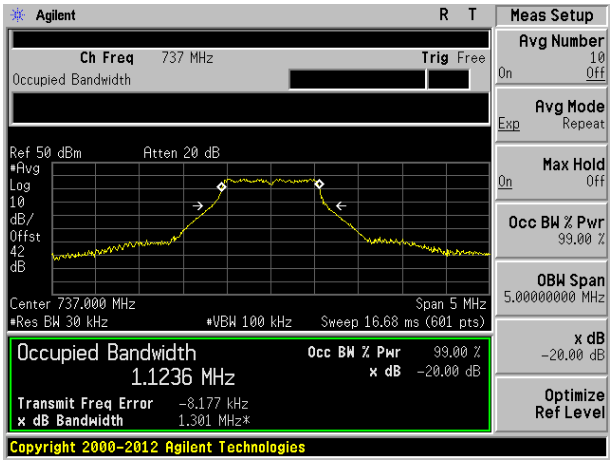
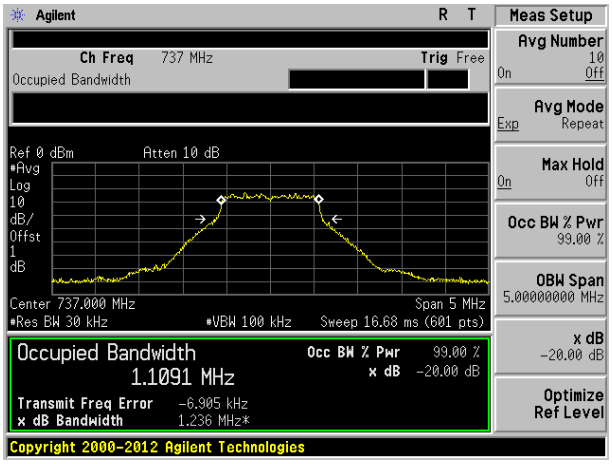
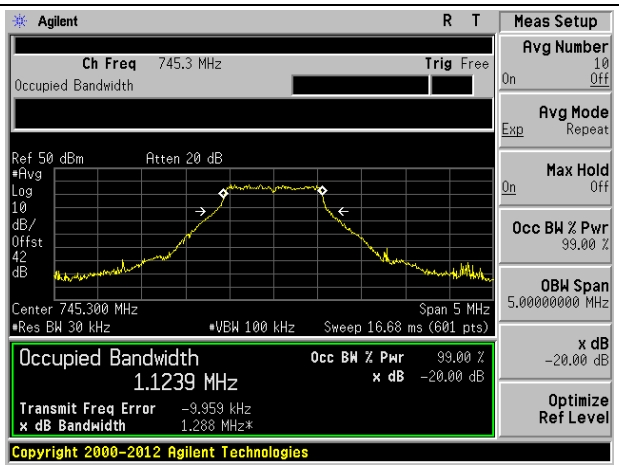
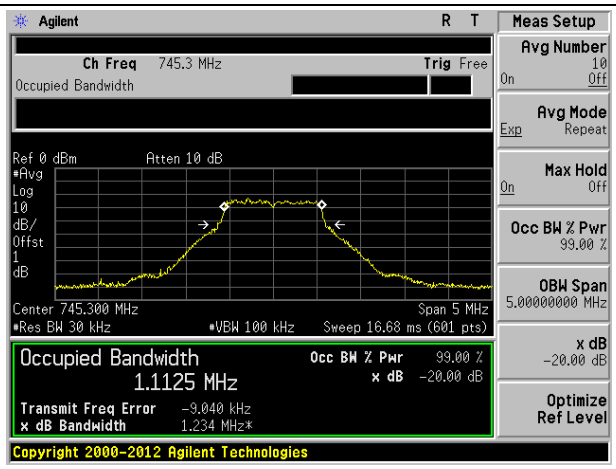
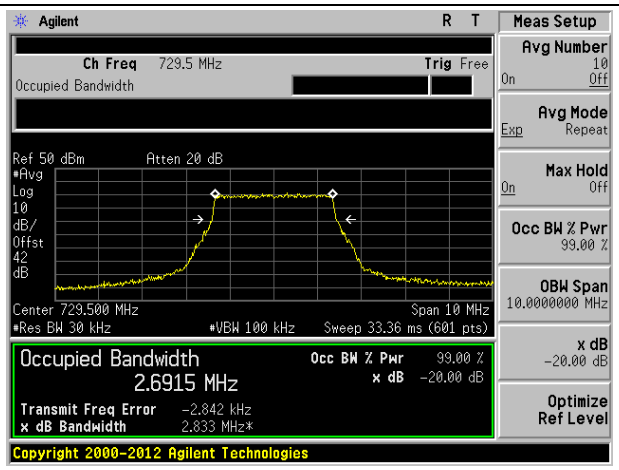
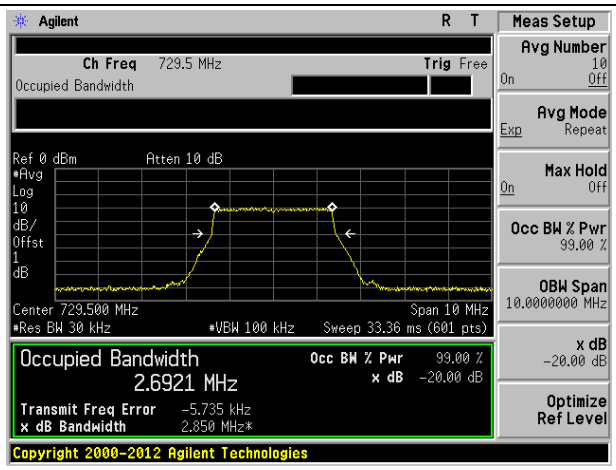
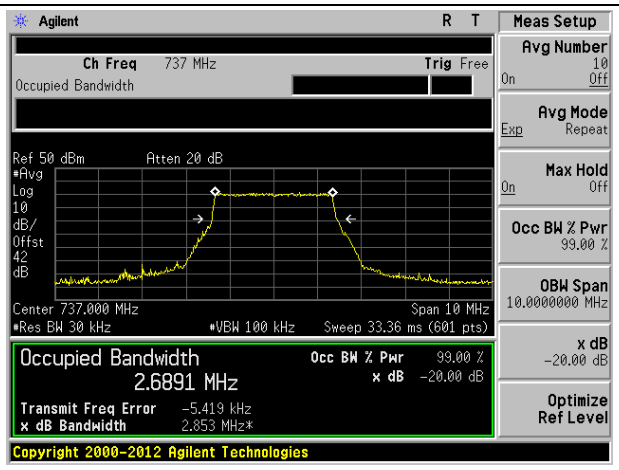
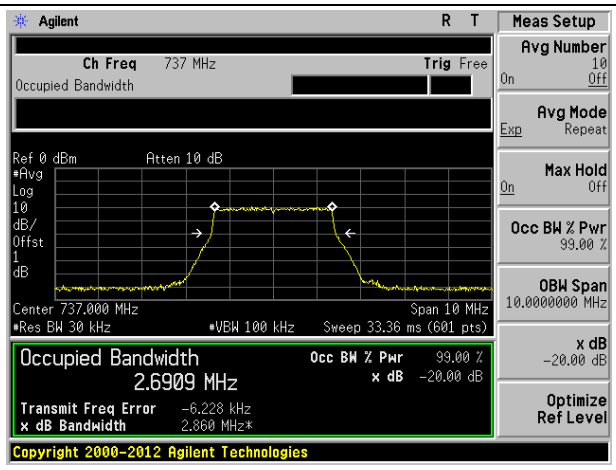
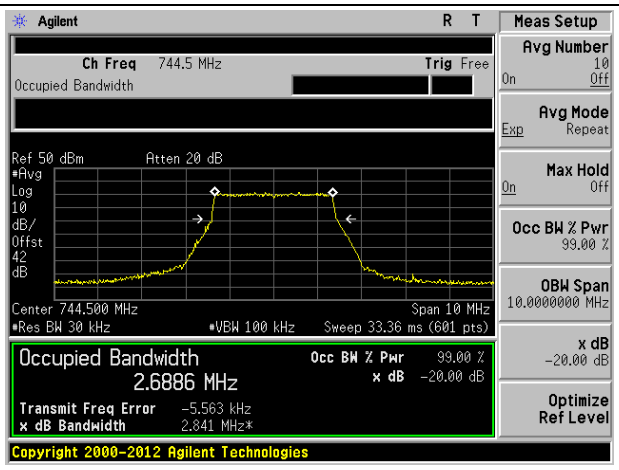
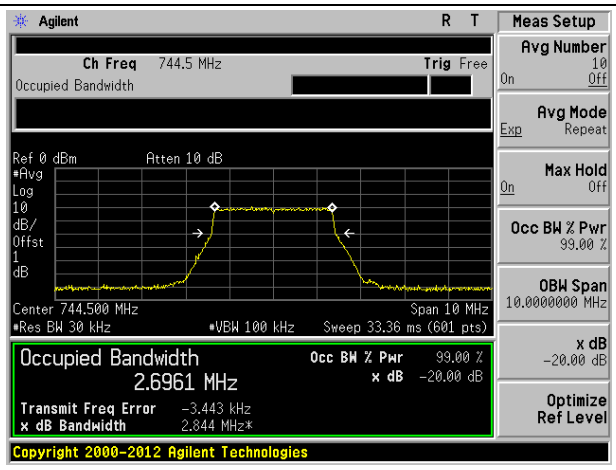
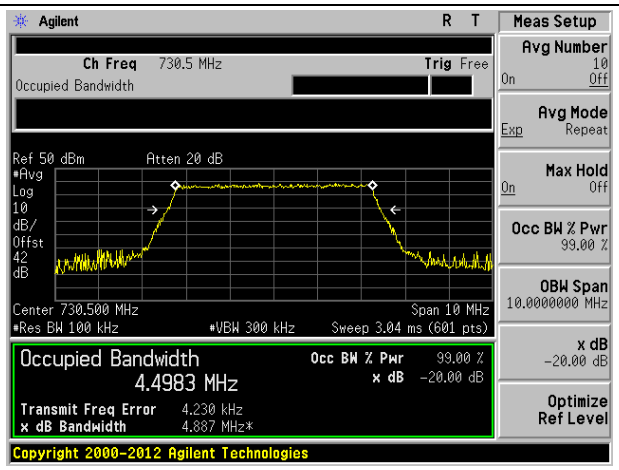
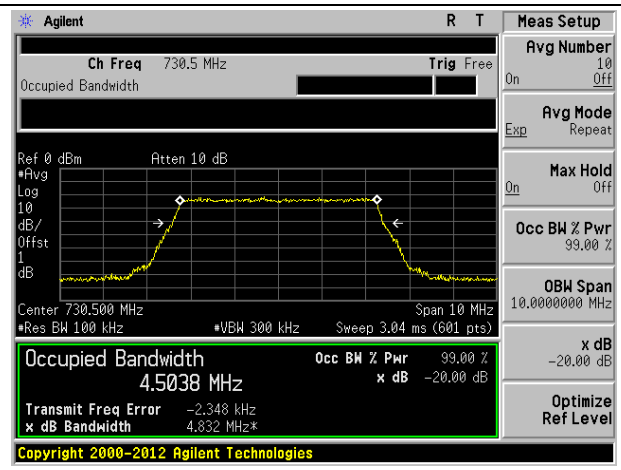
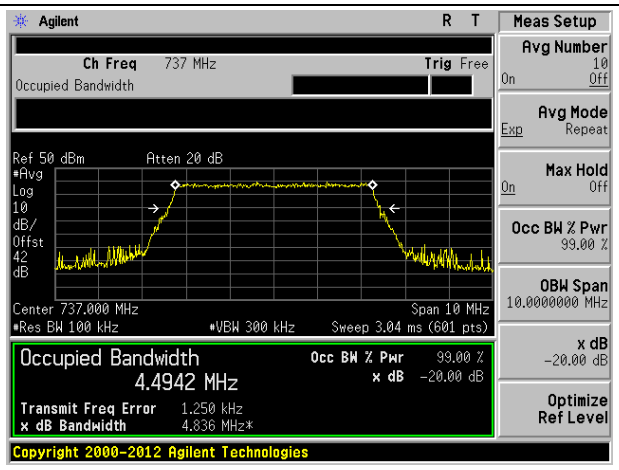
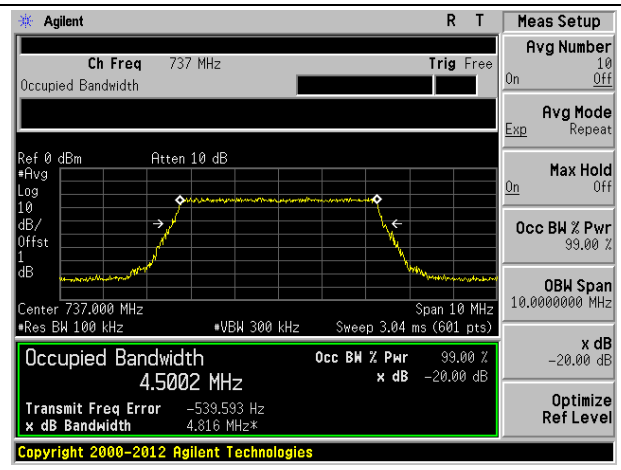
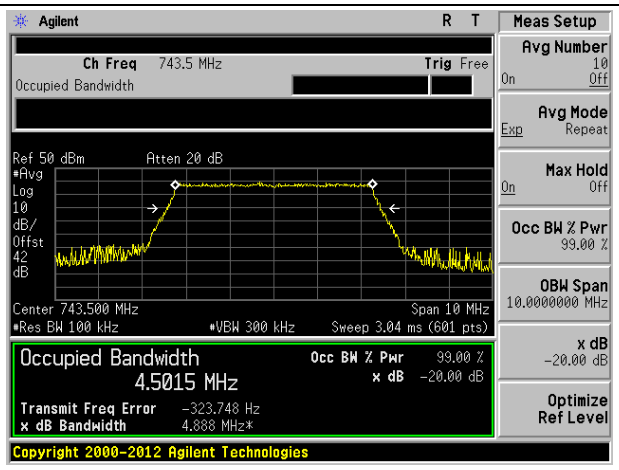
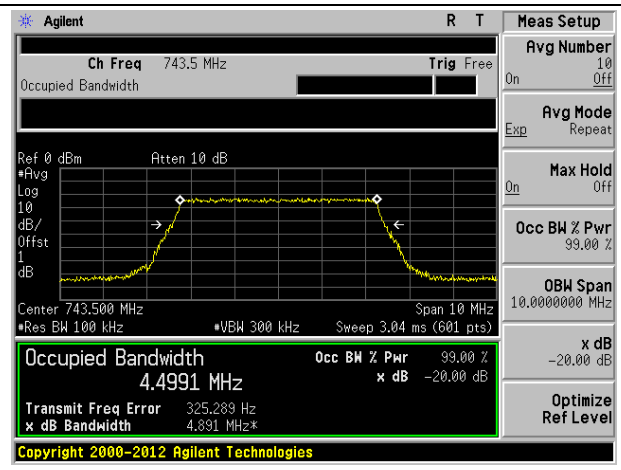
	
Output(Highest channel)	**Input(Highest channel)**
	

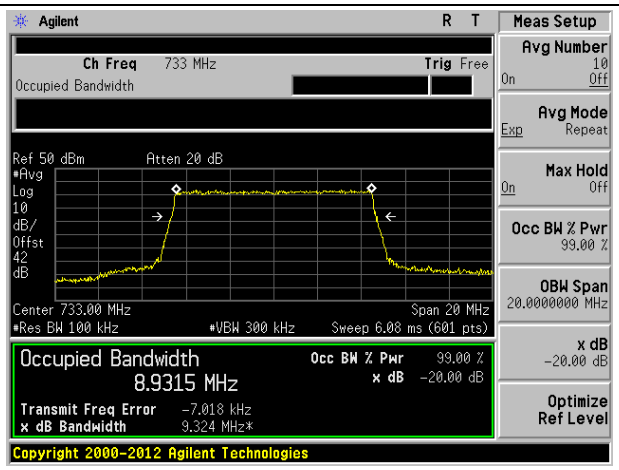
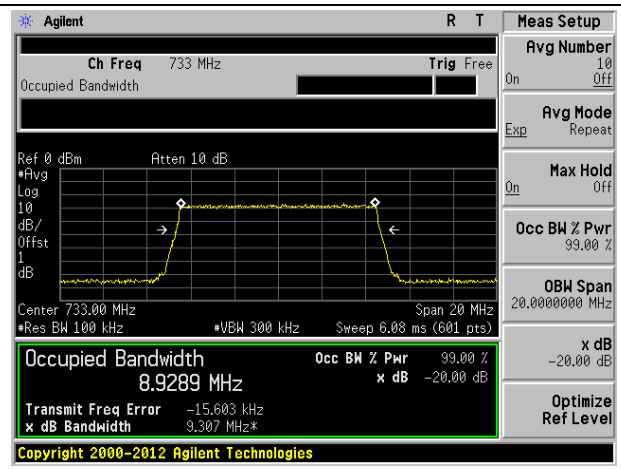
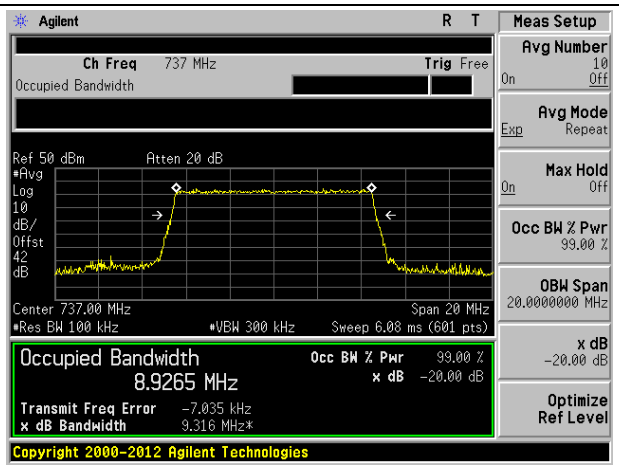
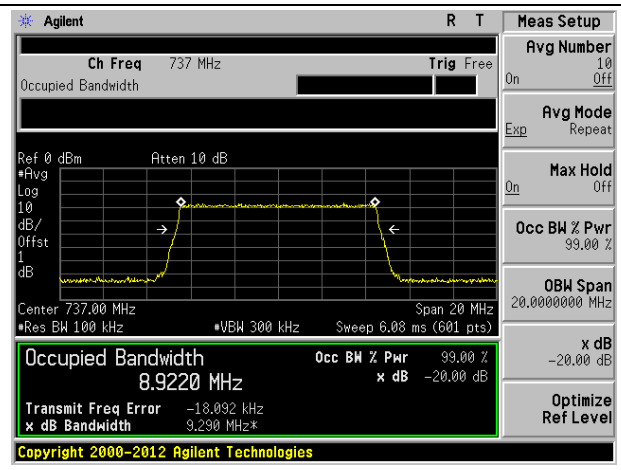
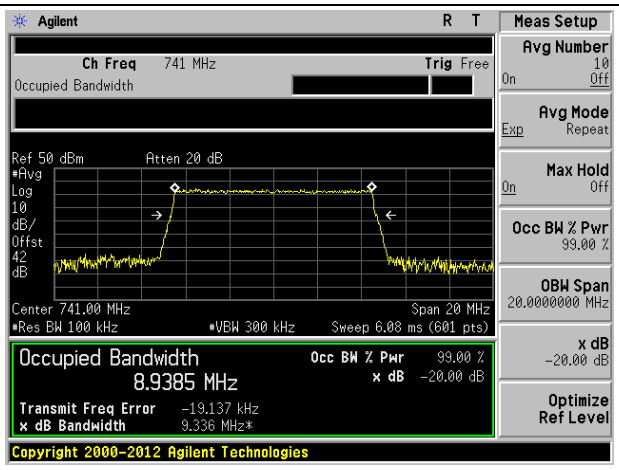
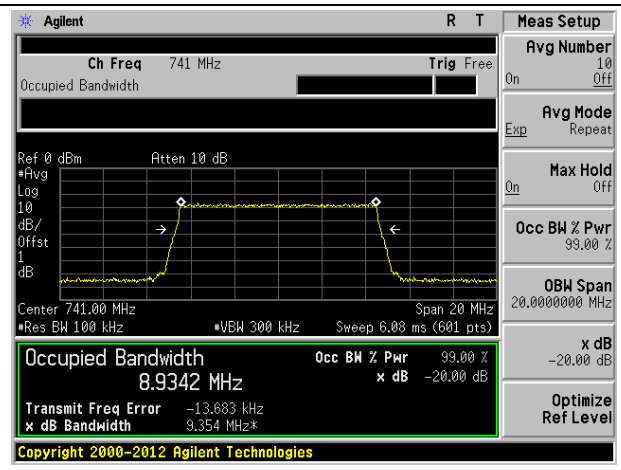
Input/output Bandwidth Comparison for LTE 3MHz Bandwidth

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

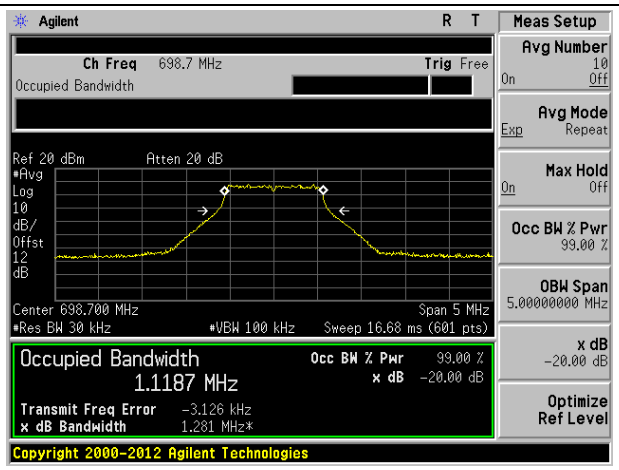
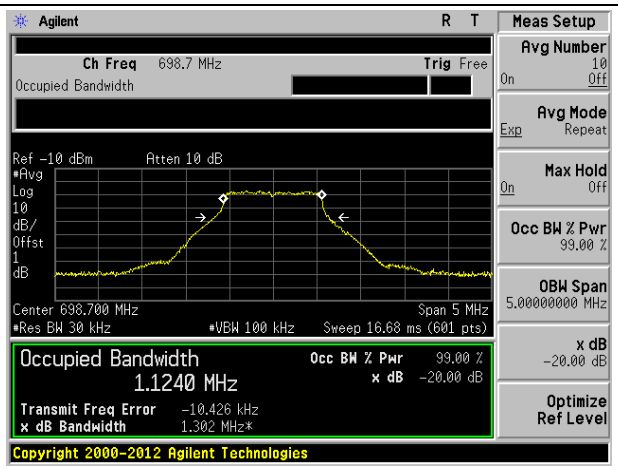
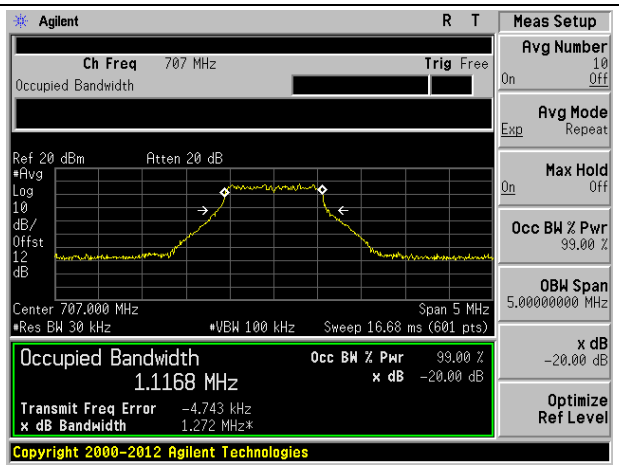
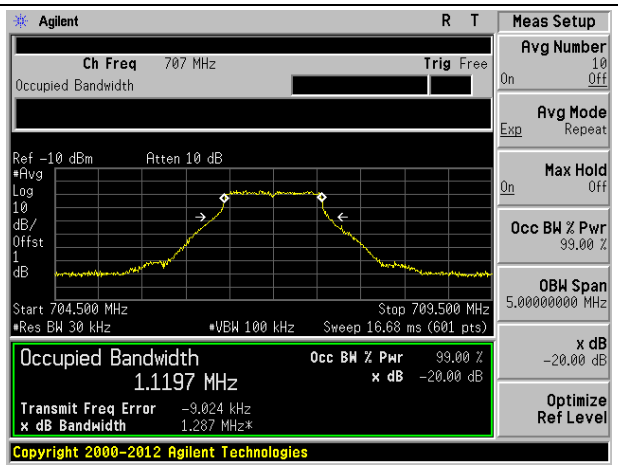
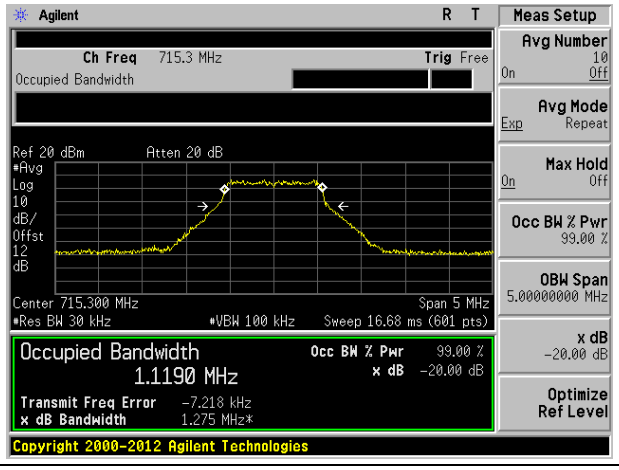
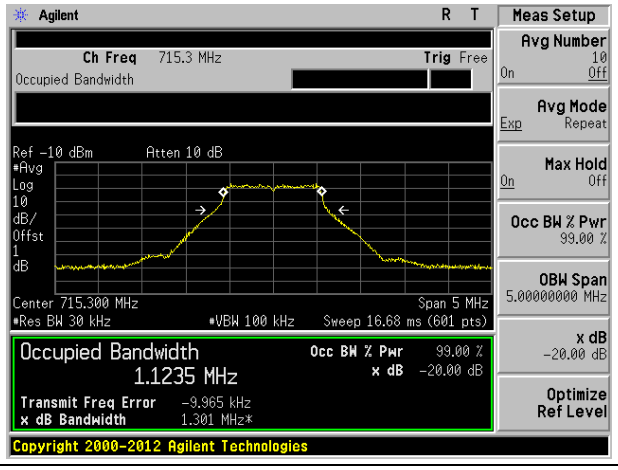
Output(Lowest channel)	Input(Lowest channel)
	
Output(Middle channel)	Input(Middle channel)
	
Output(Highest channel)	Input(Highest channel)
	

Input/output Bandwidth Comparison for LTE 10MHz Bandwidth

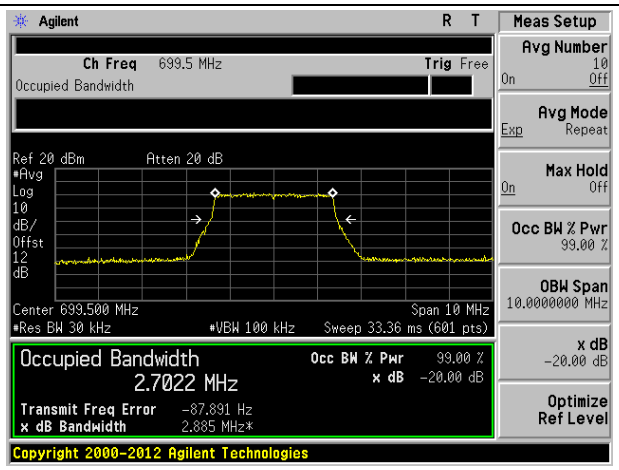
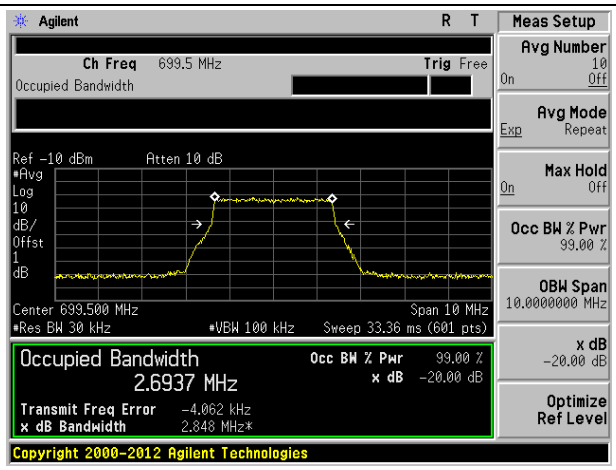
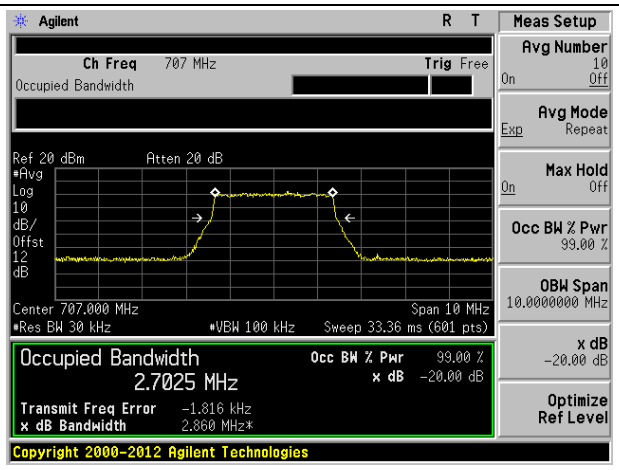
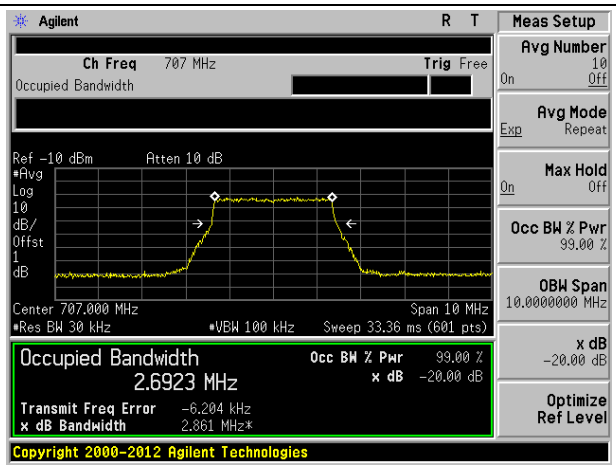
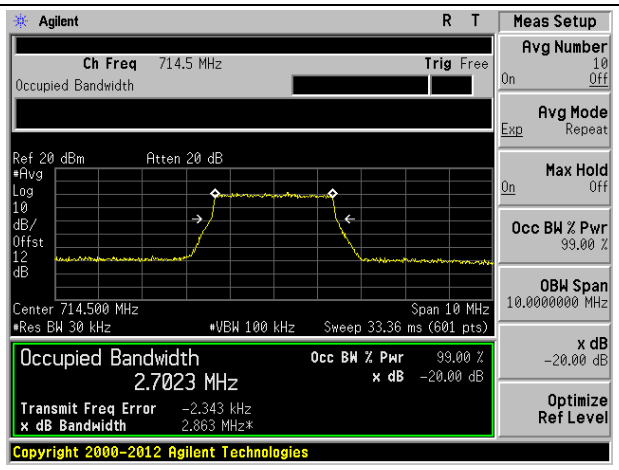
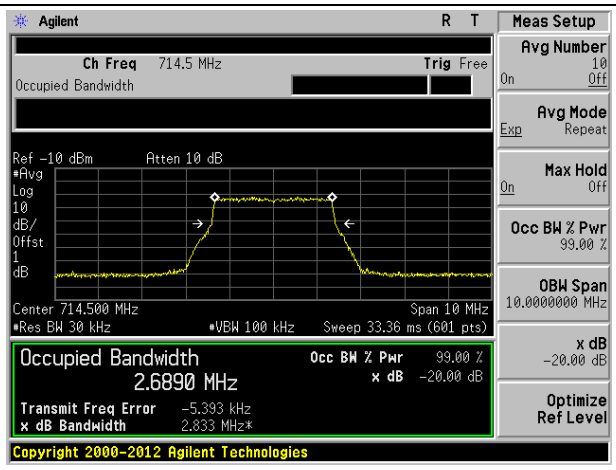
Output(Lowest channel)	Input(Lowest channel)
	
Output(Middle channel)	Input(Middle channel)
	
Output(Highest channel)	Input(Highest channel)
	

Uplink:

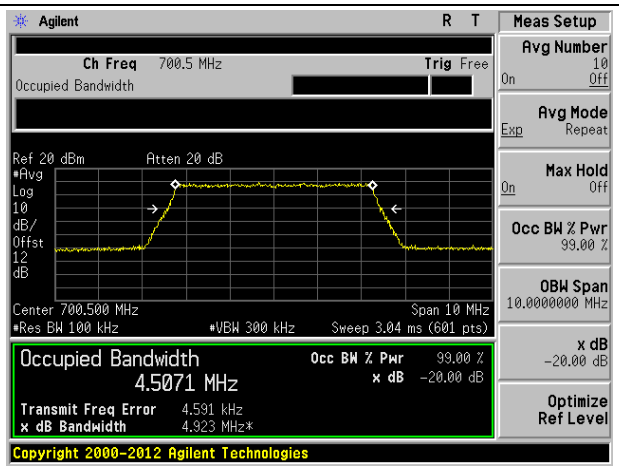
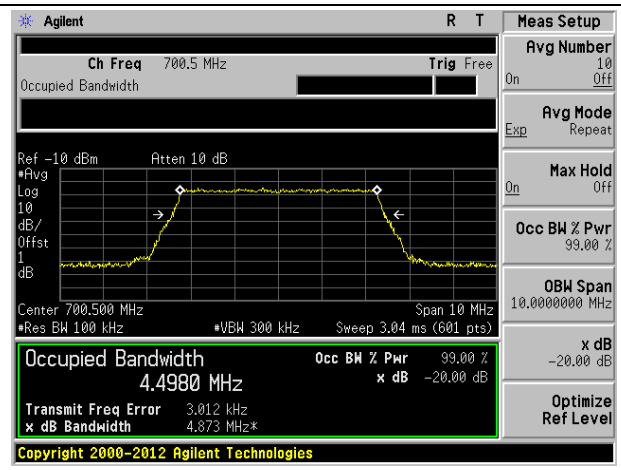
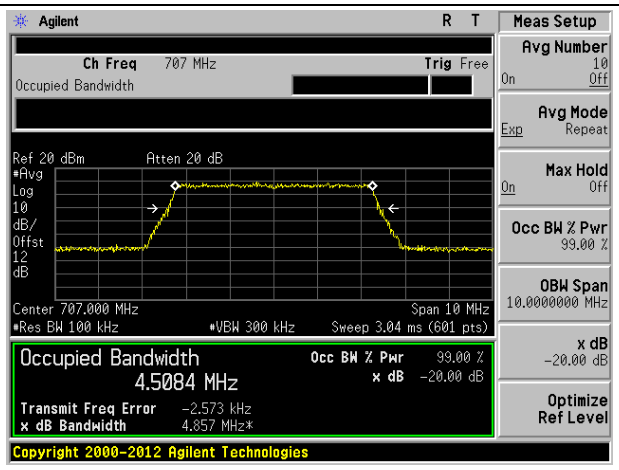
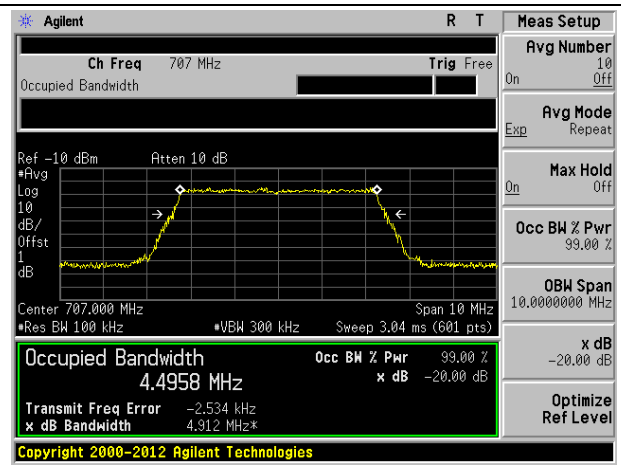
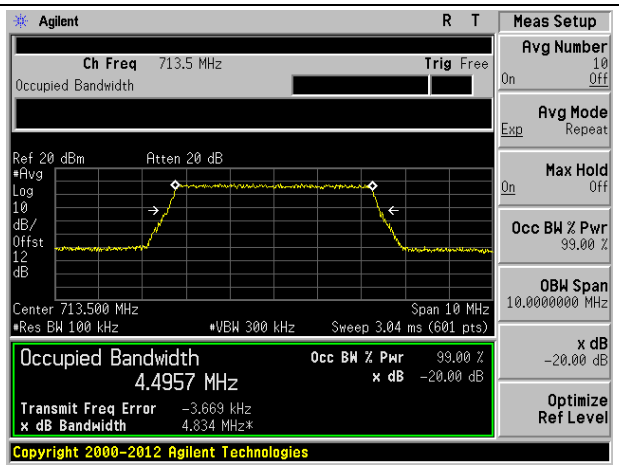
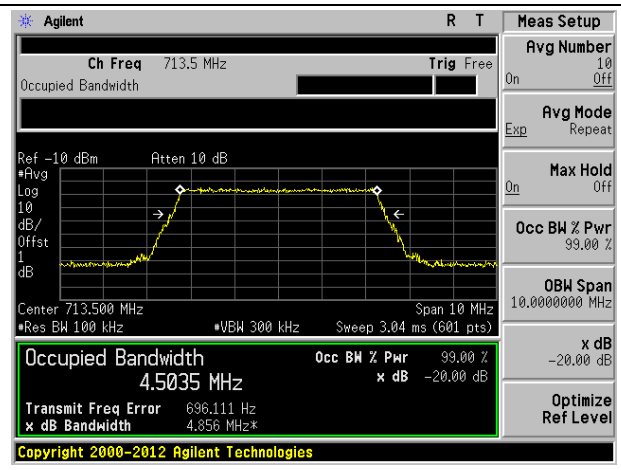
Input/output Bandwidth Comparison for LTE 1.4MHz Bandwidth

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

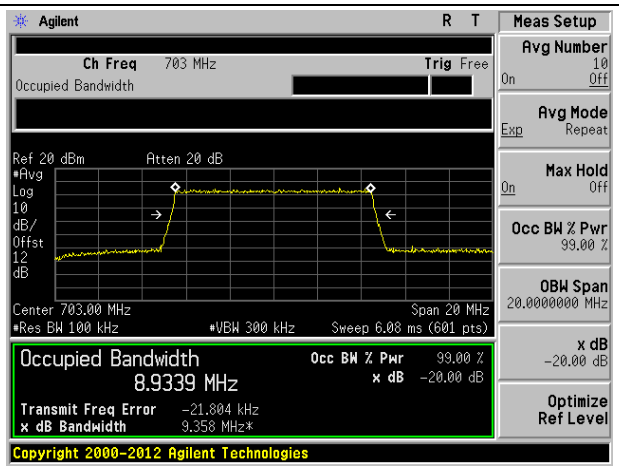
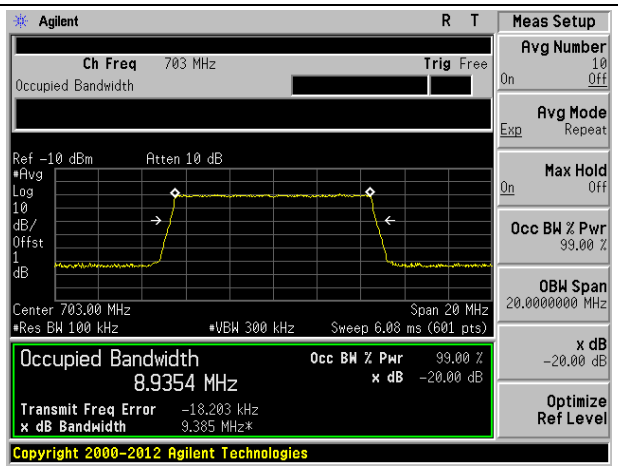
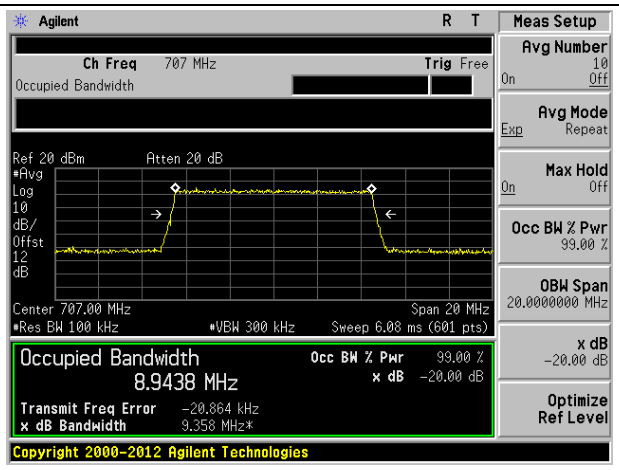
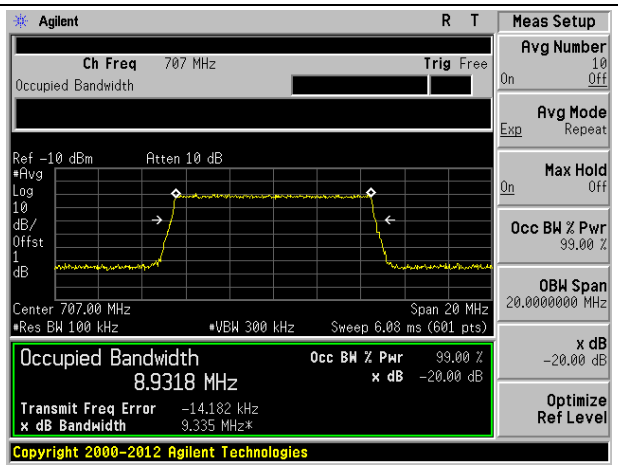
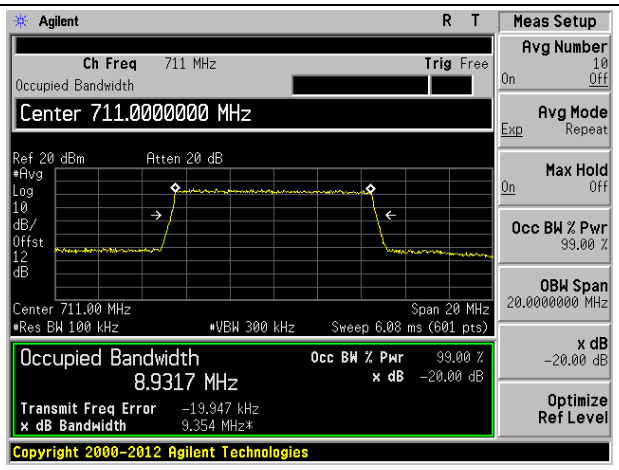
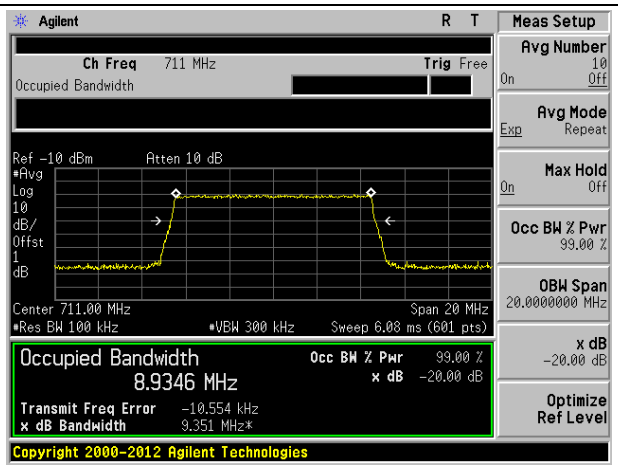
Input/output Bandwidth Comparison for LTE 3MHz Bandwidth

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

Input/output Bandwidth Comparison for LTE 10MHz Bandwidth

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 § 27.53(g)

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

Band edge compliance is also demonstrated using a 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; VBW=300KHz; Above 1G: RBW=1 MHz ; VBW≥ RBW

< 1 MHz from Band Edge

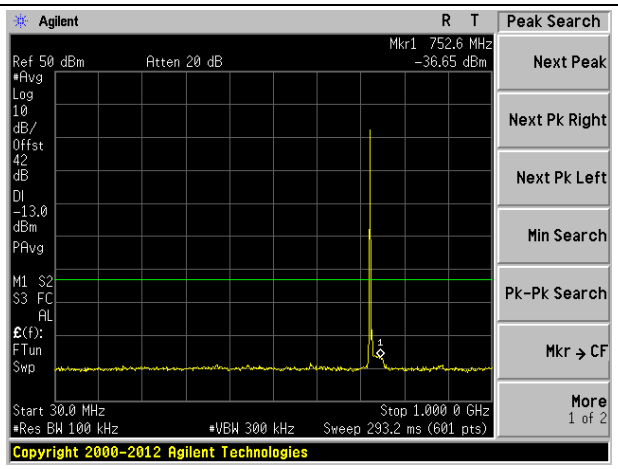
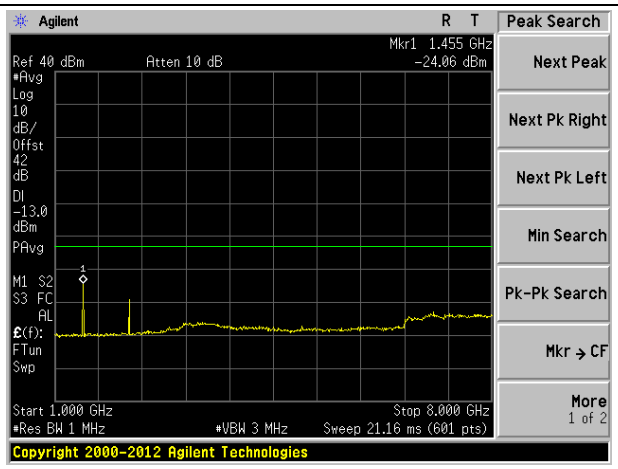
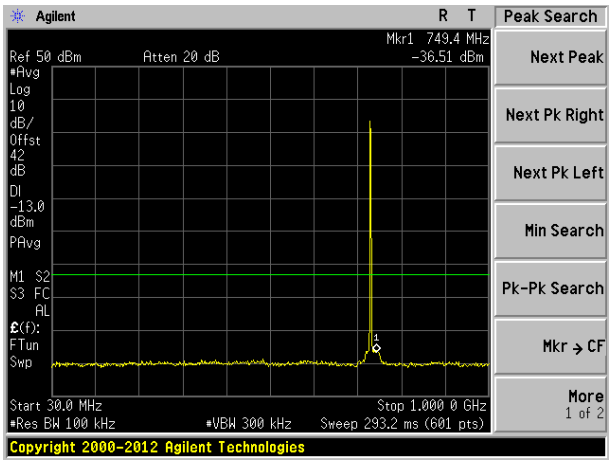
RBW=3 kHz; VBW≥ RBW

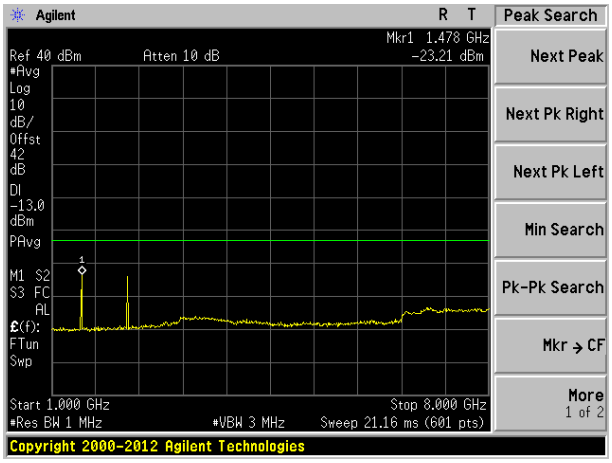
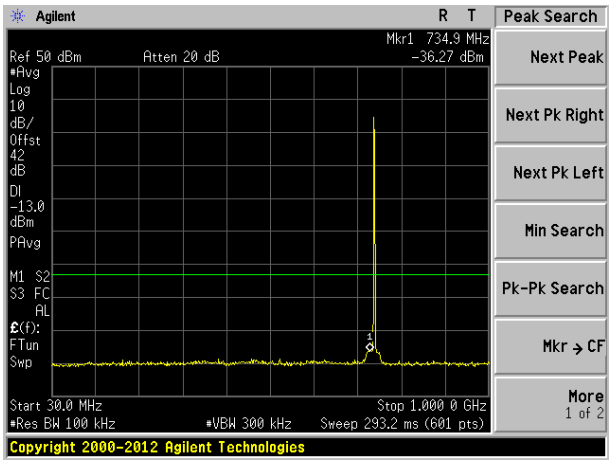
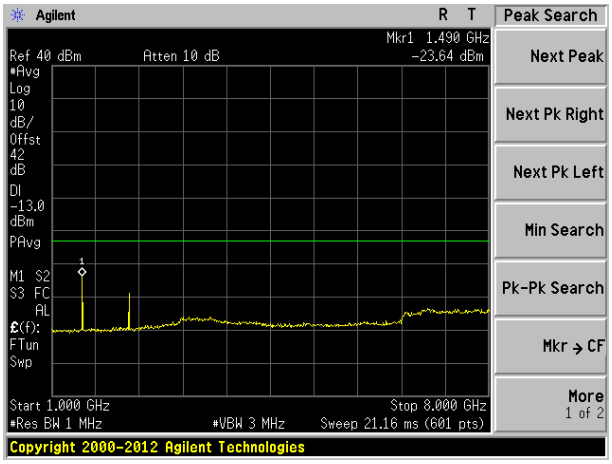
10.4 Measurement Result

10.4.1 Spurious emission

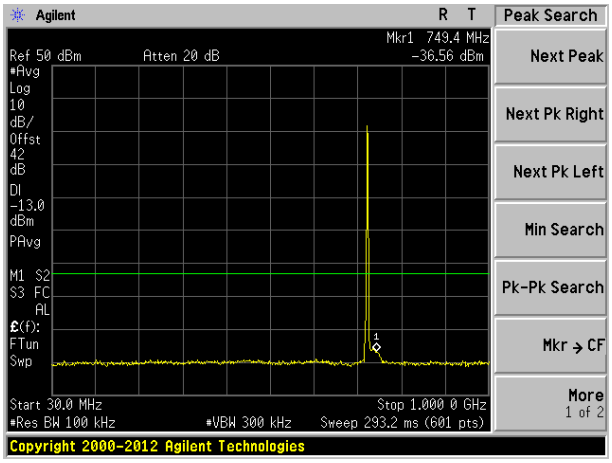
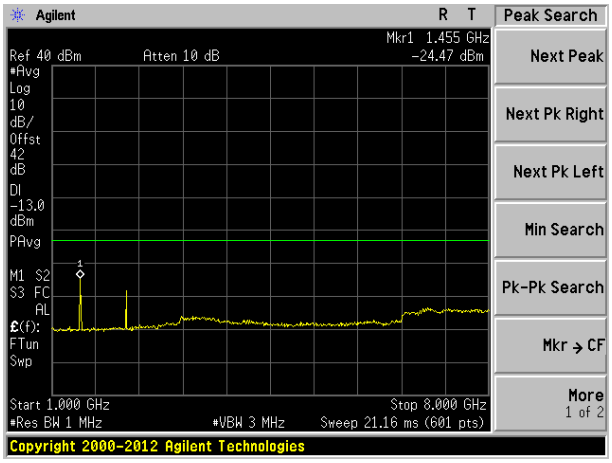
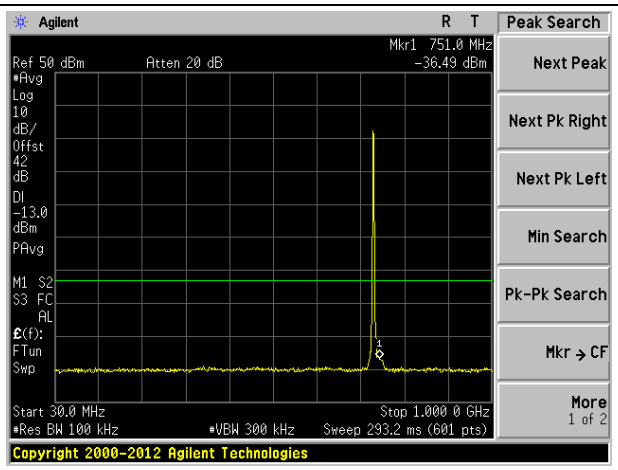
Downlink:

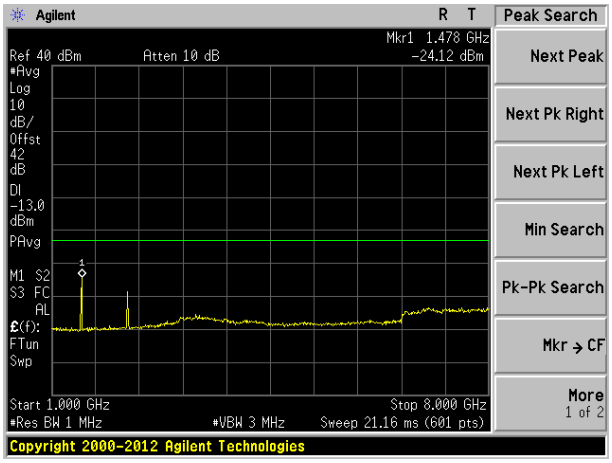
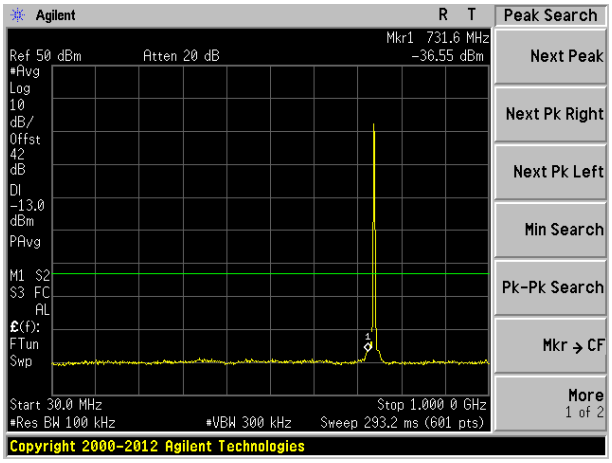
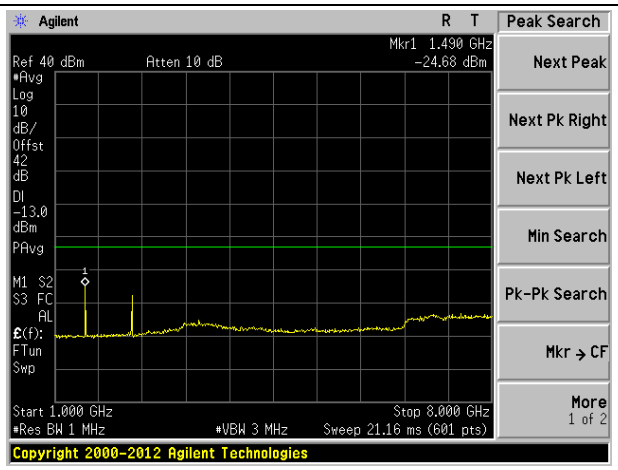
Spurious emission of LTE 1.4MHz Bandwidth

Lowest channel
30MHz-1000MHz

1000MHz-8000MHz

Middle channel
30MHz-1000MHz


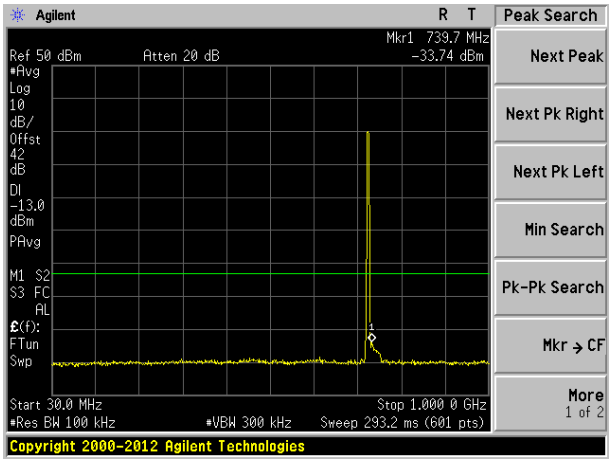
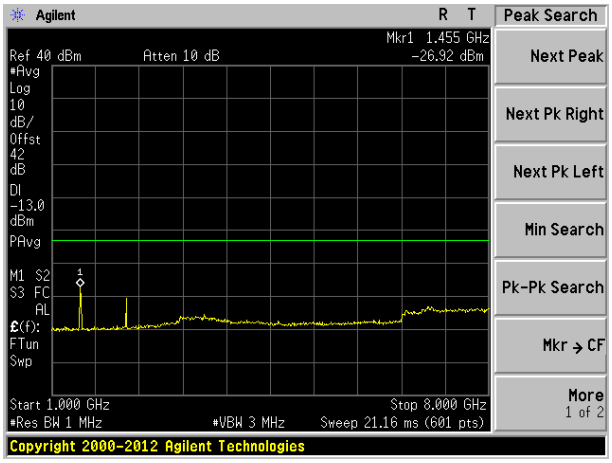
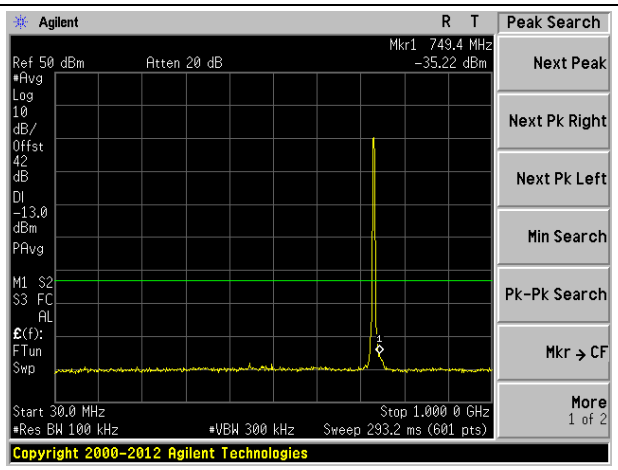
1000MHz-8000MHz

Highest channel
30MHz-1000MHz

1000MHz-8000MHz


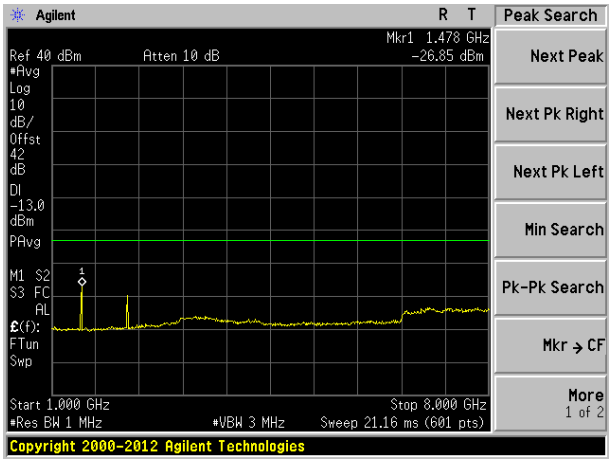
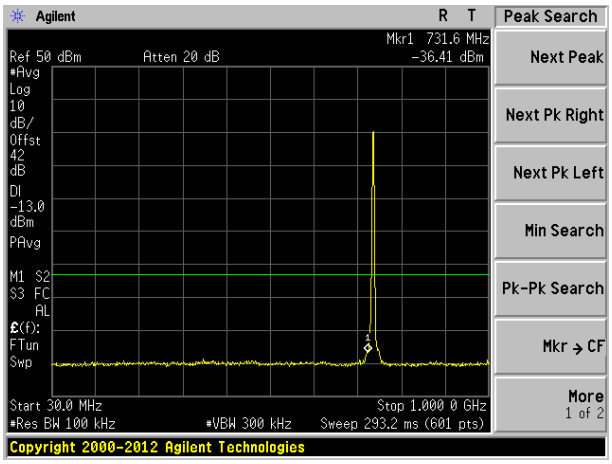
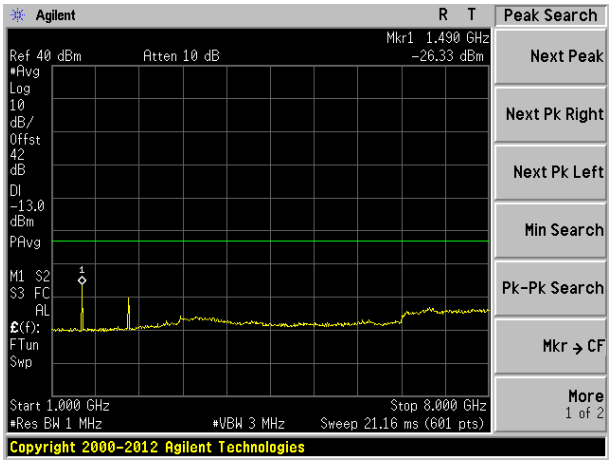
Spurious emission of LTE 3MHz Bandwidth

Lowest channel
30MHz-1000MHz

1000MHz-8000MHz

Middle channel
30MHz-1000MHz


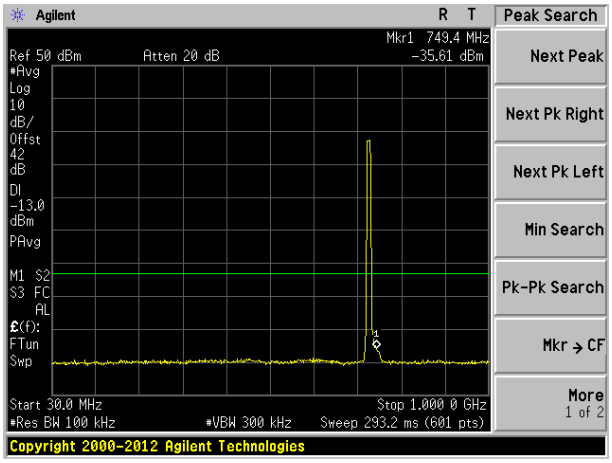
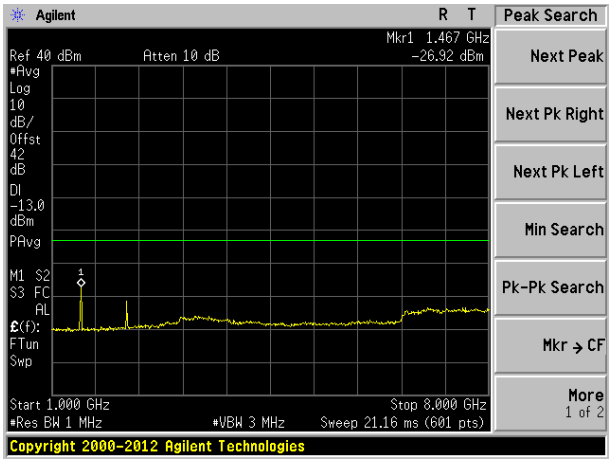
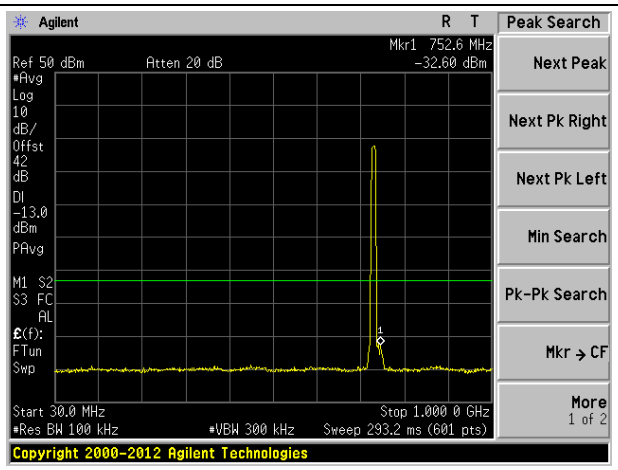
1000MHz-8000MHz

Highest channel
30MHz-1000MHz

1000MHz-8000MHz


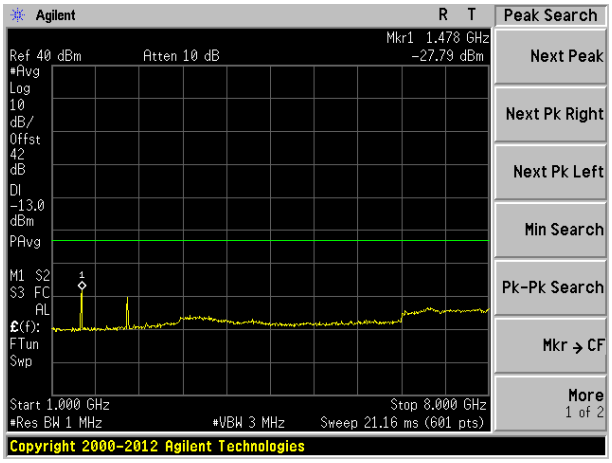
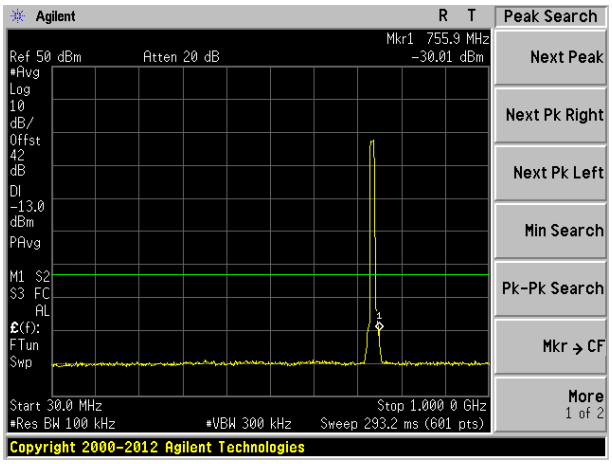
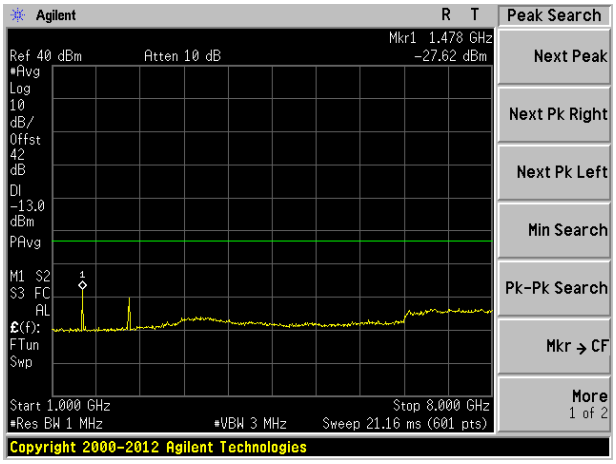
Spurious emission of LTE 5MHz Bandwidth

Lowest channel
30MHz-1000MHz

1000MHz-8000MHz

Middle channel
30MHz-1000MHz


1000MHz-8000MHz

Highest channel
30MHz-1000MHz

1000MHz-8000MHz


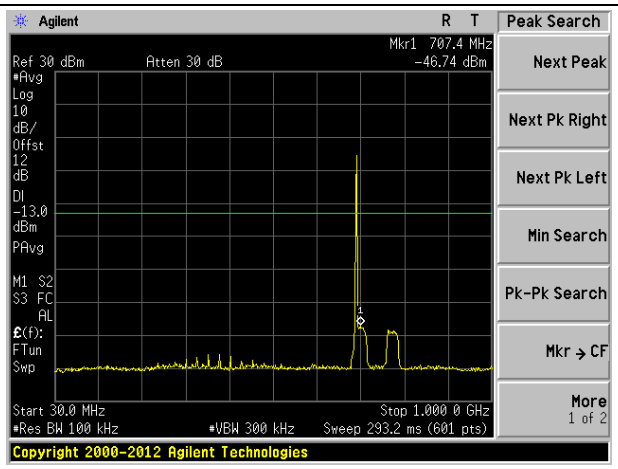
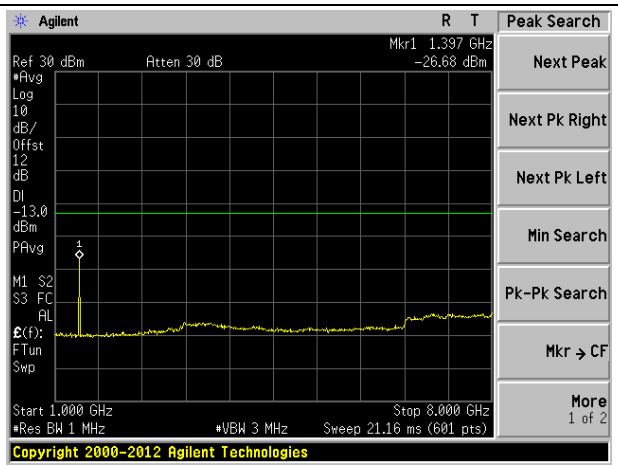
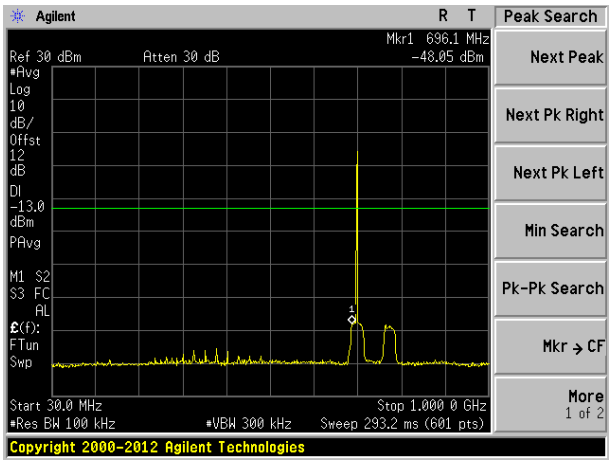
Spurious emission of LTE 10MHz Bandwidth

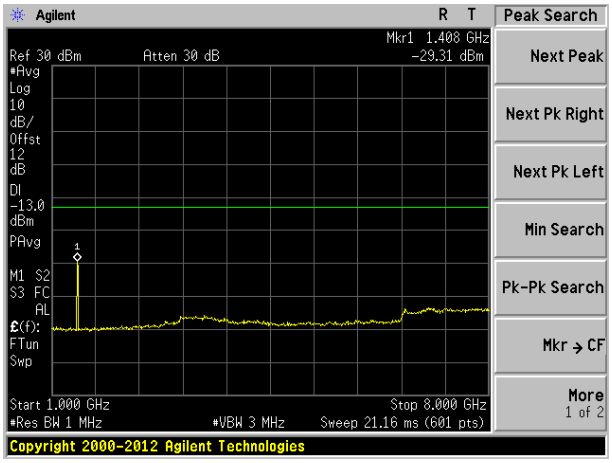
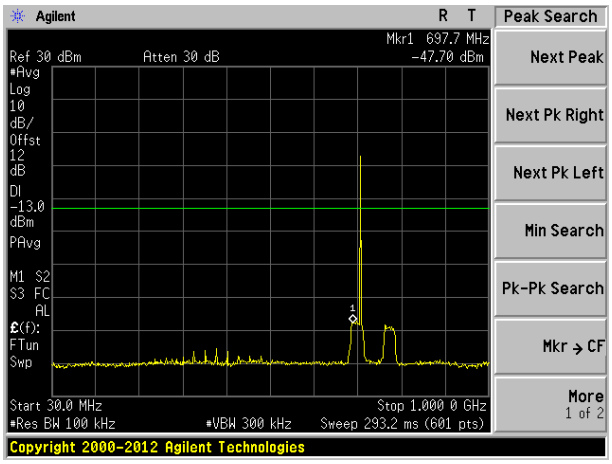
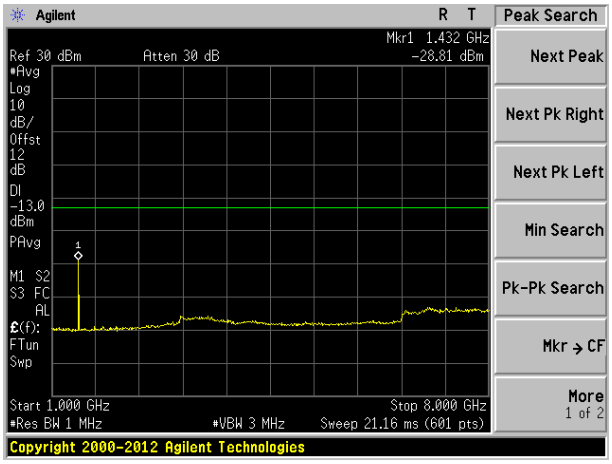
Lowest channel
30MHz-1000MHz

1000MHz-8000MHz

Middle channel
30MHz-1000MHz


1000MHz-8000MHz

Highest channel
30MHz-1000MHz

1000MHz-8000MHz


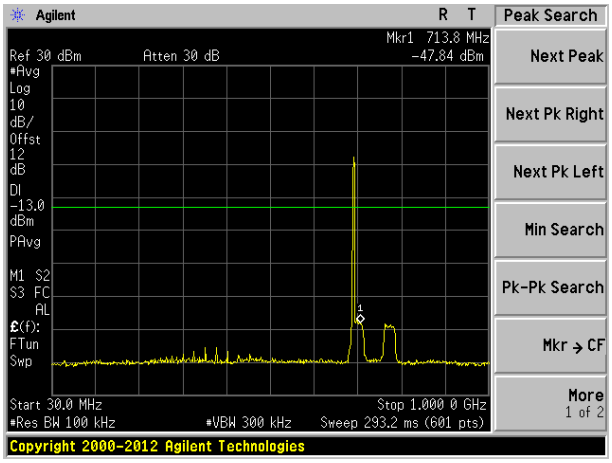
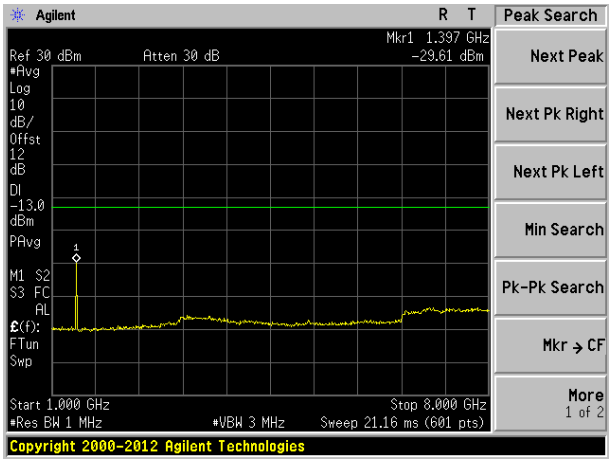
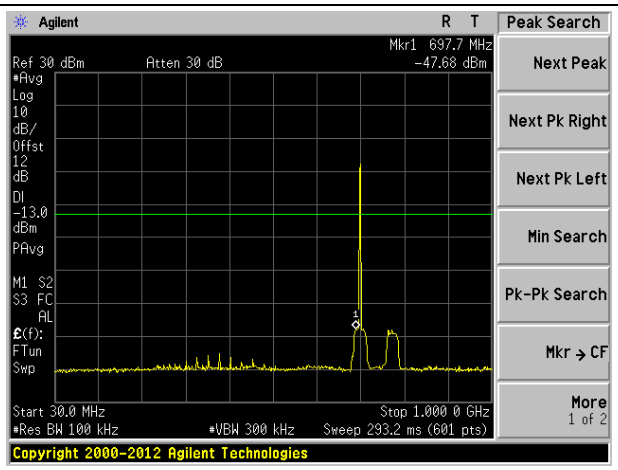
Uplink:

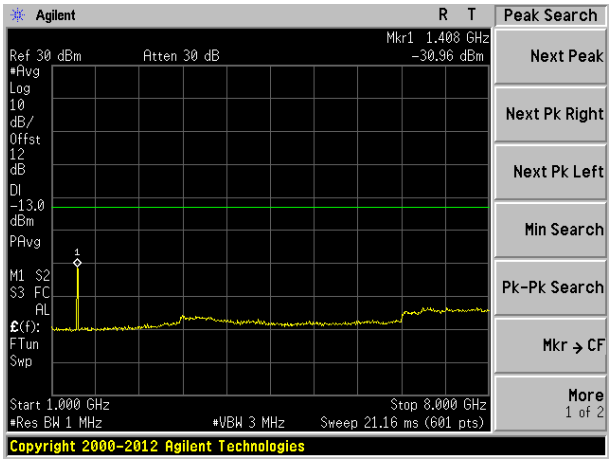
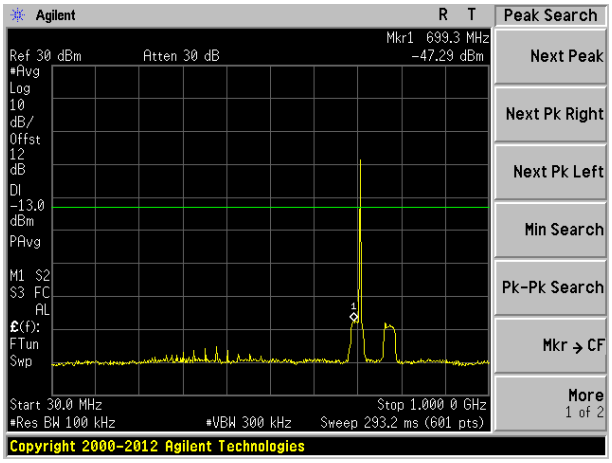
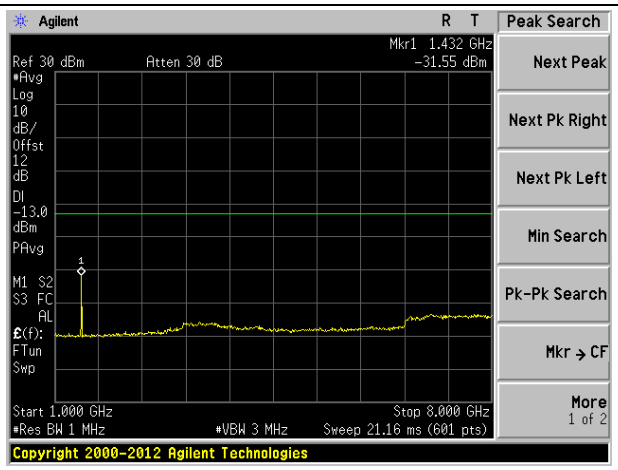
Spurious emission of LTE 1.4MHz Bandwidth

Lowest channel
30MHz-1000MHz

1000MHz-8000MHz

Middle channel
30MHz-1000MHz


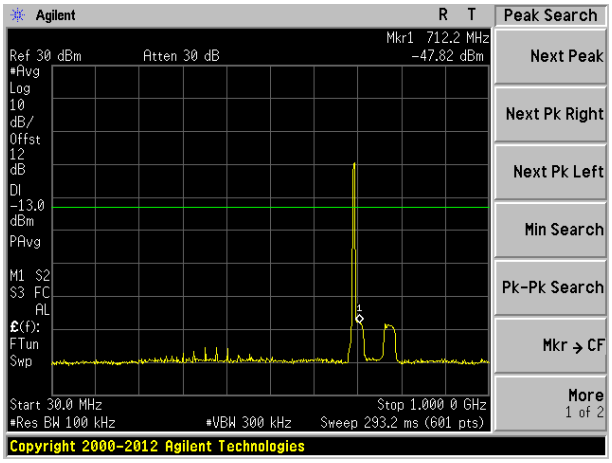
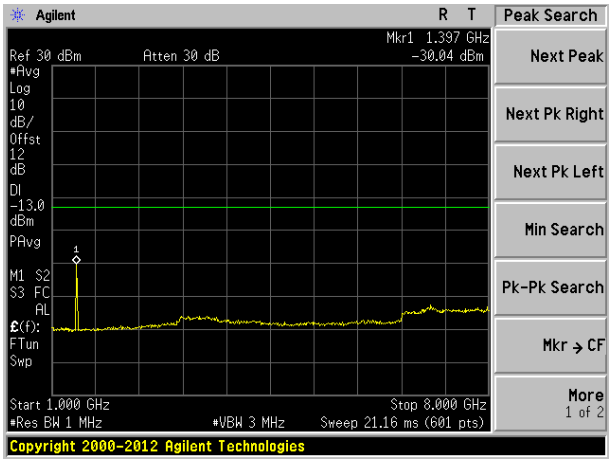
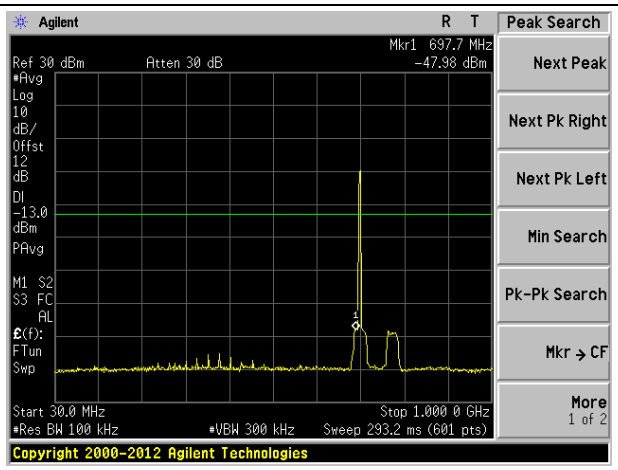
1000MHz-8000MHz

Highest channel
30MHz-1000MHz

1000MHz-8000MHz


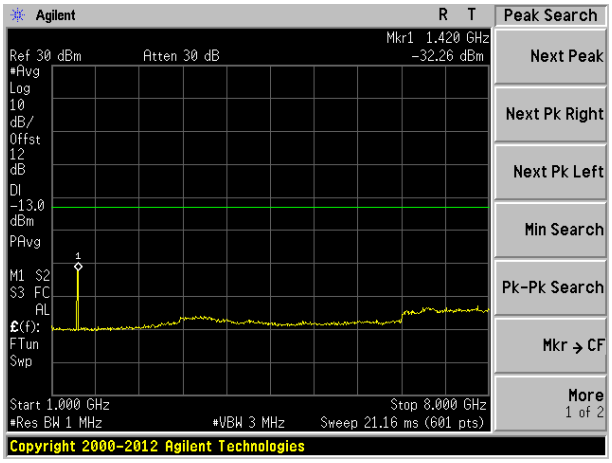
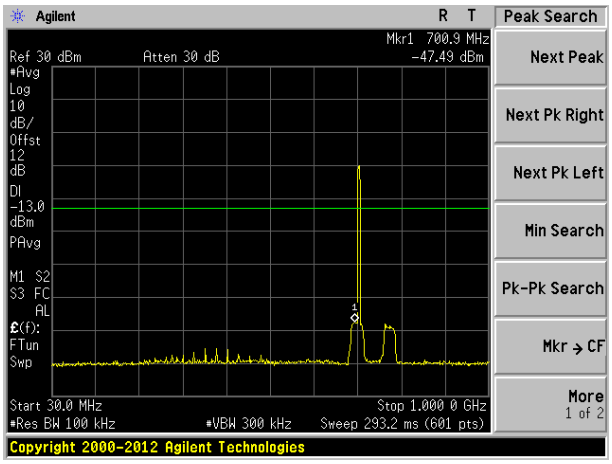
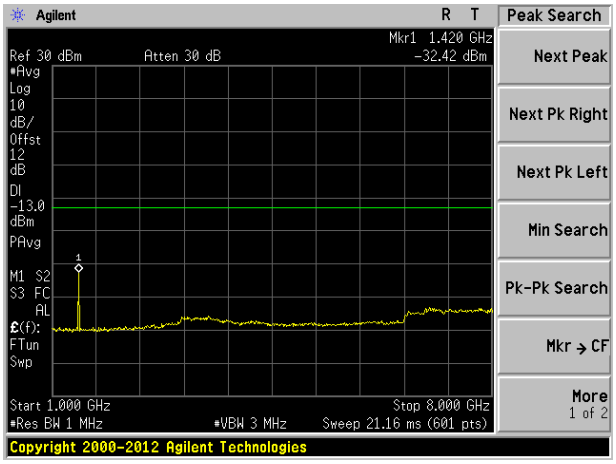
Spurious emission of LTE 3MHz Bandwidth

Lowest channel
30MHz-1000MHz

1000MHz-8000MHz

Middle channel
30MHz-1000MHz


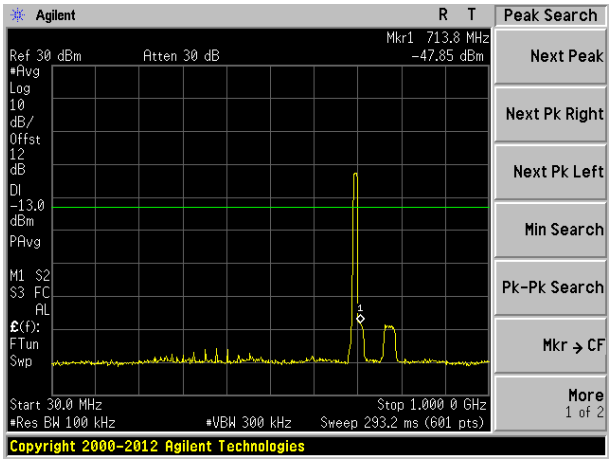
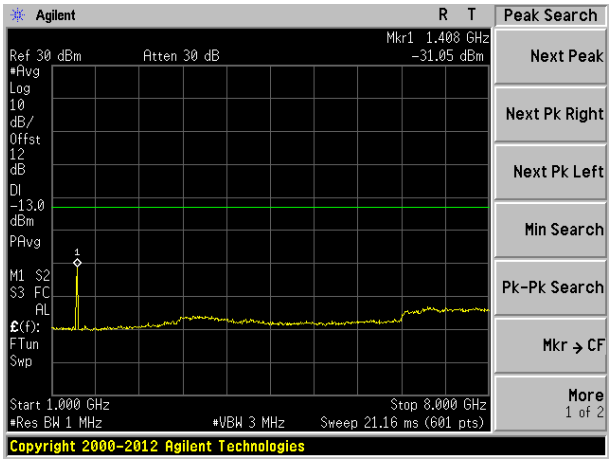
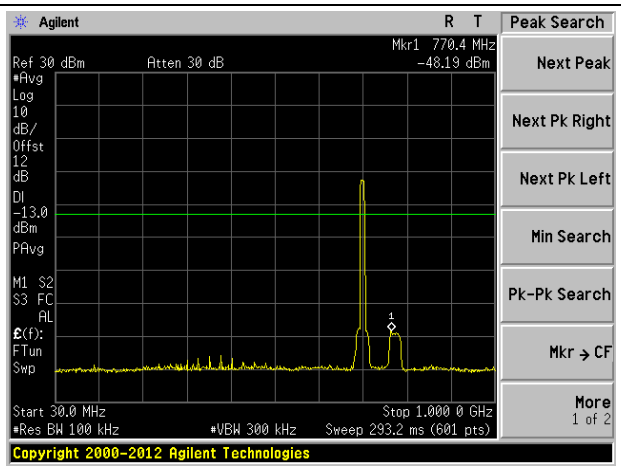
1000MHz-8000MHz

Highest channel
30MHz-1000MHz

1000MHz-8000MHz


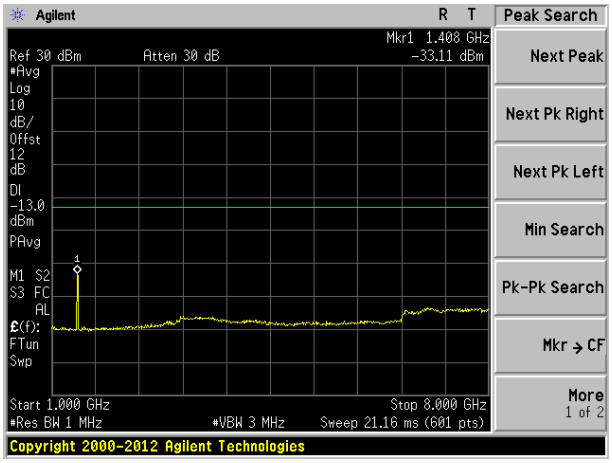
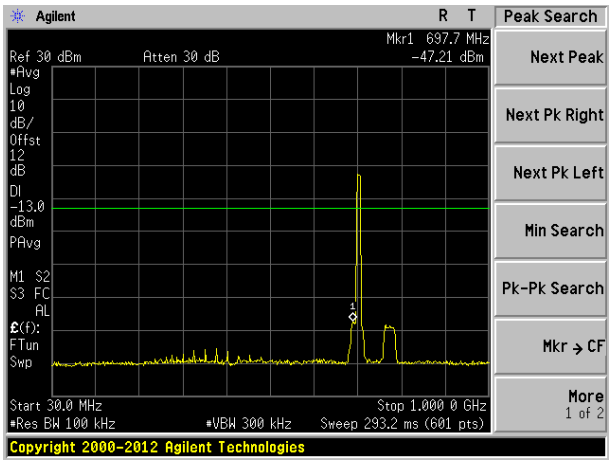
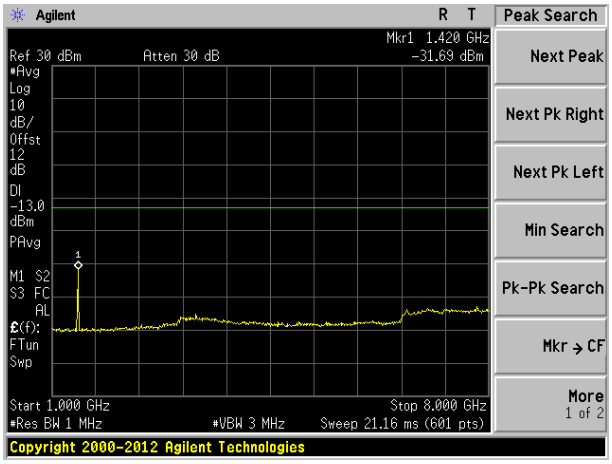
Spurious emission of LTE 5MHz Bandwidth

Lowest channel
30MHz-1000MHz

1000MHz-8000MHz

Middle channel
30MHz-1000MHz


1000MHz-8000MHz

Highest channel
30MHz-1000MHz

1000MHz-8000MHz


Spurious emission of LTE 10MHz Bandwidth

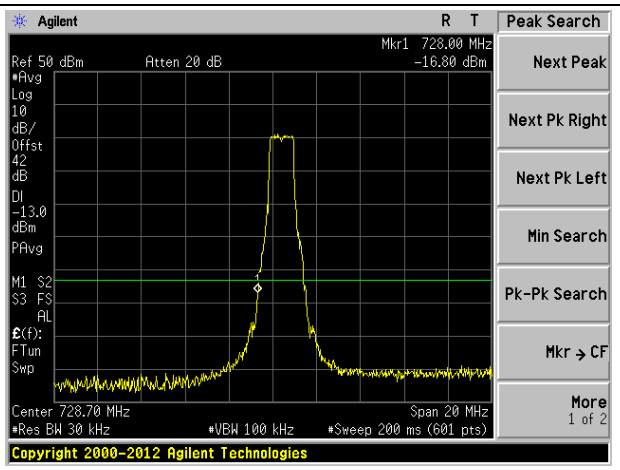
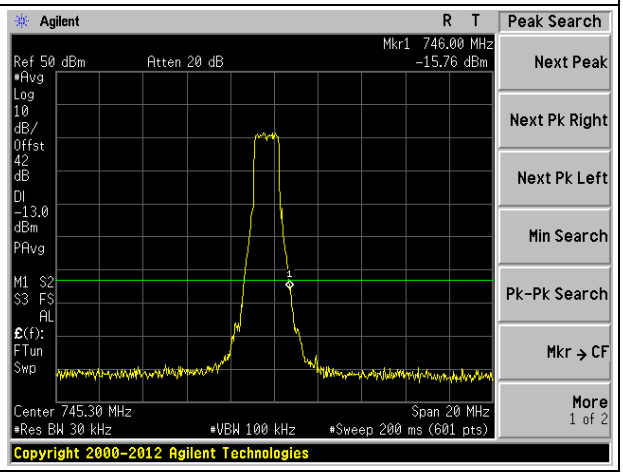
Lowest channel
30MHz-1000MHz

1000MHz-8000MHz

Middle channel
30MHz-1000MHz


1000MHz-8000MHz

Highest channel
30MHz-1000MHz

1000MHz-8000MHz


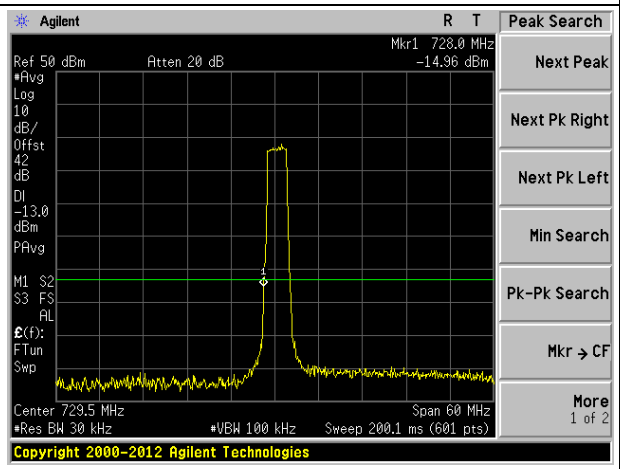
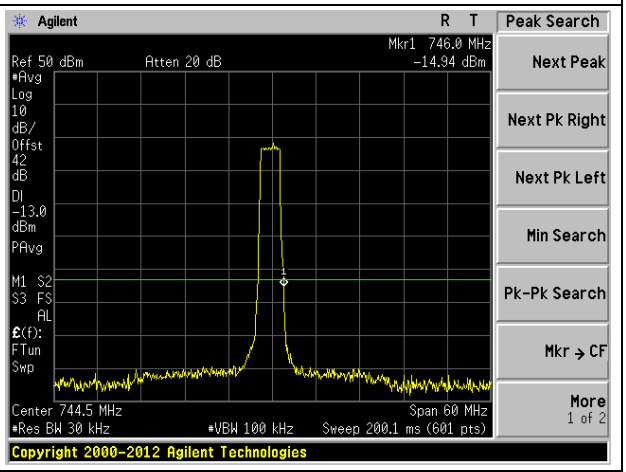
Band edge emission

Downlink:

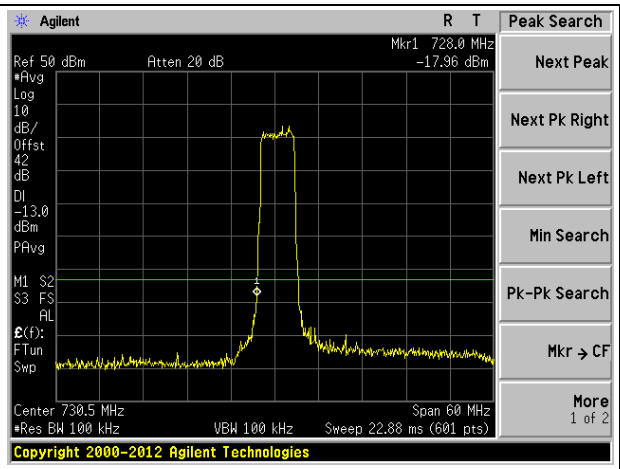
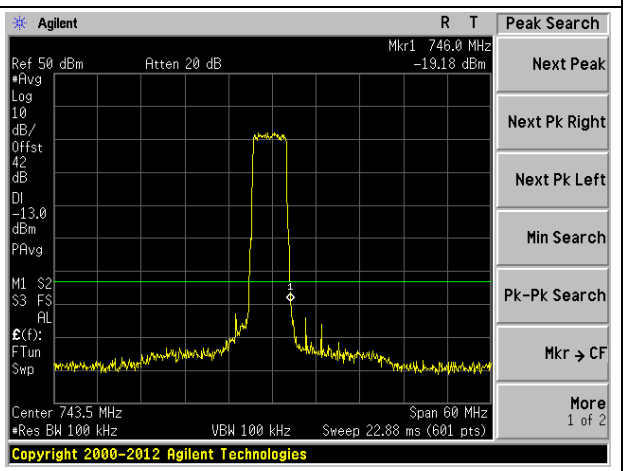
Band edge of LTE 1.4MHz Bandwidth

Left edge of band	Right edge of band
	

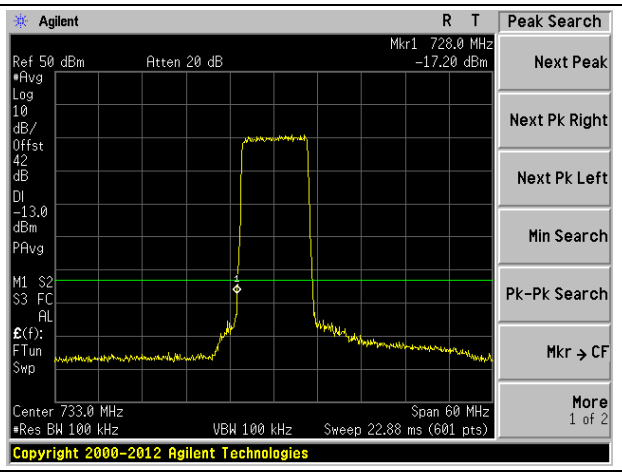
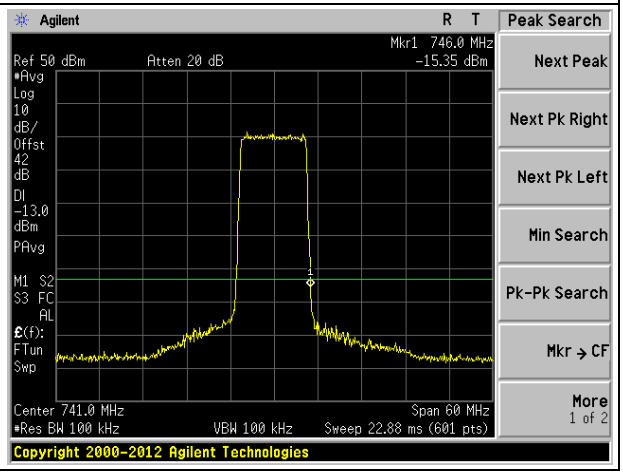
Band edge of LTE 3MHz Bandwidth

Left edge of band	Right edge of band
	

Band edge of LTE 5MHz Bandwidth

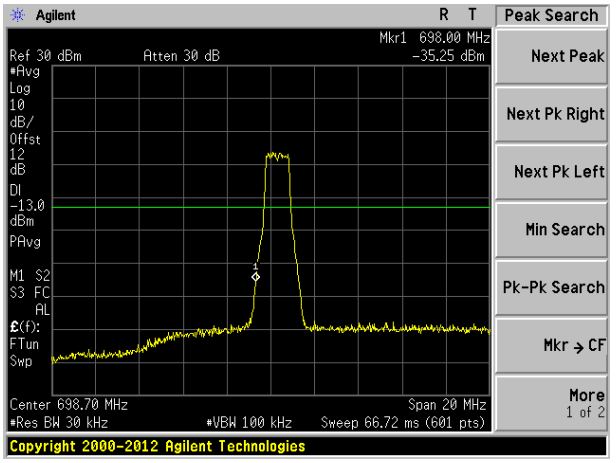
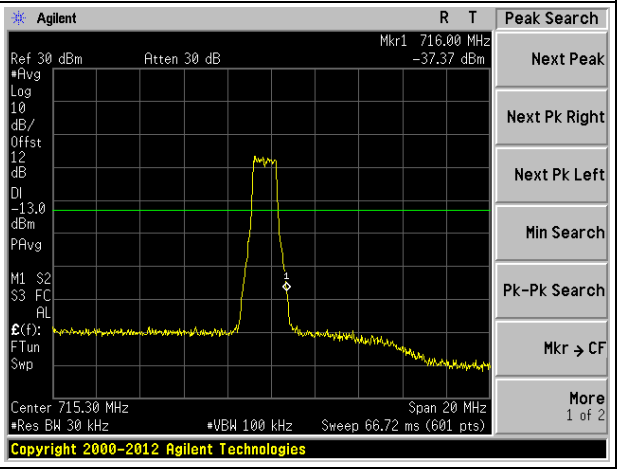
	

Band edge of LTE 10MHz Bandwidth

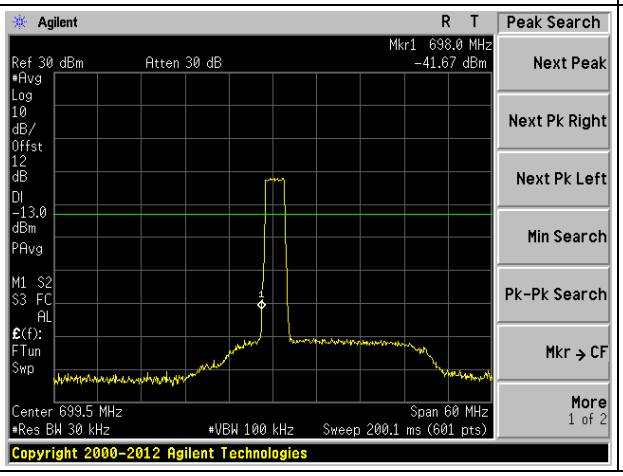
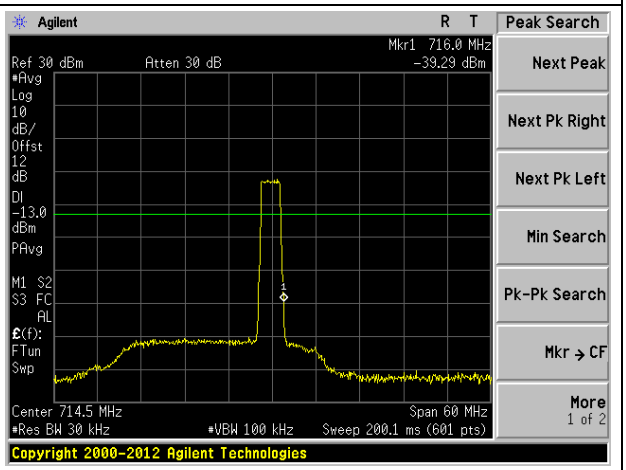
Left edge of band	Right edge of band
	

Uplink:

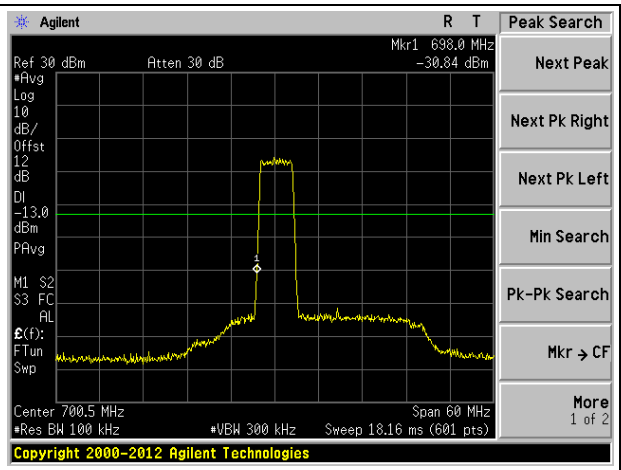
Band edge of LTE 1.4MHz Bandwidth

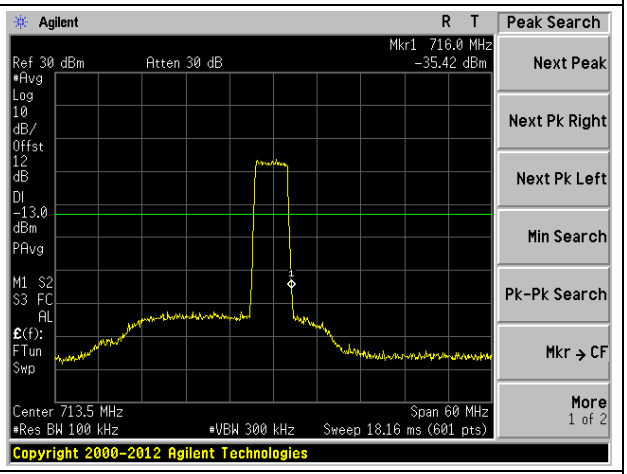
Left edge of band	Right edge of band
	

Band edge of LTE 3MHz Bandwidth

Left edge of band	Right edge of band
	

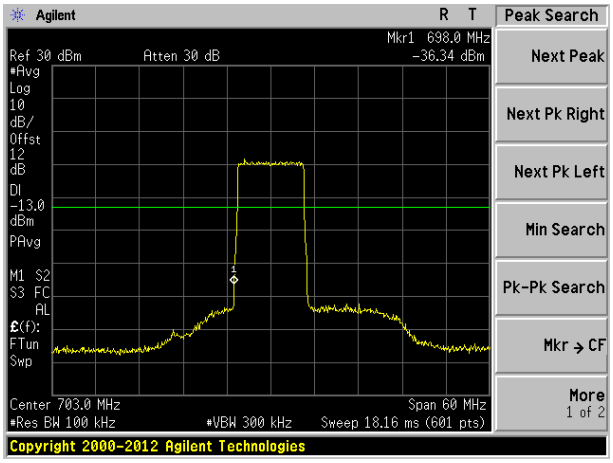
Band edge of LTE 5MHz Bandwidth



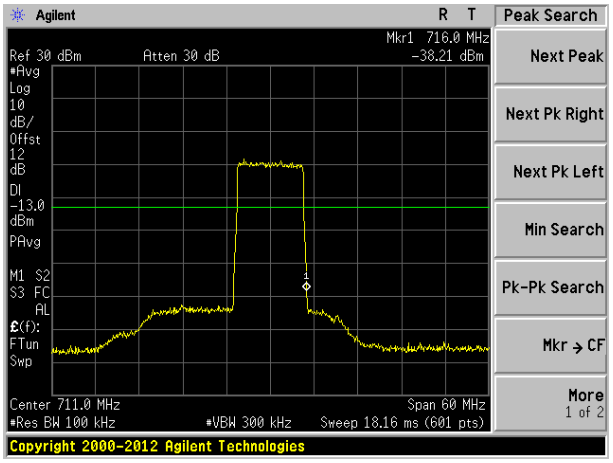


Band edge of LTE 10MHz Bandwidth

Left edge of band



Right edge of band



11 INTERMODULATION

11.1 Standard Applicable

According to FCC § 2.1051 and § 27.53(g)

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 LTE.

Spectrum analyzer settings:

Detector: RMS.

Intermodulation:

RBW= 1% to 5 % of the anticipated OBW ; VBW≥ 3*RBW

Spurious emissions:

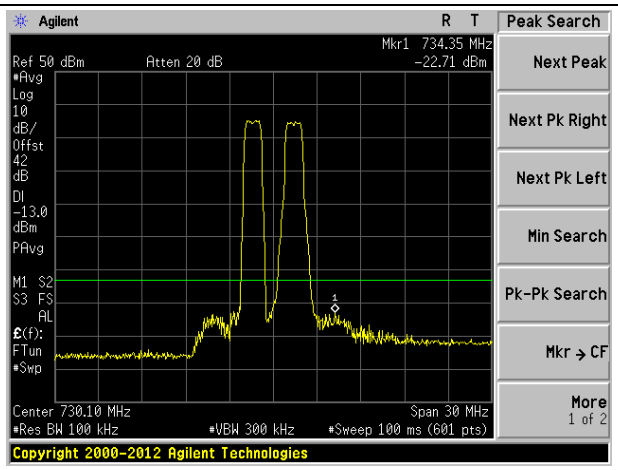
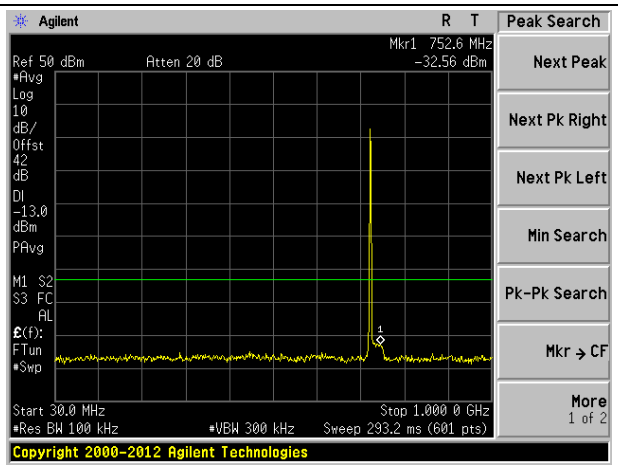
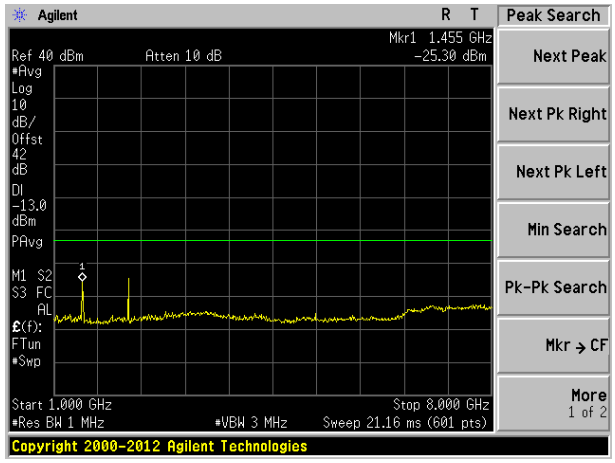
Below 1G: RBW=100kHz; Above 1G: RBW=1 MHz ; VBW≥ RBW

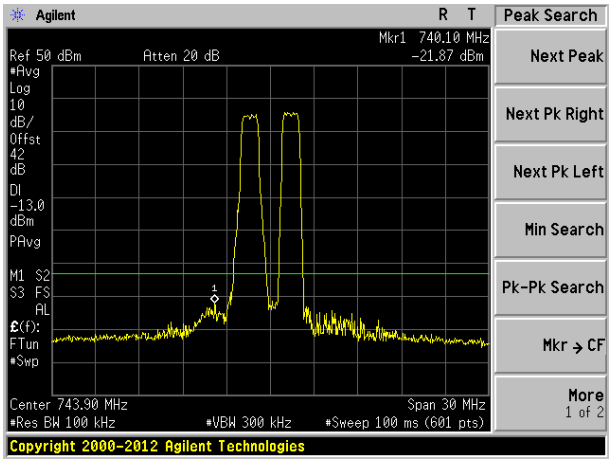
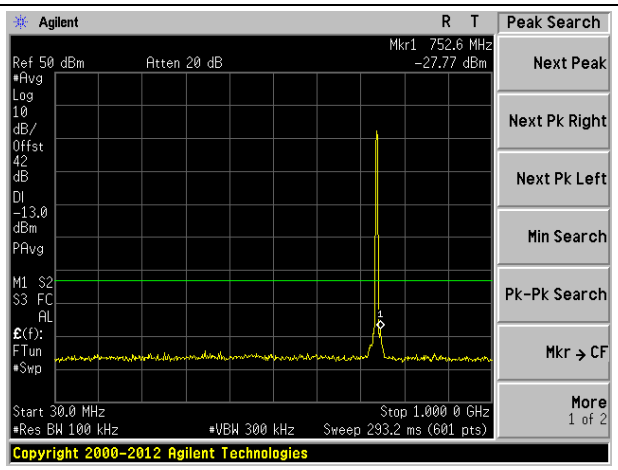
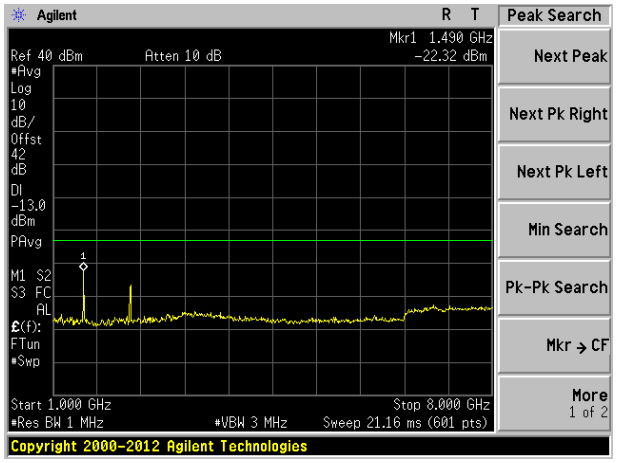
11.4 Test Result

Passed.

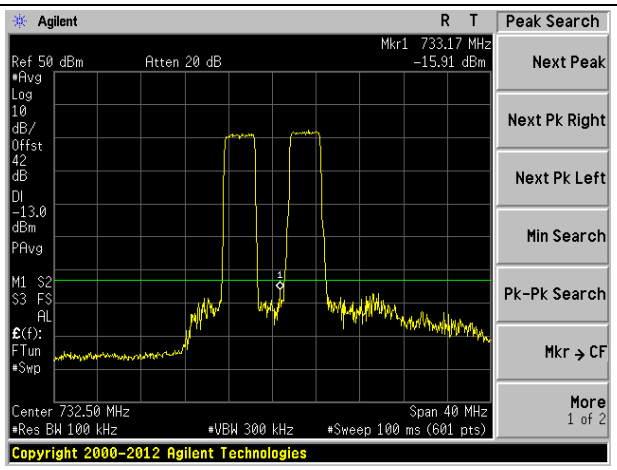
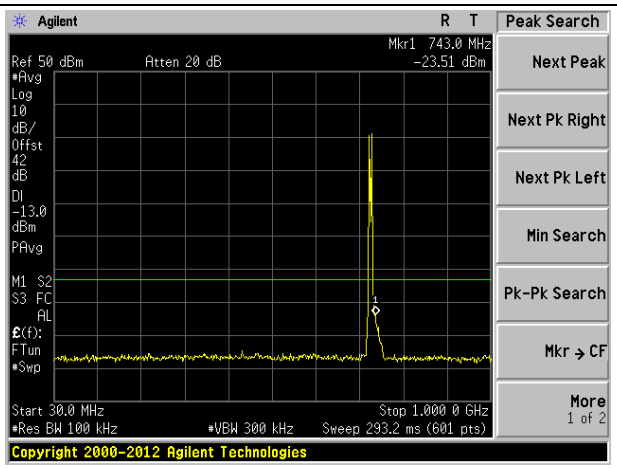
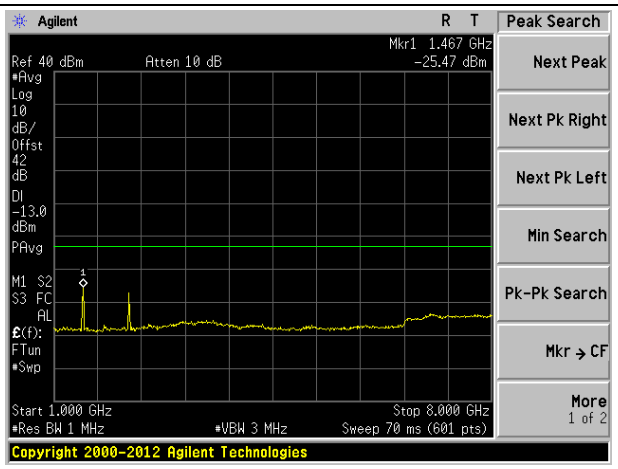
Downlink:

Intermodulation of LTE 1.4MHz Bandwidth

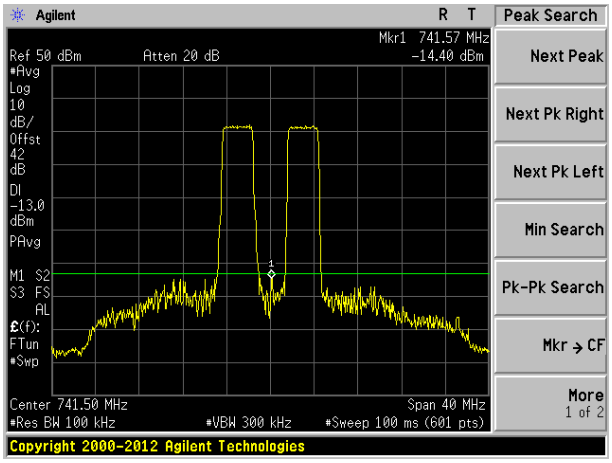
Intermodulation - Low part of band

30MHz-1000MHz spurious emissions

1000MHz-8000MHz spurious emissions


Intermodulation - High part of band

30MHz-1000MHz spurious emissions

1000MHz-8000MHz spurious emissions


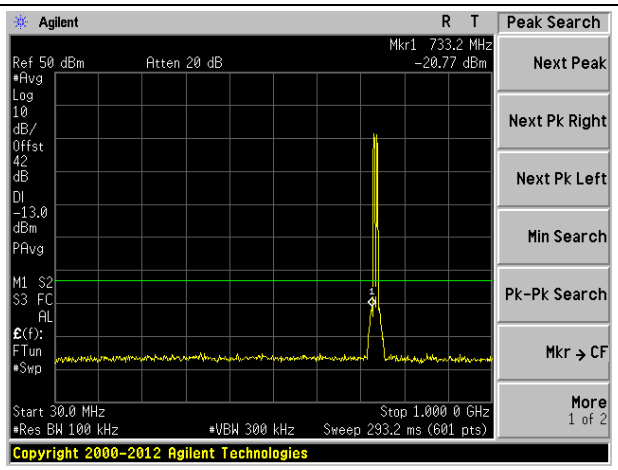
Intermodulation of LTE 3MHz Bandwidth

Intermodulation - Low part of band

30MHz-1000MHz spurious emissions

1000MHz-8000MHz spurious emissions


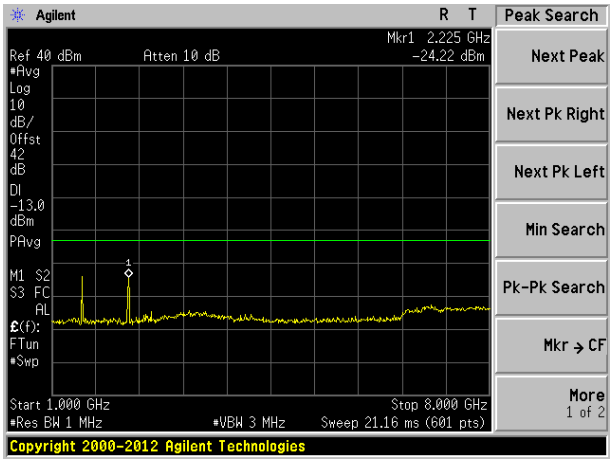
Intermodulation - High part of band



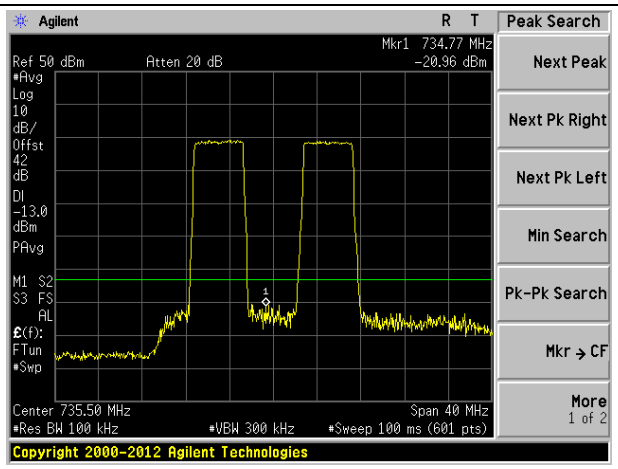
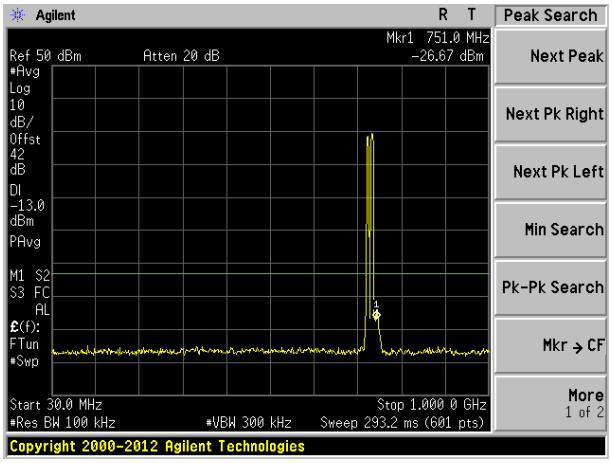
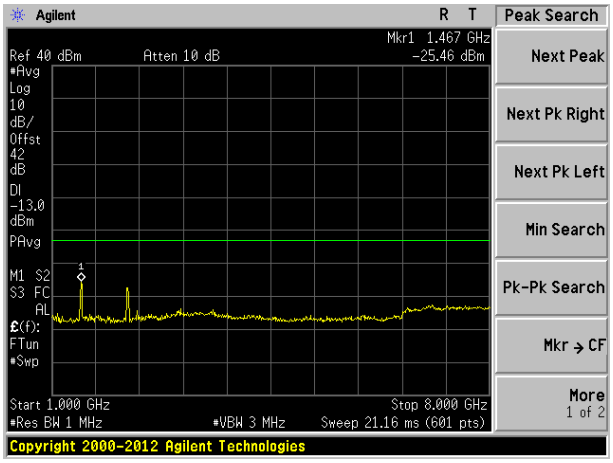
30MHz-1000MHz spurious emissions



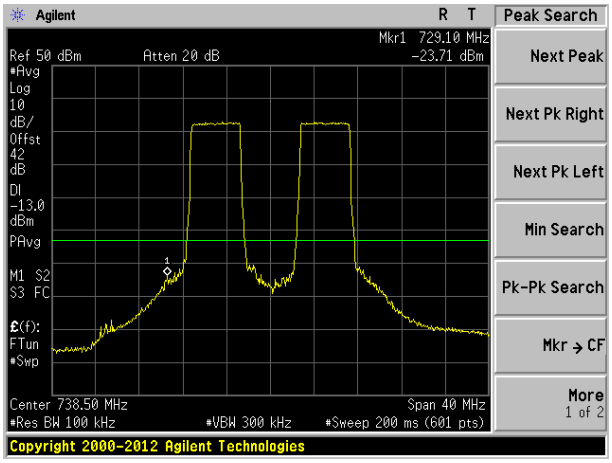
1000MHz-8000MHz spurious emissions



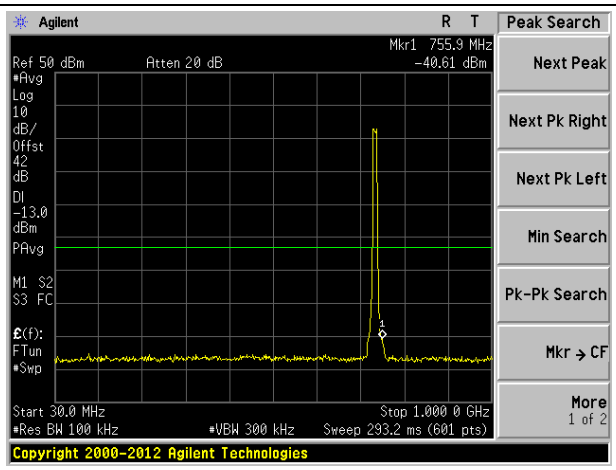
Intermodulation of LTE 5MHz Bandwidth

Intermodulation - Low part of band

30MHz-1000MHz spurious emissions

1000MHz-8000MHz spurious emissions


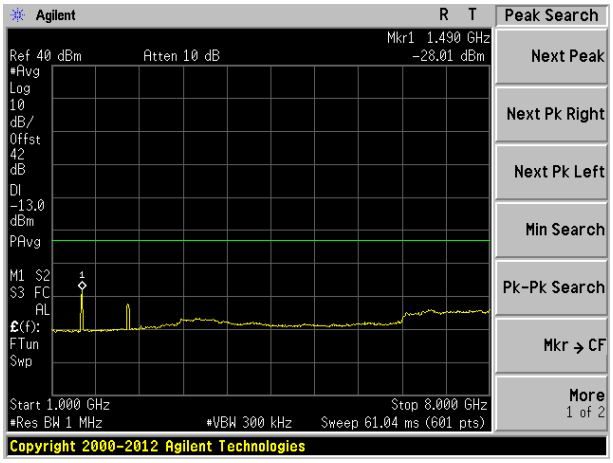
Intermodulation - High part of band



30MHz-1000MHz spurious emissions

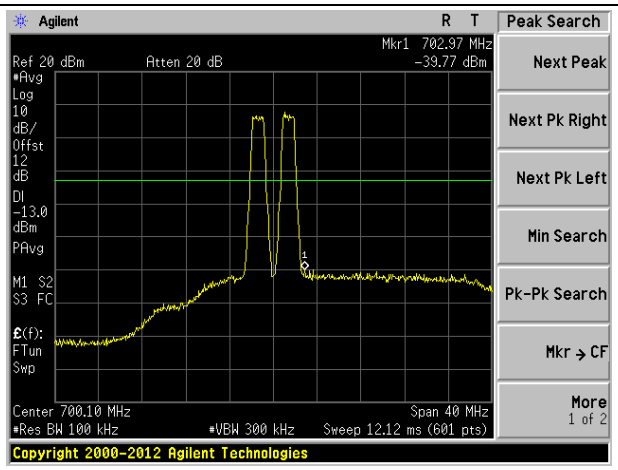
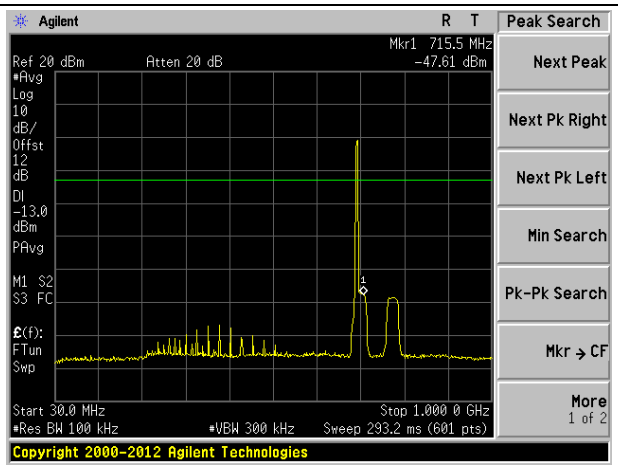
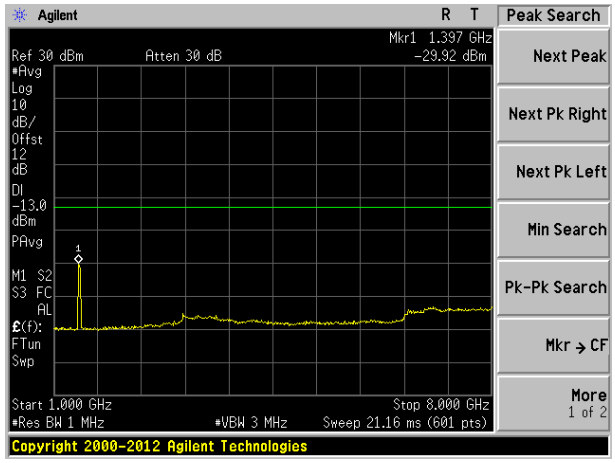


1000MHz-8000MHz spurious emissions

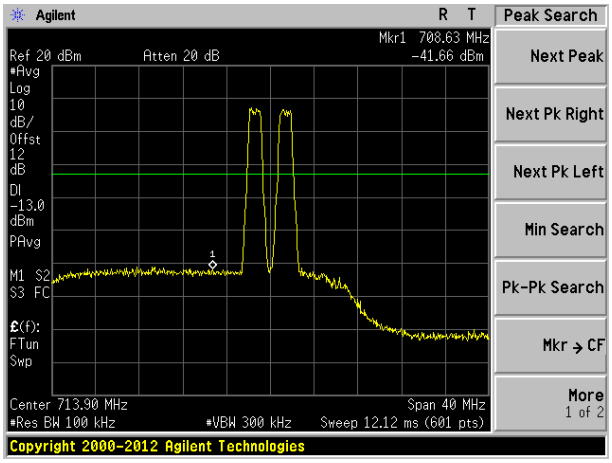


Uplink:

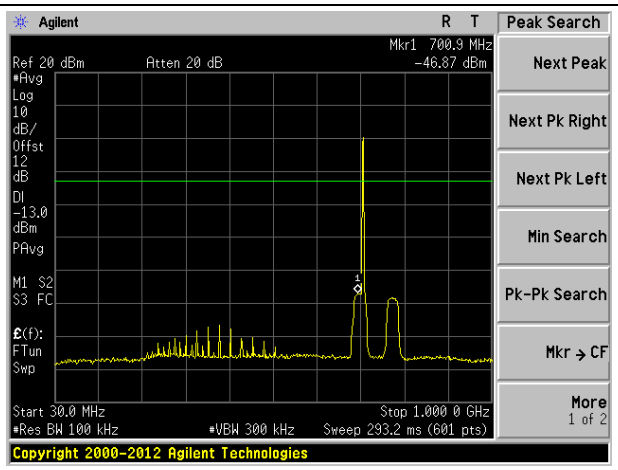
Intermodulation of LTE 1.4MHz Bandwidth

Intermodulation - Low part of band

30MHz-1000MHz spurious emissions

1000MHz-8000MHz spurious emissions


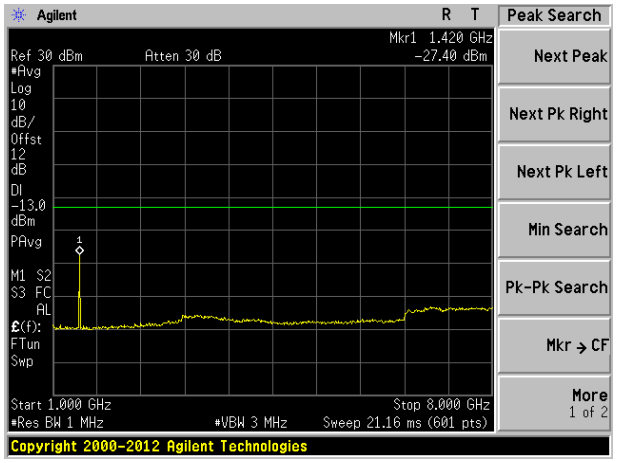
Intermodulation - High part of band



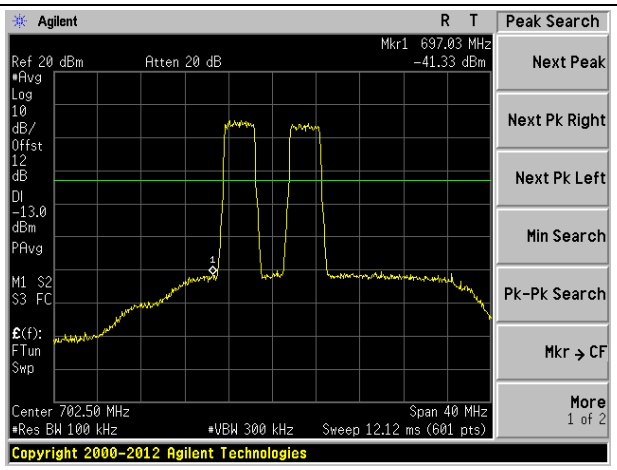
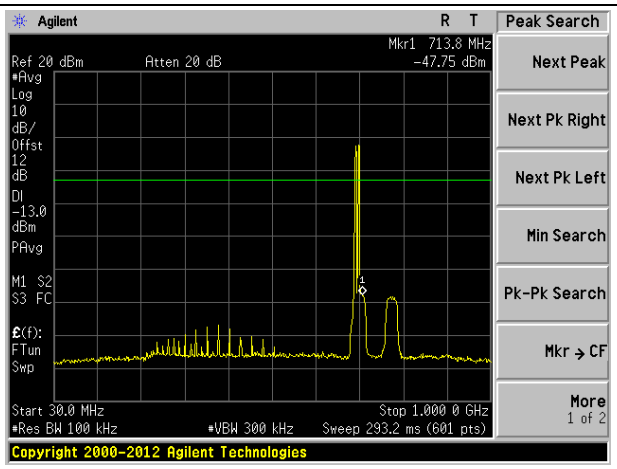
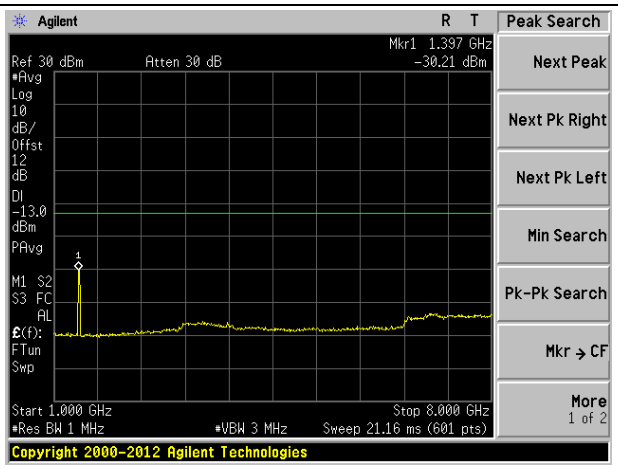
30MHz-1000MHz spurious emissions



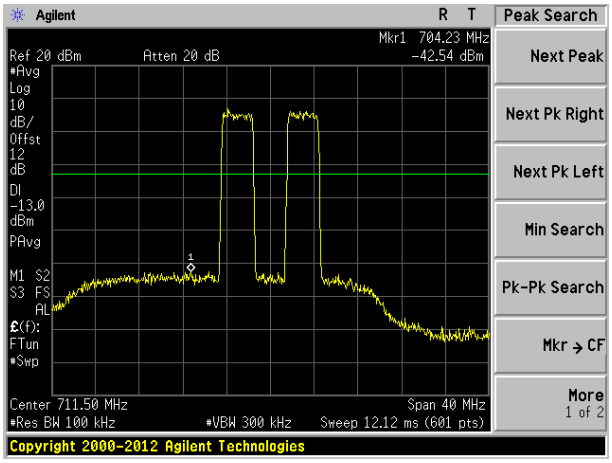
1000MHz-8000MHz spurious emissions



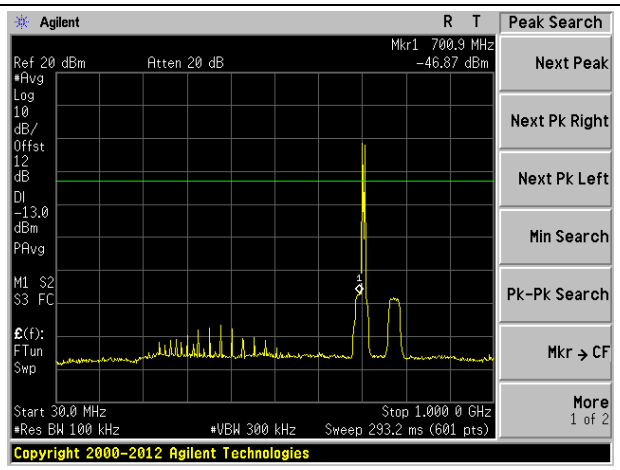
Intermodulation of LTE 3MHz Bandwidth

Intermodulation - Low part of band

30MHz-1000MHz spurious emissions

1000MHz-8000MHz spurious emissions


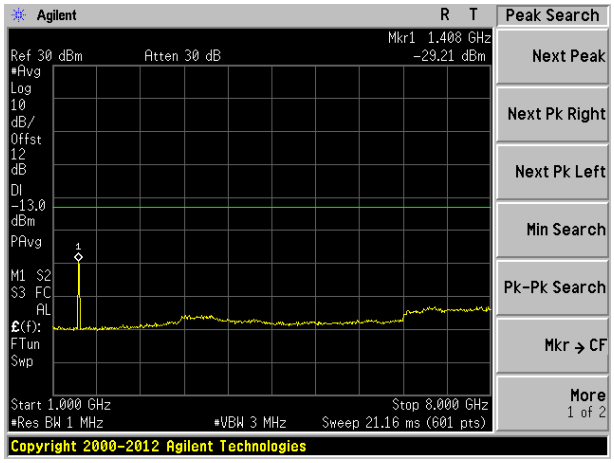
Intermodulation - High part of band



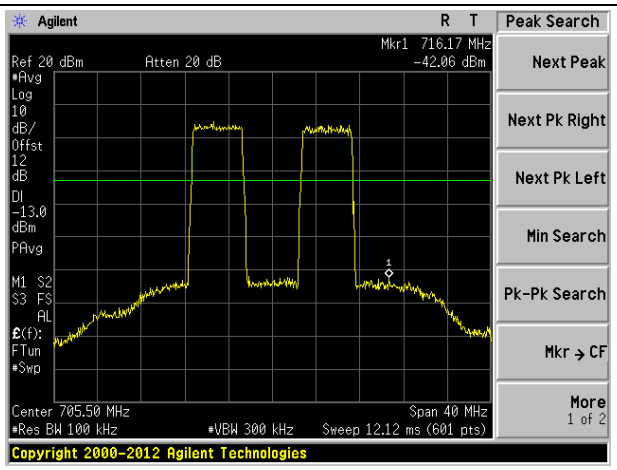
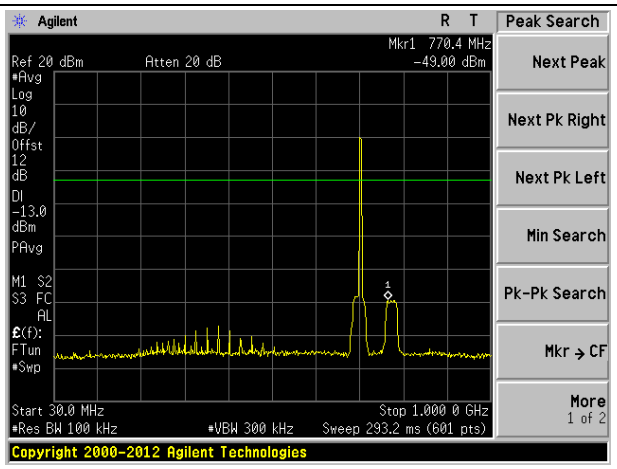
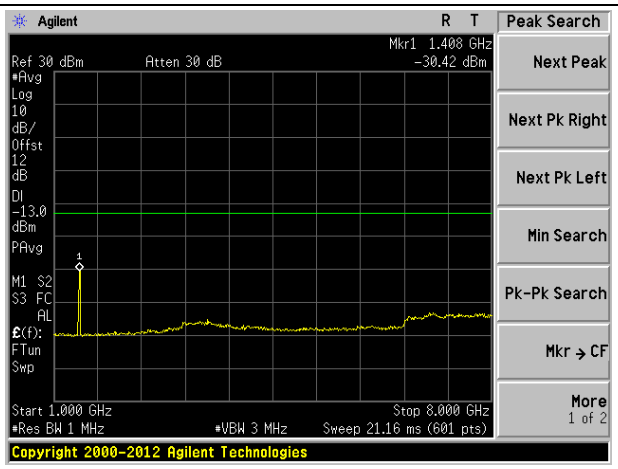
30MHz-1000MHz spurious emissions

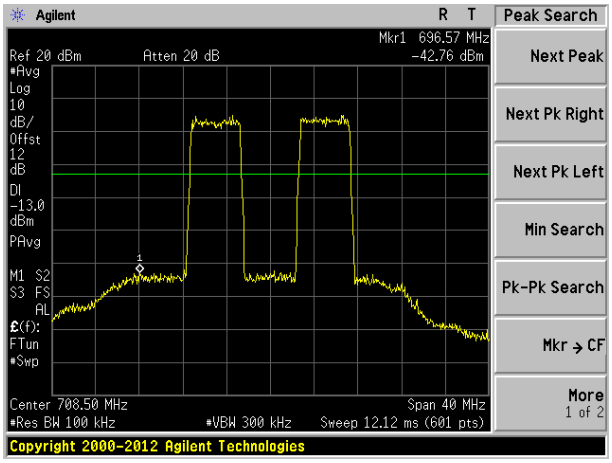
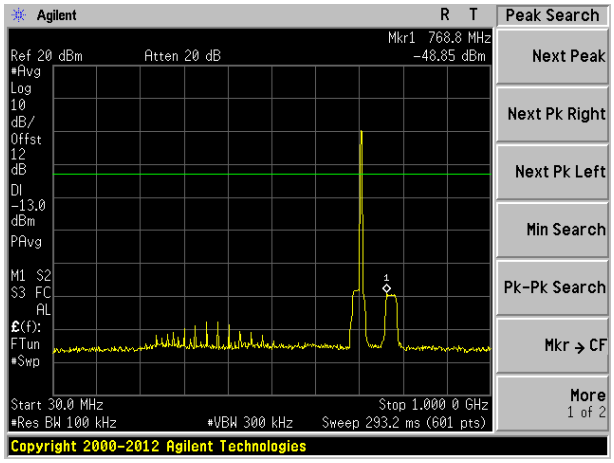
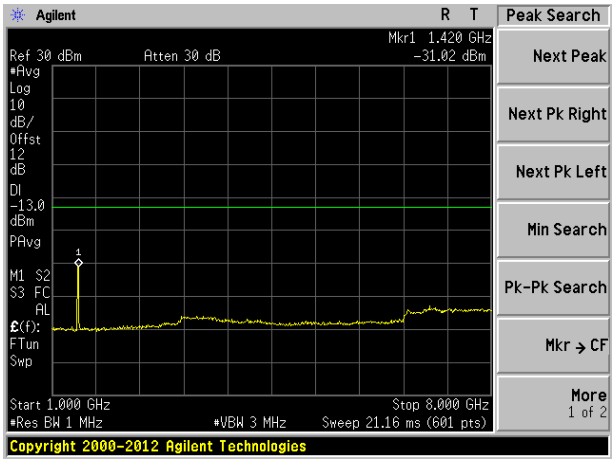


1000MHz-8000MHz spurious emissions



Intermodulation of LTE 5MHz Bandwidth

Intermodulation - Low part of band

30MHz-1000MHz spurious emissions

1000MHz-8000MHz spurious emissions


Intermodulation - High part of band

30MHz-1000MHz spurious emissions

1000MHz-8000MHz spurious emissions


12 FIELD STRENGTH OF SPURIOUS RADIATION MEASUREMENT

12.1 Standard Applicable

According to FCC § 2.1053 and § 27.53(g)

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)		
32.54	Vertical	-47.56	-13.00	Pass
75.65	V	-51.33		
135.44	V	-52.37		
241.57	V	-43.47		
282.55	V	---		
434.21	V	---		
38.42	Horizontal	-46.95	-13.00	Pass
63.56	H	-51.22		
121.27	H	-53.41		
198.69	H	-46.27		
255.71	H	---		
439.68	H	---		
Test mode:	**Above 1G**		**Test channel:**	**Lowest channel**
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
2456.00	Vertical	-55.77	-13.00	Pass
3725.00	V	-56.04		
4657.00	V	-53.58		
6405.00	V	---		
7728.00	V	---		
1496.00	Horizontal	-55.14	-13.00	Pass
2347.00	H	-54.39		
3821.00	H	-56.28		
5346.00	H	---		
7241.00	H	---		

Test mode:	Below 1G		Test channel:	Middle channel
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
34.53	Vertical	-44.85	-13.00	Pass
67.44	V	-46.25		
128.47	V	-44.38		
214.53	V	-51.04		
285.88	V	---		
453.74	V	---		
32.30	Horizontal	-46.25	-13.00	Pass
55.42	H	-48.53		
115.17	H	-49.64		
245.38	H	-50.53		
289.85	H	---		
498.14	H	---		
Test mode:	**Above 1G**		**Test channel:**	**Middle channel**
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
1824.00	Vertical	-57.24	-13.00	Pass
2833.00	V	-55.36		
3869.00	V	-51.42		
5127.00	V	---		
6899.00	V	---		
1857.00	Horizontal	-54.52	-13.00	Pass
2724.00	H	-54.34		
4245.00	H	-54.09		
5765.00	H	---		
7235.00	H	---		

Test mode:	Below 1G		Test channel:	Highest channel
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
42.65	Vertical	-46.35	-13.00	Pass
69.43	V	-43.74		
115.42	V	-45.33		
241.71	V	-50.42		
385.38	V	---		
459.84	V	---		
41.37	Horizontal	-50.72	-13.00	Pass
82.33	H	-51.27		
131.74	H	-47.51		
243.87	H	-50.35		
397.71	H	---		
484.05	H	---		
Test mode:	**Above 1G**		**Test channel:**	**Highest channel**
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
2174.00	Vertical	-57.56	-13.00	Pass
3561.00	V	-55.91		
4674.00	V	-53.27		
5834.00	V	---		
6507.00	V	---		
1357.00	Horizontal	-55.25	-13.00	Pass
2527.00	H	-56.21		
3976.00	H	-54.58		
5687.00	H	---		
7538.00	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)		
36.58	Vertical	-42.53	-13.00	Pass
68.62	V	-45.65		
124.63	V	-48.22		
245.72	V	-46.57		
376.42	V	---		
467.04	V	---		
32.75	Horizontal	-46.25	-13.00	Pass
75.69	H	-49.53		
118.56	H	-46.17		
214.75	H	-47.13		
286.44	H	---		
384.27	H	---		
Test mode:	**Above 1G**		**Test channel:**	**Lowest channel**
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
2862.00	Vertical	-54.40	-13.00	Pass
3864.00	V	-55.77		
4937.00	V	-56.48		
5724.00	V	---		
7266.00	V	---		
1768.00	Horizontal	-53.85	-13.00	Pass
2756.00	H	-54.56		
4358.00	H	-53.27		
5469.00	H	---		
7247.00	H	---		

Test mode:	Below 1G		Test channel:	Middle channel
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
35.16	Vertical	-51.43	-13.00	Pass
74.56	V	-44.27		
124.65	V	-50.21		
216.29	V	-51.44		
276.87	V	---		
482.45	V	---		
31.42	Horizontal	-52.75	-13.00	Pass
76.85	H	-46.45		
143.52	H	-51.40		
214.75	H	-51.62		
387.44	H	---		
493.54	H	---		
Test mode:	**Above 1G**		**Test channel:**	**Middle channel**
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
2453.00	Vertical	-56.57	-13.00	Pass
3785.00	V	-54.95		
5138.00	V	-53.65		
6479.00	V	---		
7526.00	V	---		
1457.00	Horizontal	-55.42	-13.00	Pass
3142.00	H	-54.28		
4768.00	H	-57.33		
6135.00	H	---		
7288.00	H	---		

Test mode:	Below 1G		Test channel:	Highest channel
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
32.59	Vertical	-46.89	-13.00	Pass
75.85	V	-44.72		
135.42	V	-45.38		
186.42	V	-51.28		
385.88	V	---		
458.93	V	---		
38.59	Horizontal	-50.36	-13.00	Pass
125.34	H	-46.45		
245.53	H	-50.93		
381.72	H	-51.47		
456.82	H	---		
513.67	H	---		
Test mode:	**Above 1G**		**Test channel:**	**Highest channel**
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
2435.00	Vertical	-56.43	-13.00	Pass
3571.00	V	-55.77		
4621.00	V	-54.24		
5244.00	V	---		
6971.00	V	---		
1240.00	Horizontal	-57.40	-13.00	Pass
2869.00	H	-55.21		
4625.00	H	-52.96		
6235.00	H	---		
7694.00	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 § 27.54

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:

LTE mode					
Reference Frequency: Middle channel=737.00MHz					
Voltage with nominal Voltage	Power Supplied (VAC)	Temperature (℃)	Frequency Error (Hz)	Frequency Error (ppm)	Result
100%	120V	-40	21	0.0285	Passed
100%		-30	19	0.0258	Passed
100%		-20	15	0.0204	Passed
100%		-10	16	0.0217	Passed
100%		0	14	0.0190	Passed
100%		10	11	0.0149	Passed
100%		20	12	0.0163	Passed
100%		30	16	0.0217	Passed
100%		40	14	0.0190	Passed
100%		50	21	0.0285	Passed
100%		55	20	0.0271	Passed
85%	102V	20	23	0.0312	Passed
115%	138V	20	25	0.0339	Passed

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

Uplink:

LTE mode					
Reference Frequency: Middle channel=707.00MHz					
Voltage with nominal Voltage	Power Supplied (VAC)	Temperature (℃)	Frequency Error (Hz)	Frequency Error (ppm)	Result
100%	120V	-40	23	0.0325	Passed
100%		-30	19	0.0269	Passed
100%		-20	15	0.0212	Passed
100%		-10	10	0.0141	Passed
100%		0	11	0.0156	Passed
100%		10	13	0.0184	Passed
100%		20	17	0.0240	Passed
100%		30	18	0.0255	Passed
100%		40	19	0.0269	Passed
100%		50	20	0.0283	Passed
100%		55	22	0.0311	Passed
85%	102V	20	19	0.0269	Passed
115%	138V	20	22	0.0311	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.

14.2 Test setup

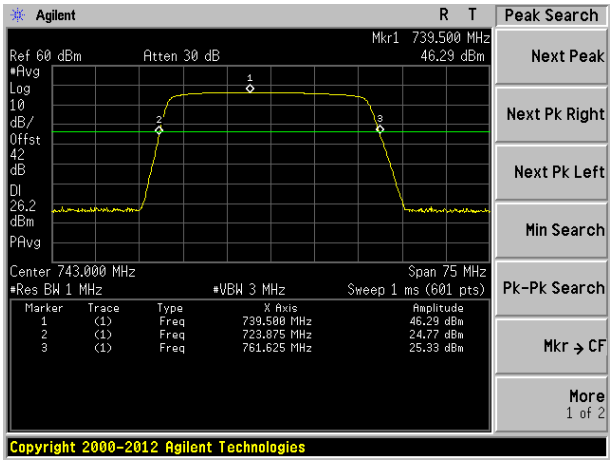
Please refer the section §6.2 Configuration of Tested System.

14.3 Test Procedure

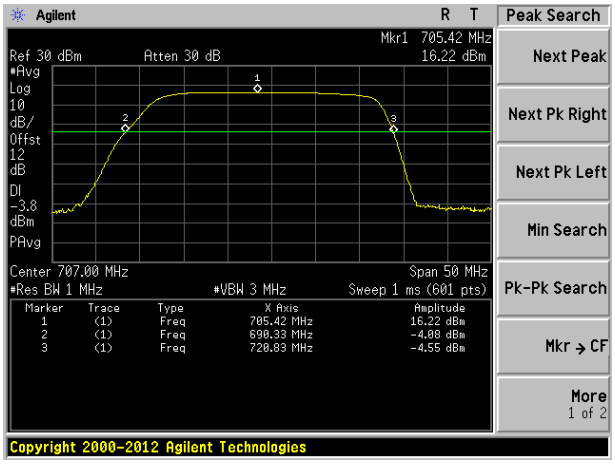
1. The EUT RF output port was connected to spectrum analyzer.
2. The level of RF input signal shall be increased, until the maximum output power per channel, declared by client, is reached.
3. A continuous sinusoidal RF signal shall be fed successively at frequency offsets 100 MHz from the edges of the relevant MS or BTS transmit frequency band into the relevant input port of the repeater.
4. The RF output curve was recorded by spectrum analyzer.

14.4 Test Result

Out-of-Band Rejection



Downlink



Uplink

15 AC 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 C63.4-2014.
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 120VAC/60Hz power source.

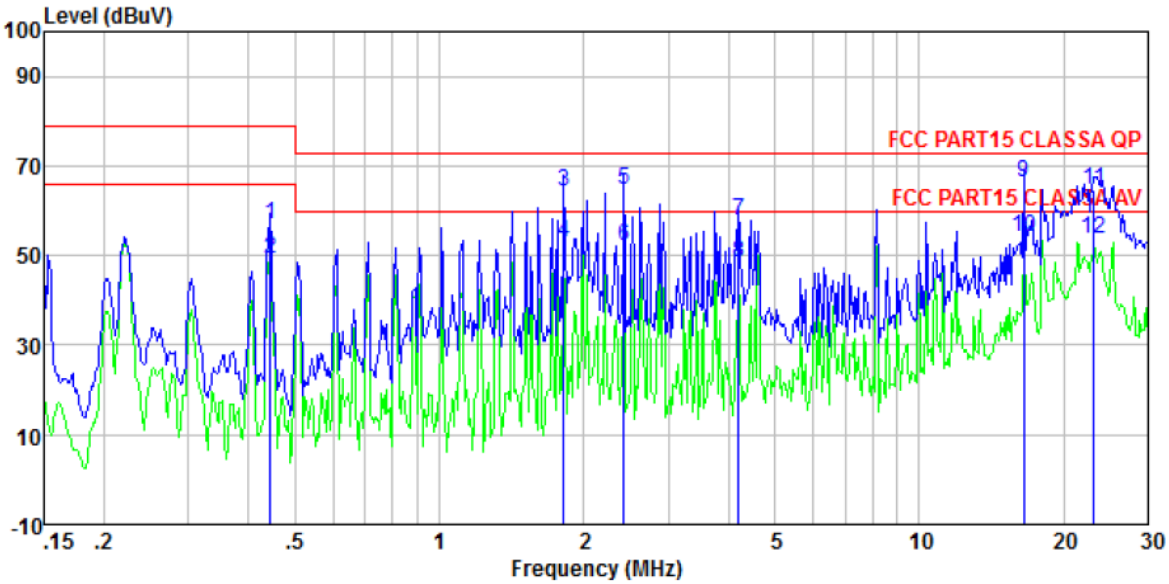
15.3 Test Procedure

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:

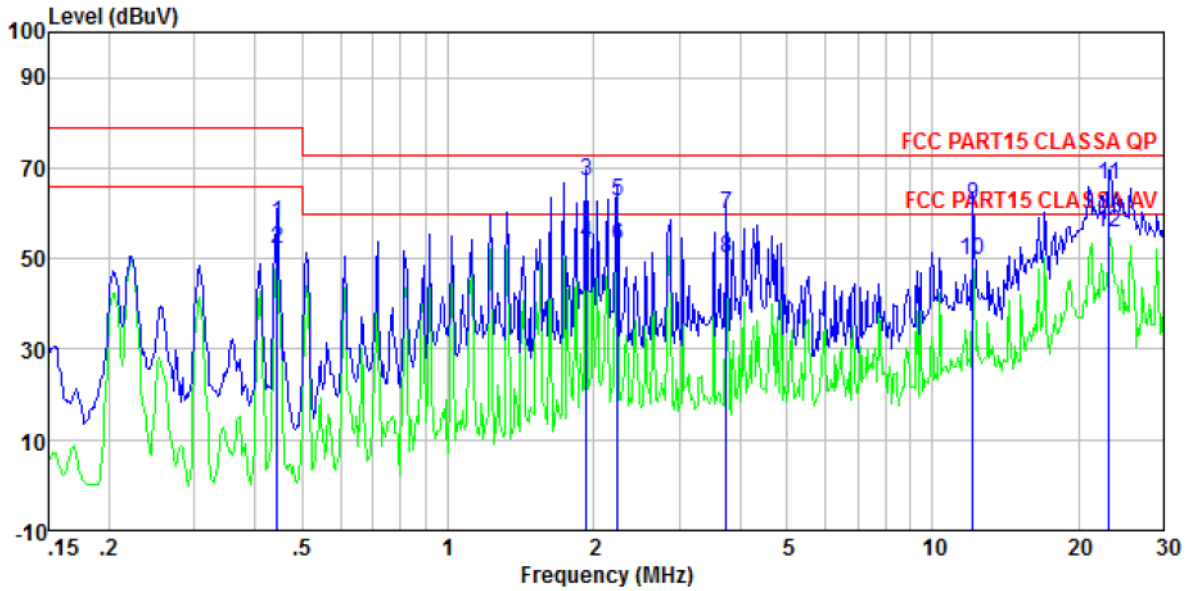
Line:



Condition : FCC PART15 CLASSA QP LISN-2013 LINE
Job No. : 0727
Test mode : Downlink mode
Test Engineer: Sky

	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.444	56.54	0.12	0.11	56.77	79.00	-22.23	QP
2	0.444	49.22	0.12	0.11	49.45	66.00	-16.55	Average
3	1.819	64.22	0.12	0.14	64.48	73.00	-8.52	QP
4	1.819	52.68	0.12	0.14	52.94	60.00	-7.06	Average
5	2.422	64.26	0.13	0.15	64.54	73.00	-8.46	QP
6	2.422	51.85	0.13	0.15	52.13	60.00	-7.87	Average
7	4.202	57.54	0.20	0.15	57.89	73.00	-15.11	QP
8	4.202	48.01	0.20	0.15	48.36	60.00	-11.64	Average
9	16.486	65.55	0.39	0.22	66.16	73.00	-6.84	QP
10	16.486	53.67	0.39	0.22	54.28	60.00	-5.72	Average
11	23.140	63.54	0.98	0.23	64.75	73.00	-8.25	QP
12	23.140	52.52	0.98	0.23	53.73	60.00	-6.27	Average

Neutral:

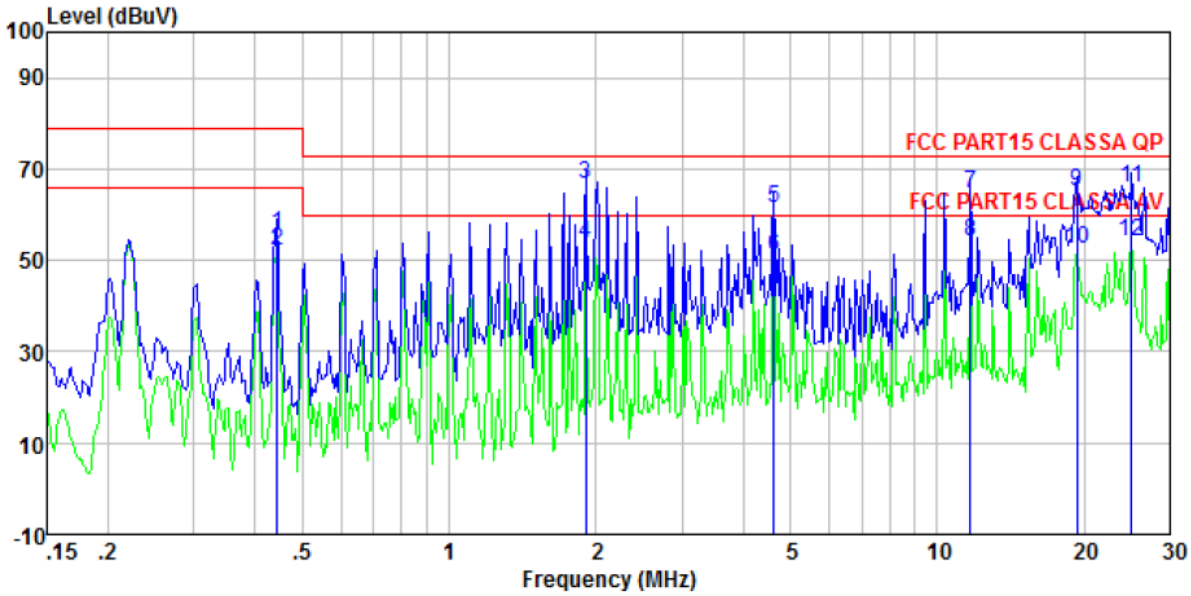


Condition : FCC PART15 CLASSA QP LISN-2013 NEUTRAL
Job No. : 0727
Test mode : Downlink mode
Test Engineer: Sky

	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.444	57.55	0.06	0.11	57.72	79.00	-21.28	QP
2	0.444	51.81	0.06	0.11	51.98	66.00	-14.02	Average
3	1.928	66.89	0.09	0.14	67.12	73.00	-5.88	QP
4	1.928	53.24	0.09	0.14	53.47	60.00	-6.53	Average
5	2.237	62.59	0.09	0.15	62.83	73.00	-10.17	QP
6	2.237	52.81	0.09	0.15	53.05	60.00	-6.95	Average
7	3.759	59.47	0.14	0.15	59.76	73.00	-13.24	QP
8	3.759	49.64	0.14	0.15	49.93	60.00	-10.07	Average
9	12.124	61.26	0.32	0.20	61.78	73.00	-11.22	QP
10	12.124	49.17	0.32	0.20	49.69	60.00	-10.31	Average
11	23.140	65.35	0.89	0.23	66.47	73.00	-6.53	QP
12	23.140	54.58	0.89	0.23	55.70	60.00	-4.30	Average

Uplink:

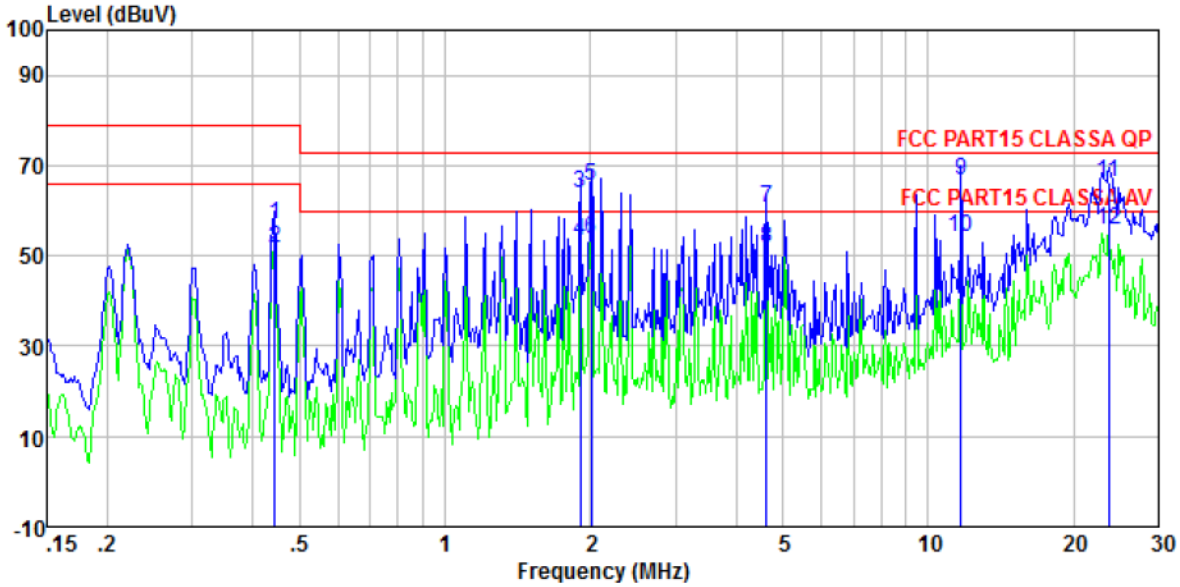
Line:



Condition : FCC PART15 CLASSA QP LISN-2013 LINE
Job No. : 0727
Test mode : Uplink mode
Test Engineer: Sky

	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.444	55.47	0.12	0.11	55.70	79.00	-23.30	QP
2	0.444	51.88	0.12	0.11	52.11	66.00	-13.89	Average
3	1.908	66.35	0.12	0.14	66.61	73.00	-6.39	QP
4	1.908	53.28	0.12	0.14	53.54	60.00	-6.46	Average
5	4.622	61.25	0.21	0.15	61.61	73.00	-11.39	QP
6	4.622	50.59	0.21	0.15	50.95	60.00	-9.05	Average
7	11.683	64.22	0.36	0.20	64.78	73.00	-8.22	QP
8	11.683	53.41	0.36	0.20	53.97	60.00	-6.03	Average
9	19.326	64.22	0.57	0.22	65.01	73.00	-7.99	QP
10	19.326	51.68	0.57	0.22	52.47	60.00	-7.53	Average
11	25.055	64.36	1.15	0.23	65.74	73.00	-7.26	QP
12	25.055	52.65	1.15	0.23	54.03	60.00	-5.97	Average

Neutral:

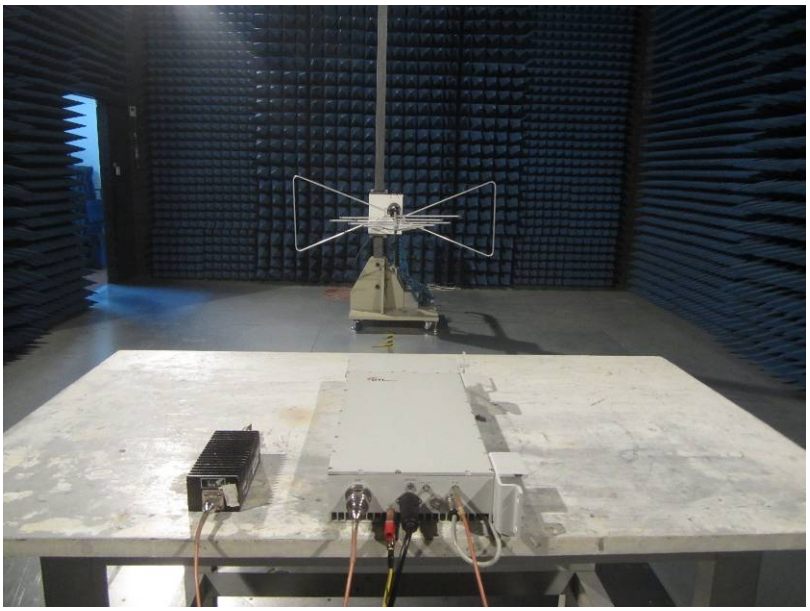


Condition : FCC PART15 CLASSA QP LISN-2013 NEUTRAL
Job No. : 0727
Test mode : Uplink mode
Test Engineer: Sky

	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.444	56.78	0.06	0.11	56.95	79.00	-22.05	QP
2	0.444	51.70	0.06	0.11	51.87	66.00	-14.13	Average
3	1.908	63.55	0.09	0.14	63.78	73.00	-9.22	QP
4	1.908	53.29	0.09	0.14	53.52	60.00	-6.48	Average
5	2.012	65.34	0.09	0.15	65.58	73.00	-7.42	QP
6	2.012	53.67	0.09	0.15	53.91	60.00	-6.09	Average
7	4.622	60.15	0.15	0.15	60.45	73.00	-12.55	QP
8	4.622	51.36	0.15	0.15	51.66	60.00	-8.34	Average
9	11.683	66.35	0.31	0.20	66.86	73.00	-6.14	QP
10	11.683	53.61	0.31	0.20	54.12	60.00	-5.88	Average
11	23.636	65.15	0.95	0.23	66.33	73.00	-6.67	QP
12	23.636	54.54	0.95	0.23	55.72	60.00	-4.28	Average

16 Test Setup Photo

Radiated Emission

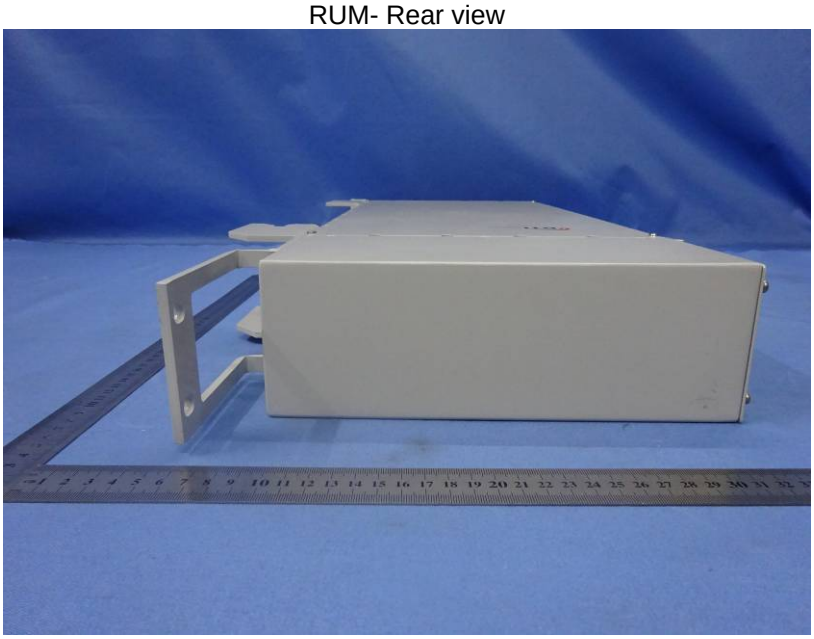


Conducted Emission

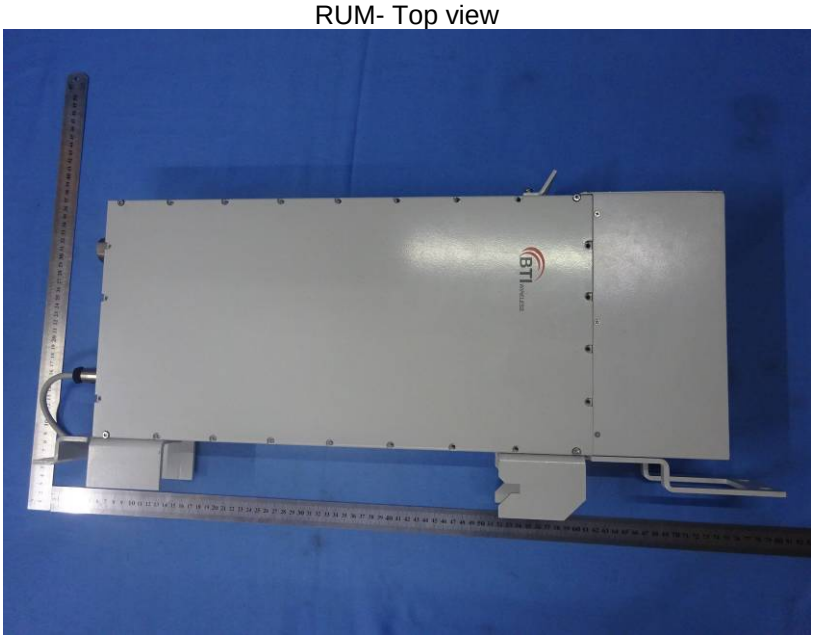
17 EUT Constructional Details

RUM- Front view

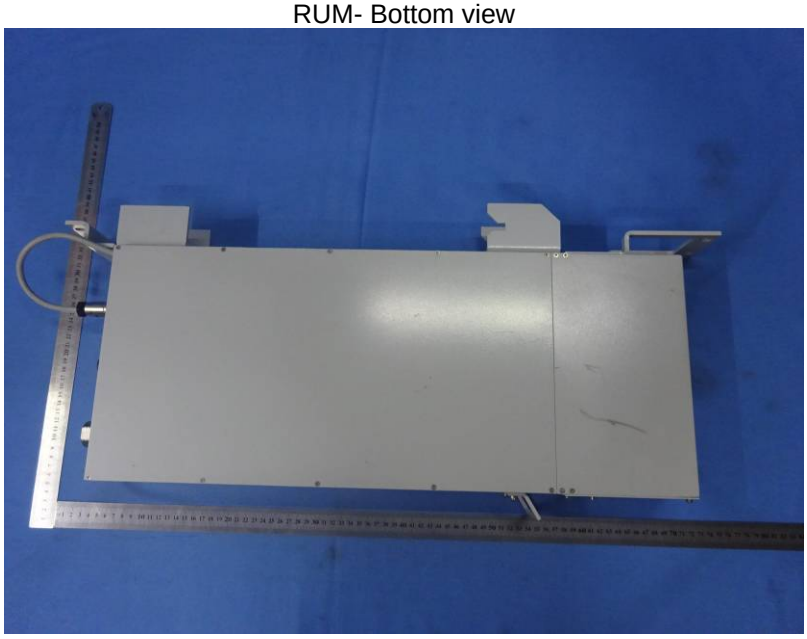
RUM- Rear view



RUM- Top view

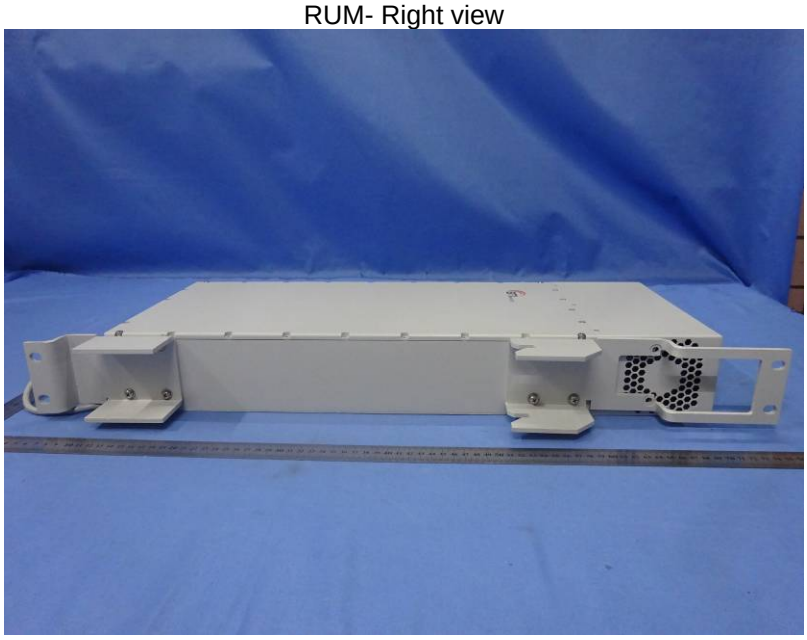


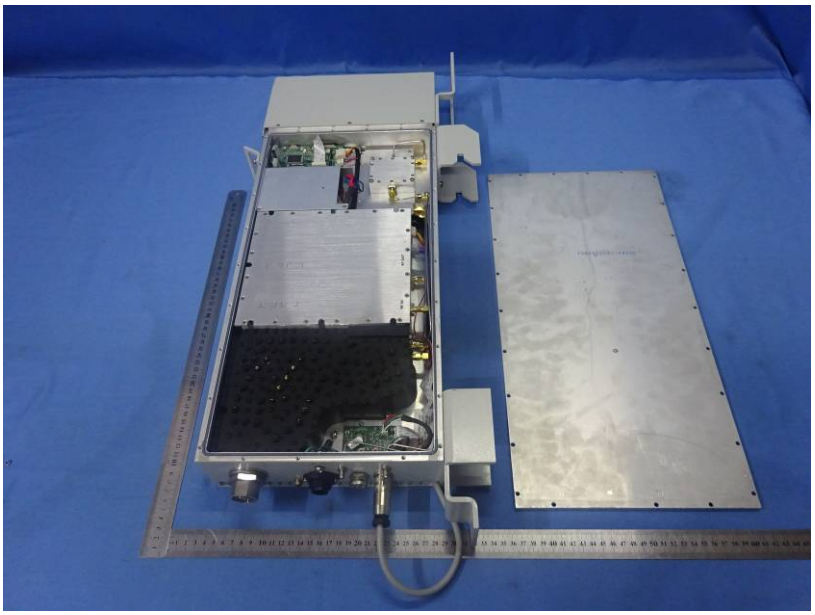
RUM- Bottom view

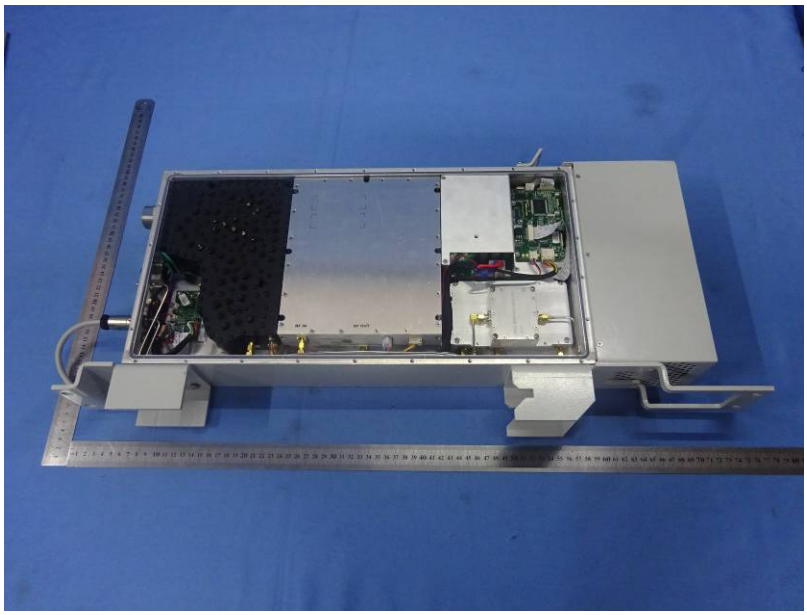


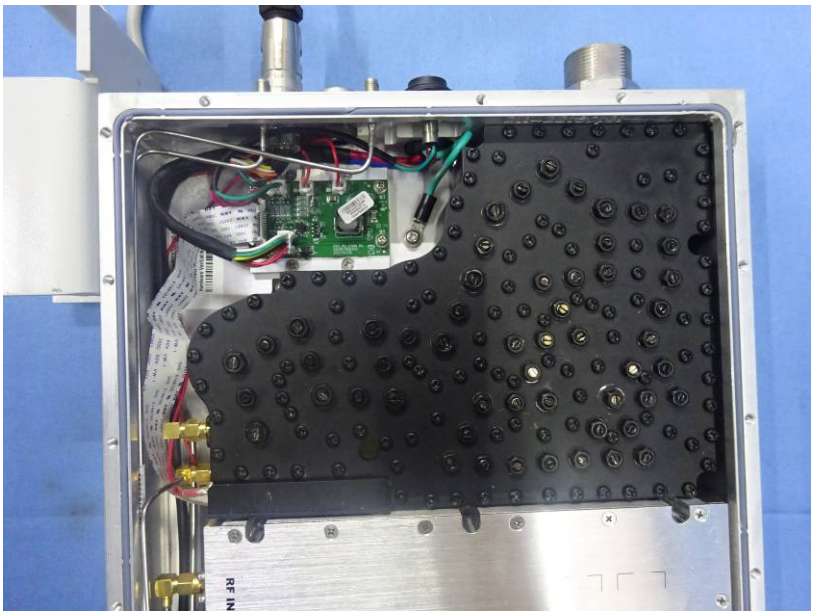
RUM- Left view

RUM- Right view





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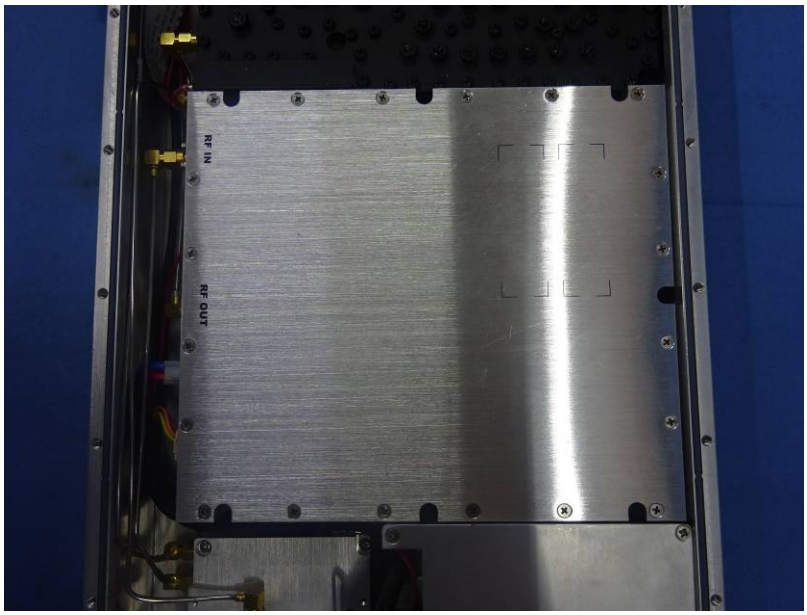
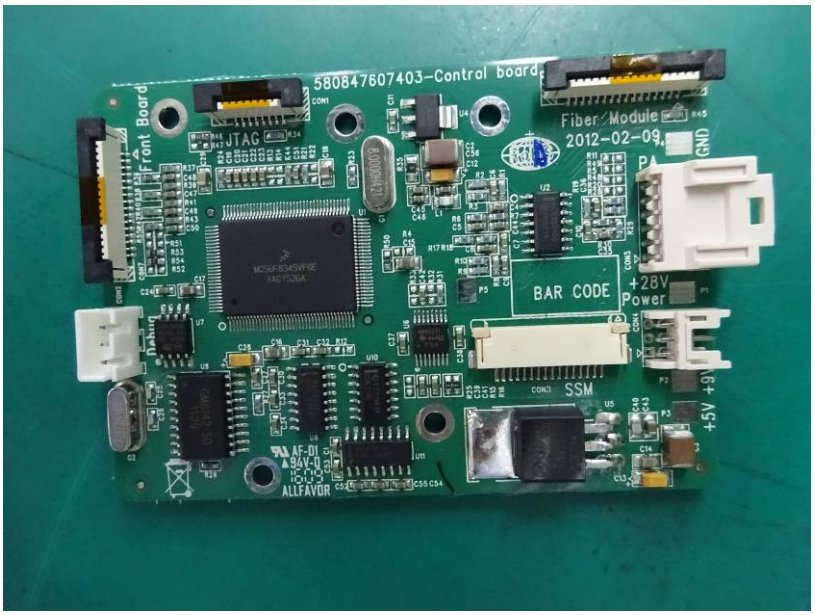

RF IN
RF OUT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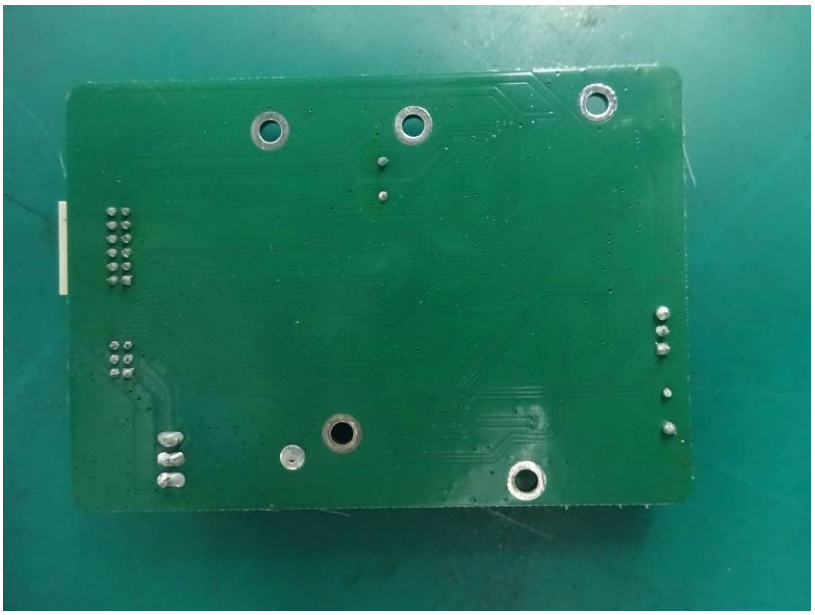
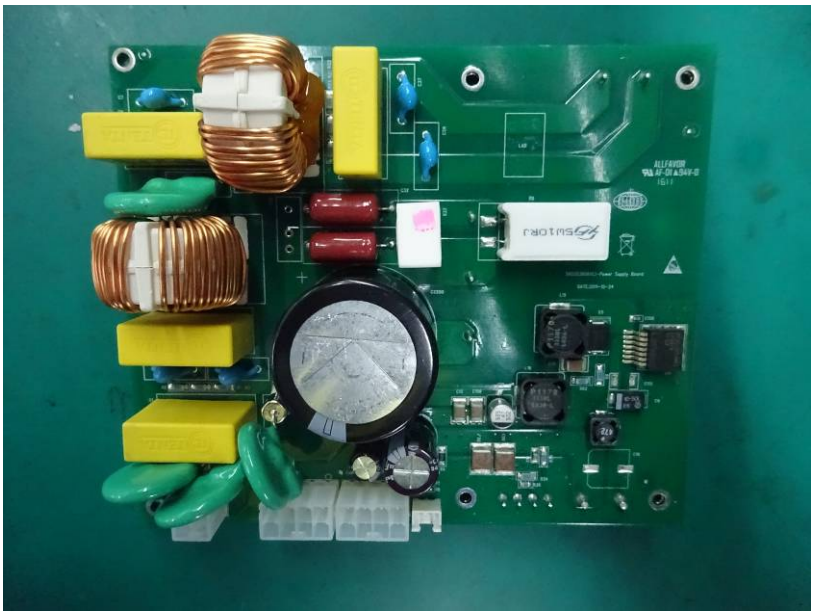
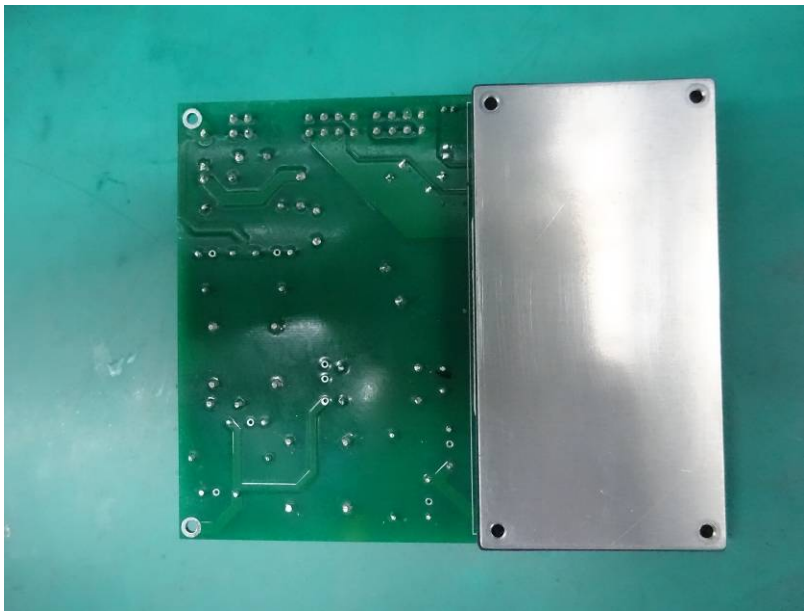
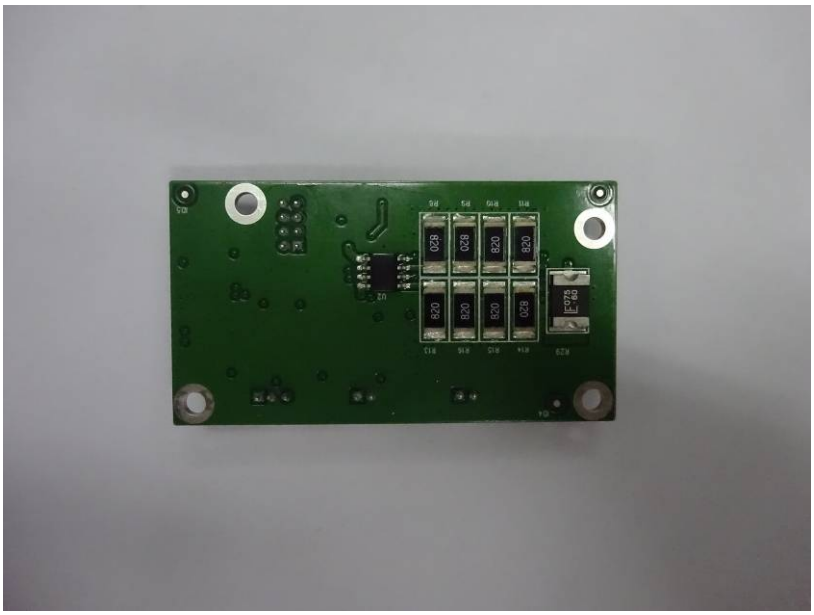
Front Board
JTAG
Fiber Module
2012-02-09
GND
PA
BAR CODE
+28V
Power
SSM
+5V
ALLFAVOR

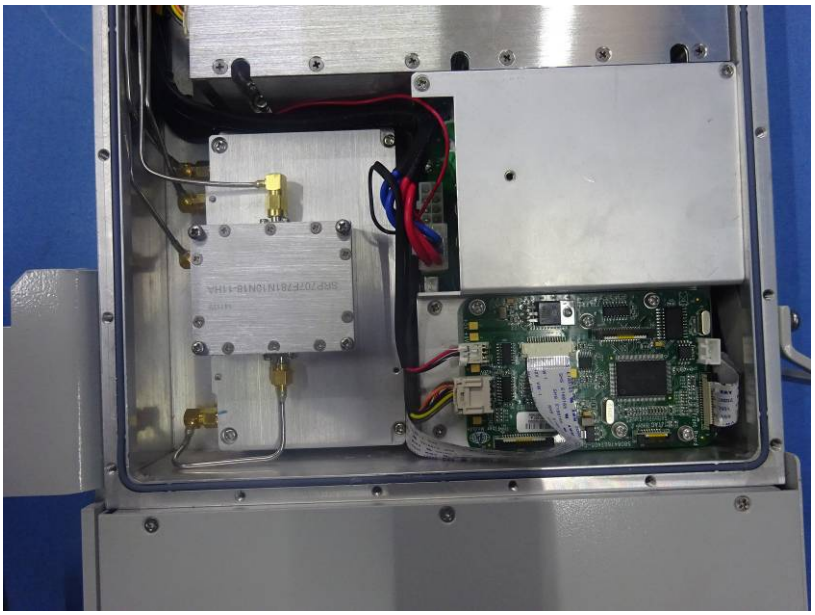




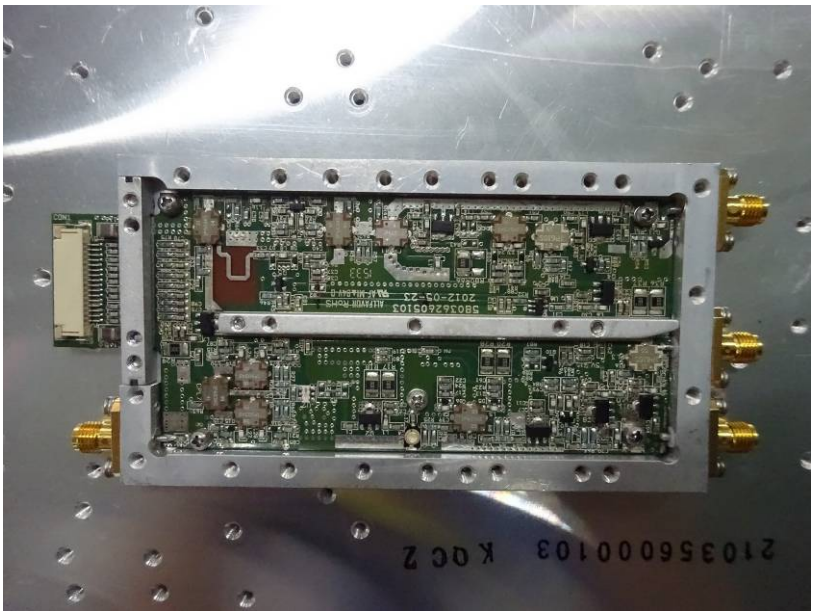


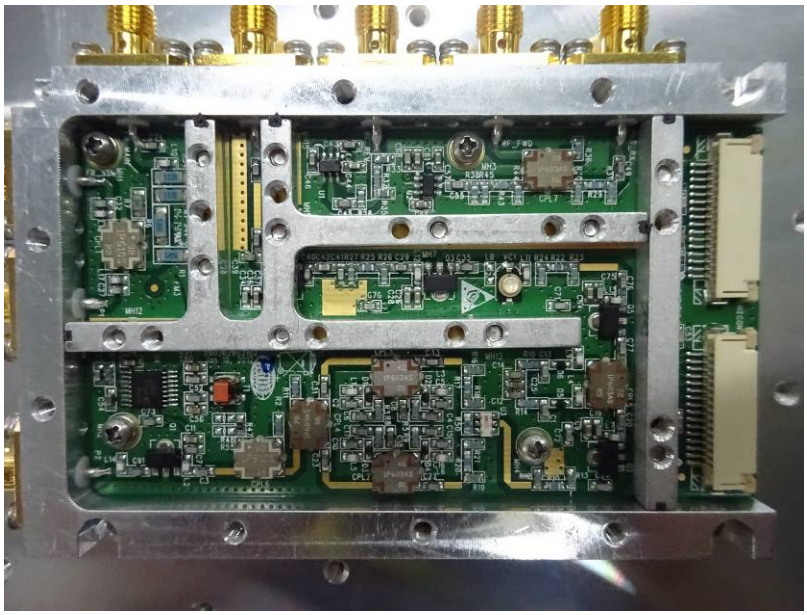

M1
M2
M3
M4
DAS RU CONN Bd.
580847609302
2011/01/06

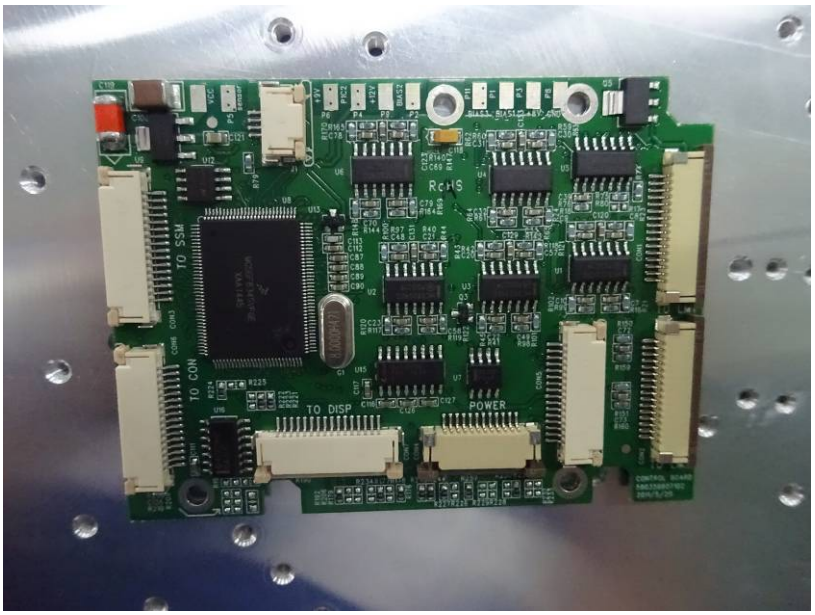





Product Name:Delay Filter
Model No:DFL0700-041-SL01
Item No:513050000001
Serial No:BWCBF61681604140017
Lot No:1615
FREQ:
IN→ OUT:722-763MHz



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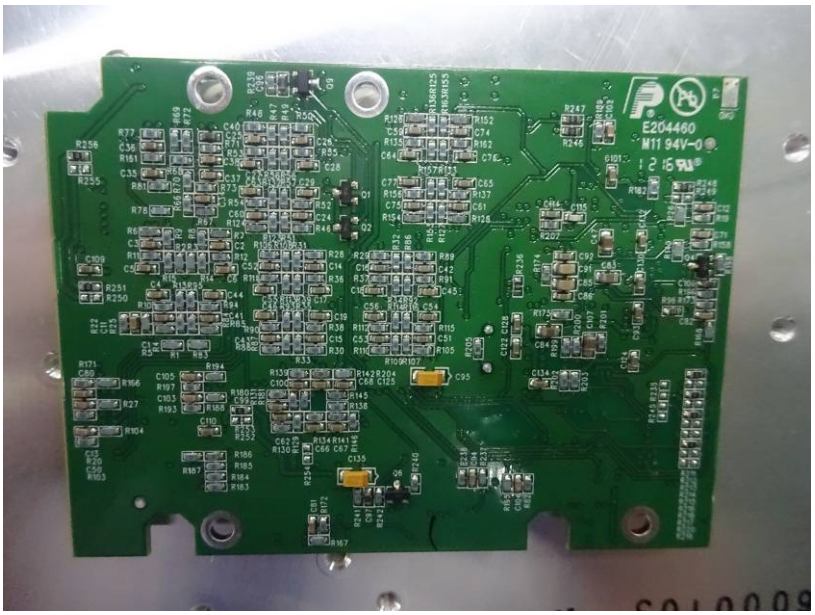
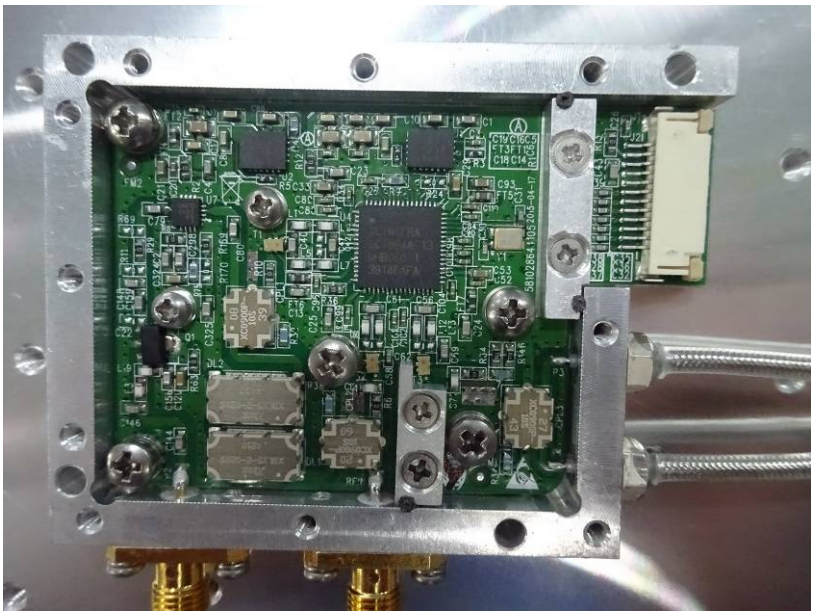
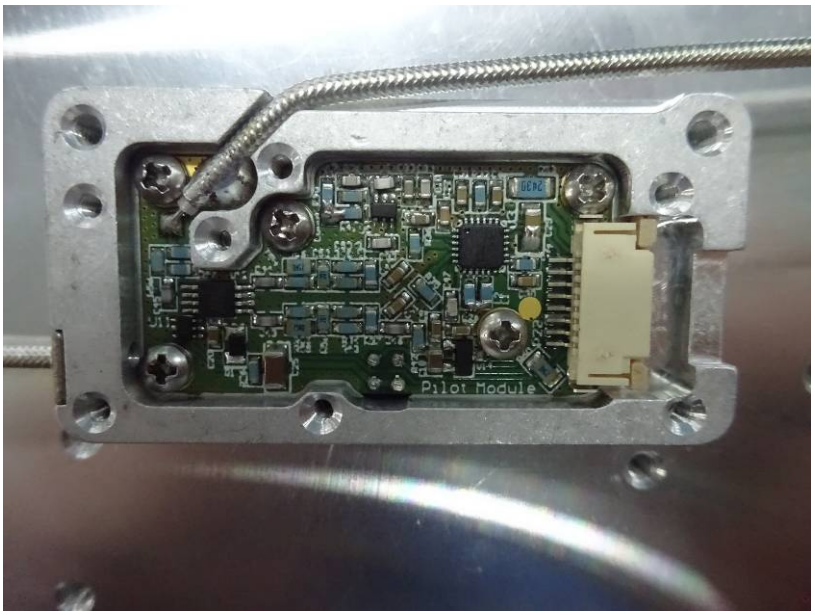
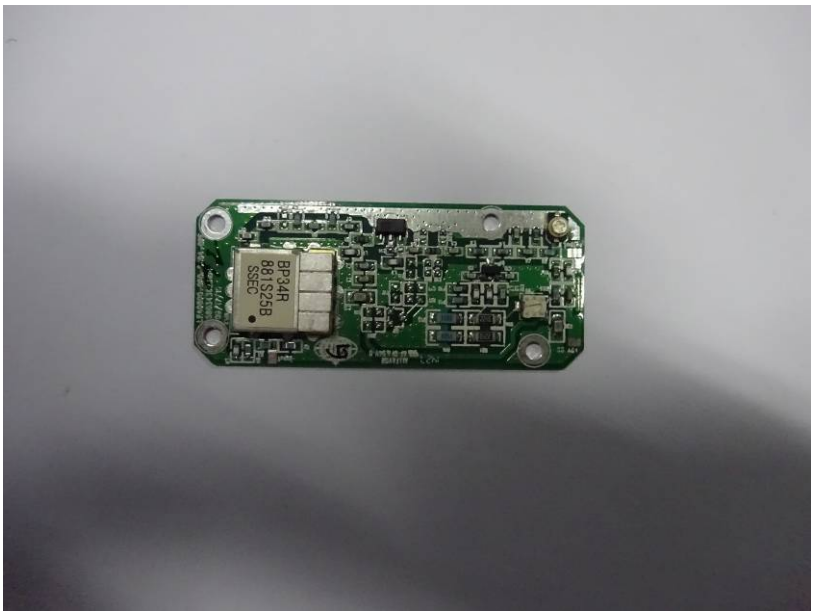
TO CON
TO DISP
POWER


E204460




Pilot Module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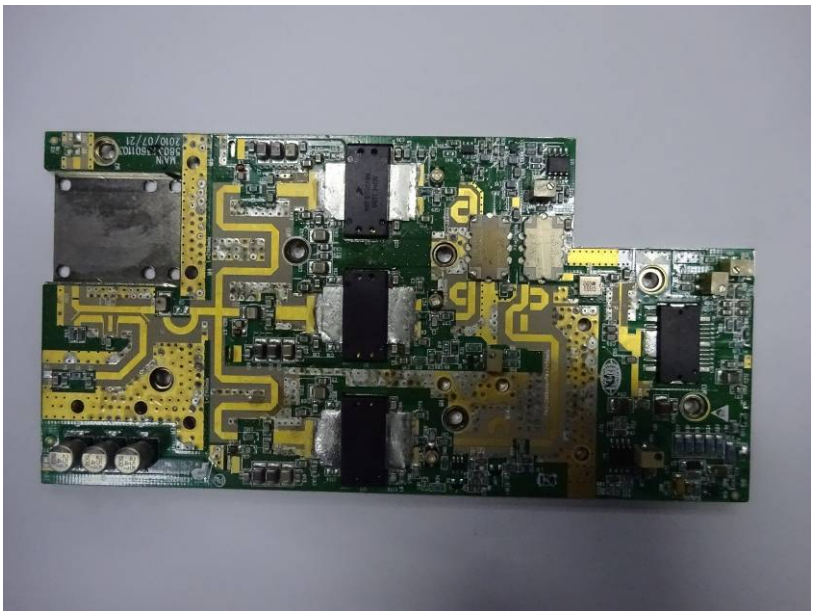
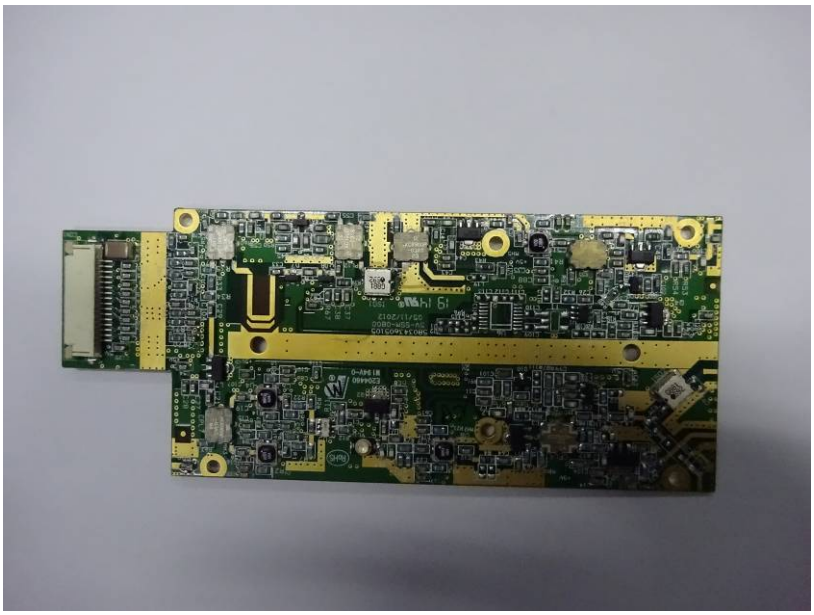
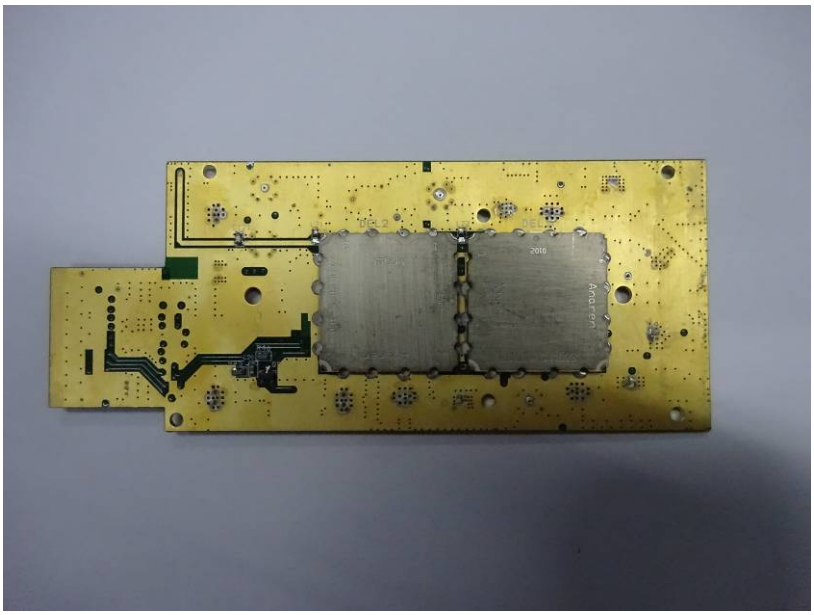
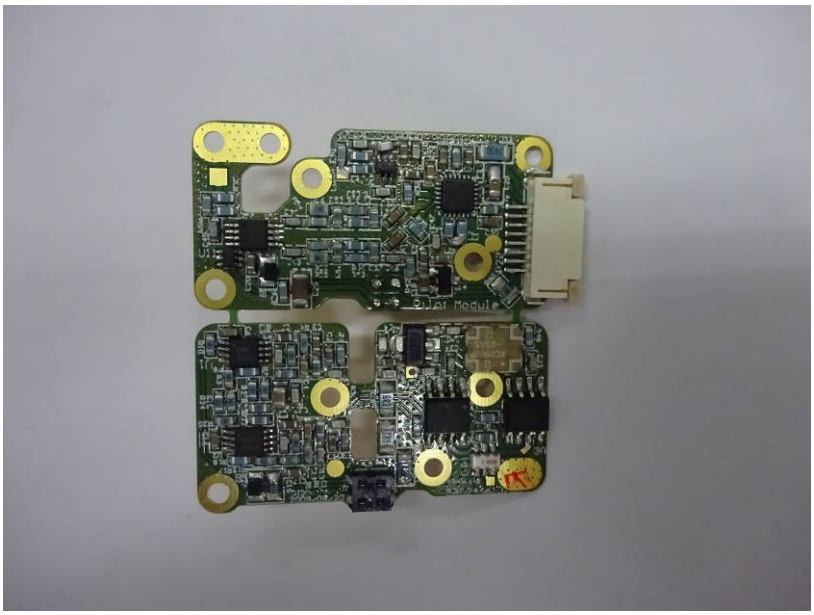
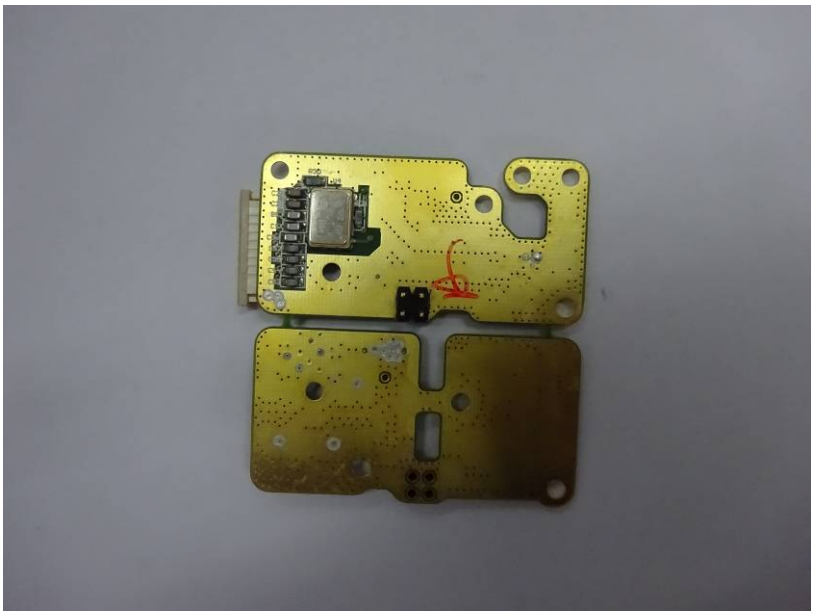
881S25B
SSEC

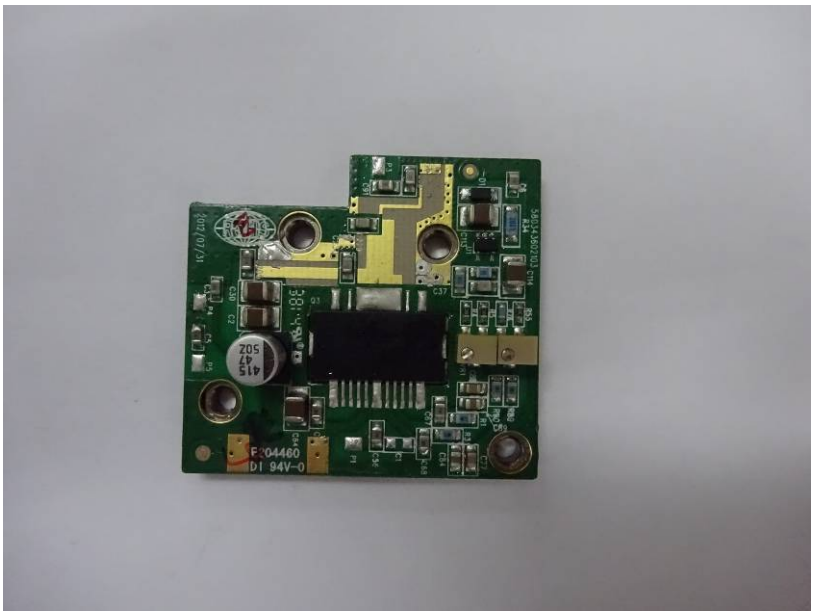


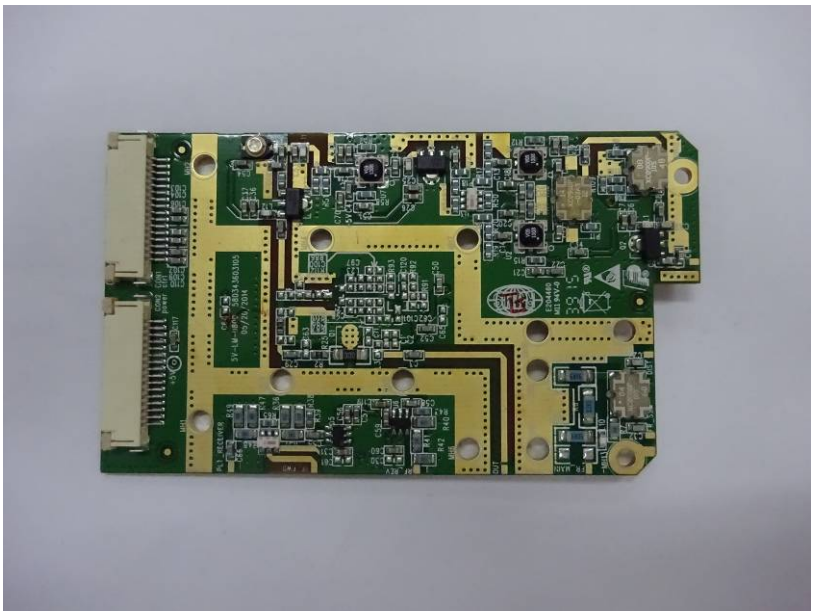


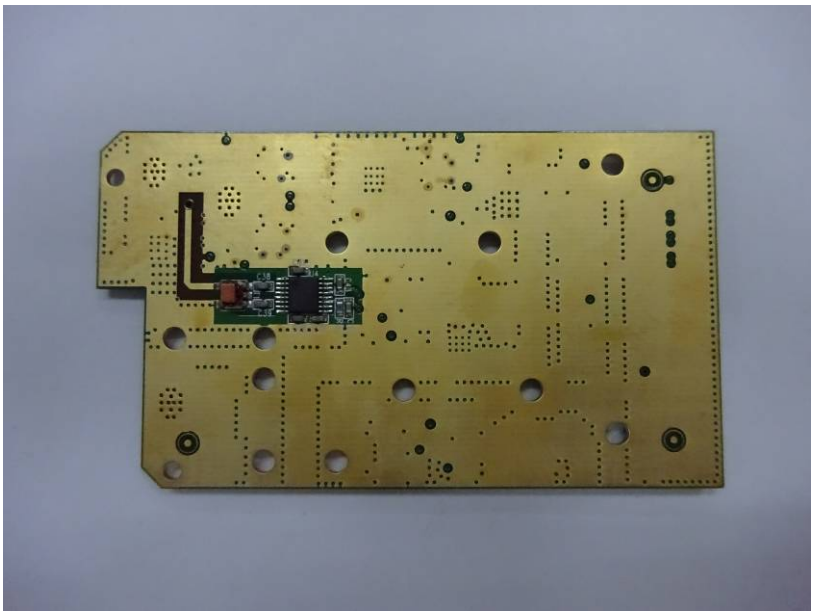










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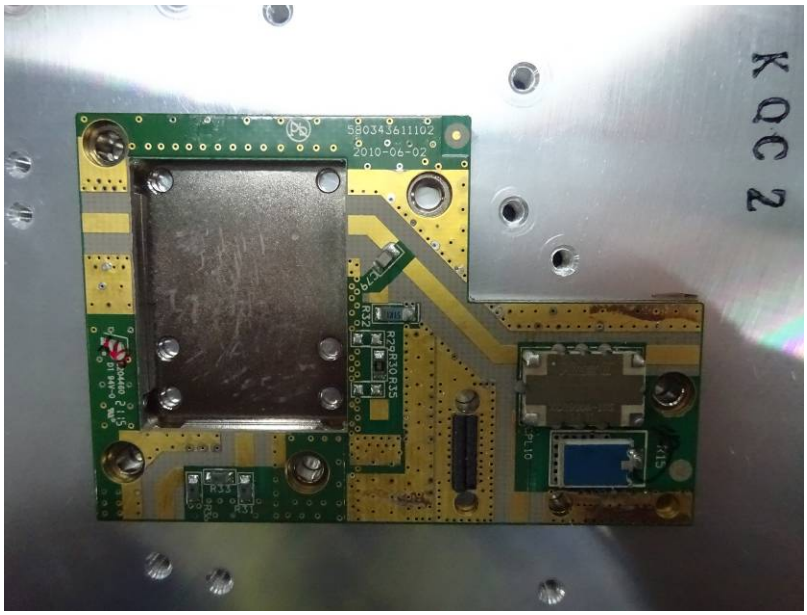

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