FCC Test Report

FCC Part 15 Subpart C §15.247

Product Name   :   GSM MOBILE PHONE

Model No.   :   L700

FCC ID   :   FOCGC661838

Prepared By: :   Inventec Appliances(Pudong) Corporation

Address: :   No.789 Pu Xing Road,Shanghai,PRC

Date of Receipt   :   2012.03.28

Date of Test   :   2012.03.28-2012.04.04

Report No.   :   20120328FCC-B

Test Report Certification

Date of Issue   :   Mar.28.2012

Report No.   :   20120328FCC-B

Product Name   : GSM MOBILE PHONE

Model No.   : L700

Trade Name   : JZH-Mobile

Applicant   : JZH-Mobile Communication technology Co., LTD

Address   : 1302,A block, Haisong Building, Chegongmiao, Futian District,Shenzhen City, China.

Standard   : FCC Part 15 Subpart C §15.247

Classification   : Bluetooth: Digital Transmission System (DTS)

TX/RX Frequency Range   Bluetooth (2400 MHz ~ 2483.5 MHz)

Test Result   : Complied

The Test Results relate only to the samples tested.
The test report shall not be reproduced except in full without the written approval of
IAC regulatory Laboratory

Documented By   :   APR. 05.2012
                              Kelly Lin/Engineer
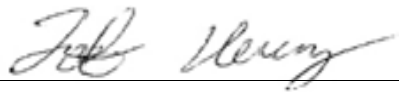
Tested By   :   APR. 05.2012
                              Byran Hung/Senior Engineer

Approved By   :   APR. 05.2012
                              Jeff Huang/Director of Operations

TABLE OF CONTENTS

Description   Page

SUMMARY OF TEST RESULT

Report Section	FCC Rule	IC Rule	Description	Limit	Result	Remark
4.1	15.247(a)(1)	A8.4(2)	Number of Channels	≥ 15Chs	Pass	-
4.2	15.247(a)(1)	A8.1(a)	20dB Bandwidth	NA	Pass	-
4.2	-	Gen 4.4.1	99% Bandwidth	-	Pass	-
4.3	15.247(a)(1)	A8.1(b)	Channel Separation	≥ 2/3 of 20dB BW	Pass	-
4.4	15.247(a)(1)	A8.1(d)	Dwell Time of Each Channel	≤ 0.4sec in 31.6sec period	Pass	-
4.5	15.247(b)(1)	A8.1(b)	Peak Output Power	≤ 1W	Pass	-
4.6	15.247(d)	A8.5	Frequency Band Edges	≤ 20dBc	Pass	-
4.7	15.247(d)	A8.5	Spurious Emission	< 20 dBc	Pass	-
4.8	15.207	Gen 7.2.2	AC Conducted Emission	Section 15.207(a)	Pass	-
4.9	15.247(d)	A8.5	Radiated Emission	FCC 47 CFR Part 15 Subpart C/ Section 15.209(a) &15.247(d)	Pass	-
4.10	15.203 &15.247(b)	A8.4	Antenna Requirement	N/A	Pass	-

1. GENERAL INFORMATION

1.1 Applicant

Company Name: JZH-Mobile Communication technology Co., LTD

Address: 1302,A block, Haisong Building, Chegongmiao, Futian District,Shenzhen City, China.

1.2 Manufacturer

Company Name: JZH-Mobile Communication technology Co., LTD

Address: 1302,A block, Haisong Building, Chegongmiao, Futian District,Shenzhen City, China.

1.3 Feature of Equipment Under Test

Product Feature & Specification	
Equipment	GSM MOBILE PHONE
Brand Name	L700
Model Name	JZH-Mobile
FCC ID	FOCGC661838
Tx/Rx Frequency Range	Bluetooth (2400 MHz ~ 2483.5 MHz)
Number of Channels	BT : CH00 CH39 CH78
Carrier Frequency of Each Channel	BT : 2402MHz 2441MHz 2480MHz
Channel Spacing	BT : 1MHz
Maximum Output Power to Antenna	BT : 11.13 (dBm)
Antenna Type	Monopole Antenna
HW Version	B085-MB-V0.1
SW Version	B085-1D-ENTEL _L97 _V114
Type of Modulation	BT(1Mbps):GFSK BT EDR(2Mbps):π /4-DQPSK BT EDR(3Mbps):8-DPSK

Remark:

1. For other wireless features of this EUT, test report will be issued separately.

2. This test report recorded only product characteristics and test results of Digital Transmission System (DTS)

3. The above EUT's information was declared by manufacturer. Please refer to the specifications or

   user's manual for more detailed description

1.4 Applied Standards

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

- FCC Part 15 Subpart C §15.247
- FCC Public Notice DA 00-705
- ANSI C63.4-2003

Remark:

1. All test items were verified and recorded according to the standards and without any deviationduring the test.
2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B,recorded in a separate test report.

2.   Test Configuration of Equipment Under Test

2.1 RF Power

Preliminary tests were performed in different data rate and recorded the RF Output Power in the following table:

Channel	Frequency	Bluetooth RF Output Power (dBm)		
		Data Rate / Modulation		
		GFSK	π /4-DQPSK	8-DPSK
		1Mbps	2Mbps	3Mbps
Ch00	2402MHz	11.13	11.11	11.10
Ch39	2441MHz	10.63	10.64	10.66
Ch78	2480MHz	9.56	9.56	9.57

Remark:

The EUT is programmed to transmit signal continuously for all testing.

2.2 Test Modes

The EUT has been associated with peripherals pursuant to ANSI C63.4-2003 and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: conducted emission (150 kHz to 30 MHz), radiated emission (30MHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower).

Pre-scanned tests were conducted to determine the final configuration from all possible combinations. The following tables are showing the test modes as the worst cases and recorded in this report.

| Test Cases			
Test Item	**Data Rate / Modulation**		
	Bluetooth 1Mbps GFSK	**Bluetooth EDR 2Mbps π /4-DQPSK**	**Bluetooth EDR 3Mbps 8-DPSK**
Conducted TCs	Mode 1: CH00_2402 MHz Mode 2: CH39_2441 MHz Mode 3: CH78_2480 MHz	Mode 4: CH00_2402 MHz Mode 5: CH39_2441 MHz Mode 6: CH78_2480 MHz	Mode 7: CH00_2402 MHz Mode 8: CH39_2441 MHz Mode 9: CH78_2480 MHz
Radiated TCs	N/A	N/A	Mode 1: CH00_2402 MHz + Battery Mode 2: CH39_2441 MHz + Battery Mode 3: CH78_2480 MHz + Battery
AC Conducted Emission	Mode 1 : GSM 850 Idle + Bluetooth Link + Adapter + Battery + Earphone Mode 2 : GSM 1900 Idle + Bluetooth Link +Adapter + Battery + Earphone		

2.3 Connection Diagram of Test System

30MHz~1GHz
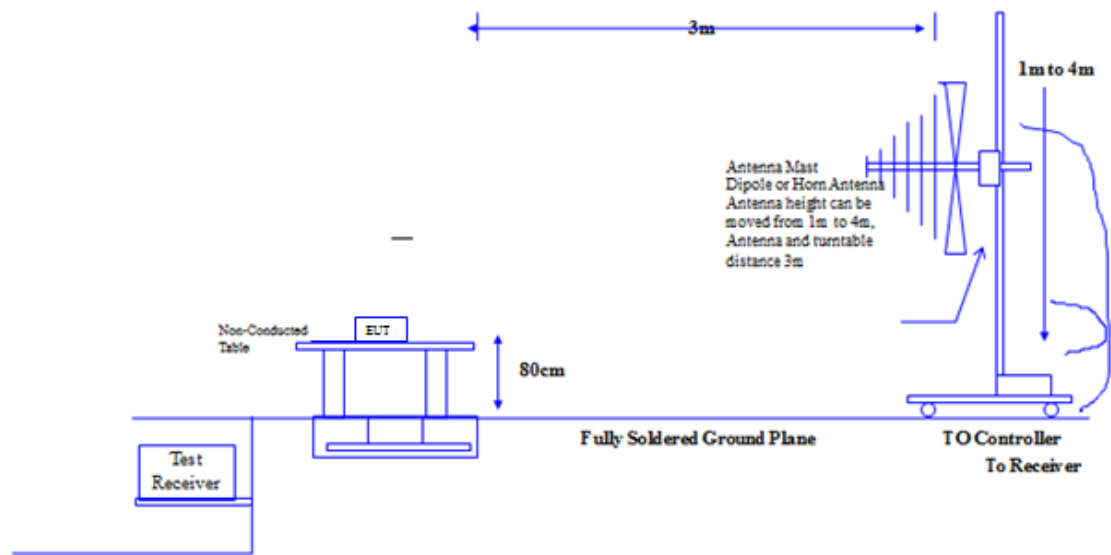
Above 1GHz

<Conduction Test>
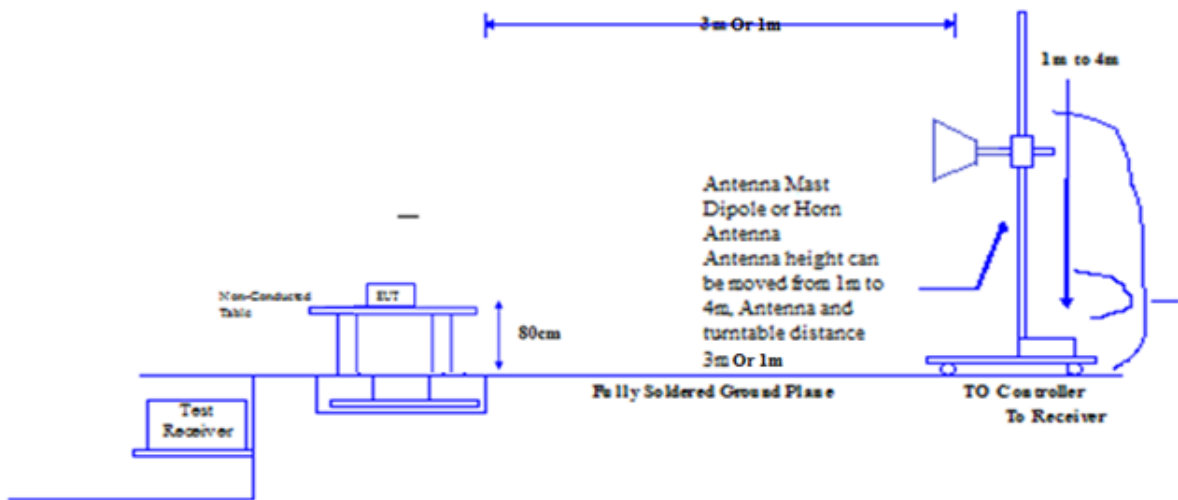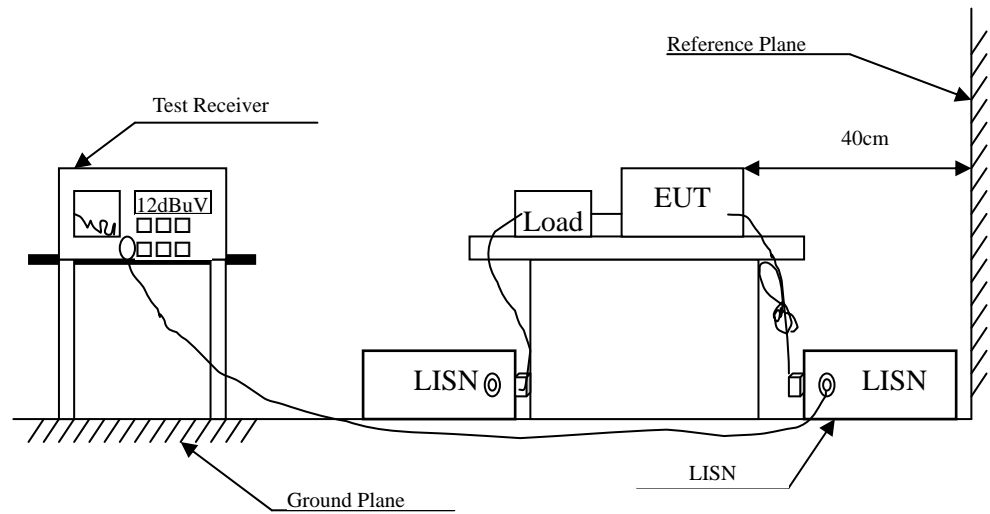
3.   Test Result

3.1 Number of Channel Measurement

3.1.1   Limits of Number of Hopping Frequency

Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels.

3.1.2   Measuring Instruments

See list of measuring instruments of this test report.

3.1.3   Test Procedures

1. The testing follows FCC Public Notice DA 00-705 Measurement Guidelines.

2. The RF output of EUT was connected to the spectrum analyzer by a low loss cable.

3. The modulation types of EUT are irrelevant to number of hopping channels deviation.

4. The EUT must have its hopping function enabled. Use the following spectrum analyzer settings:
   Span = the frequency band of operation; RBW $\geq$ 1% of the span; VBW $\geq$ RBW; Sweep = auto;
   Detector function = peak; Trace = max hold.

5. The number of hopping frequency used is defined as the device has the numbers of total
   channel.

3.1.4   Test Setup
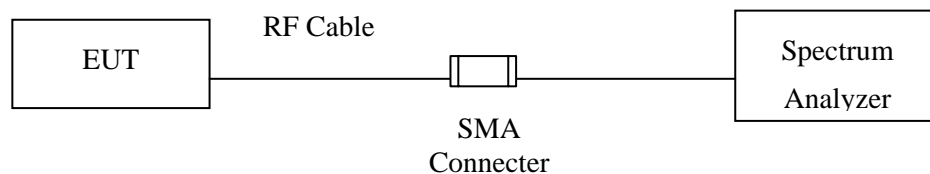
3.1.5   Test Result of Number of Hopping Frequency

Test Mode :	Mode 1~3	Temperature :	23℃~26℃
Test Engineer :	Hogan He	Relative Humidity :	40%~60%

Number of Hopping Channels (Channel)	Limits (Channel)	Pass/Fail
79	> 15	Pass

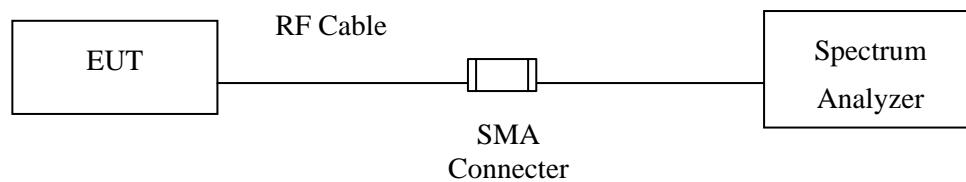**Number of Hopping Channel Plot on Channel 00 - 78**
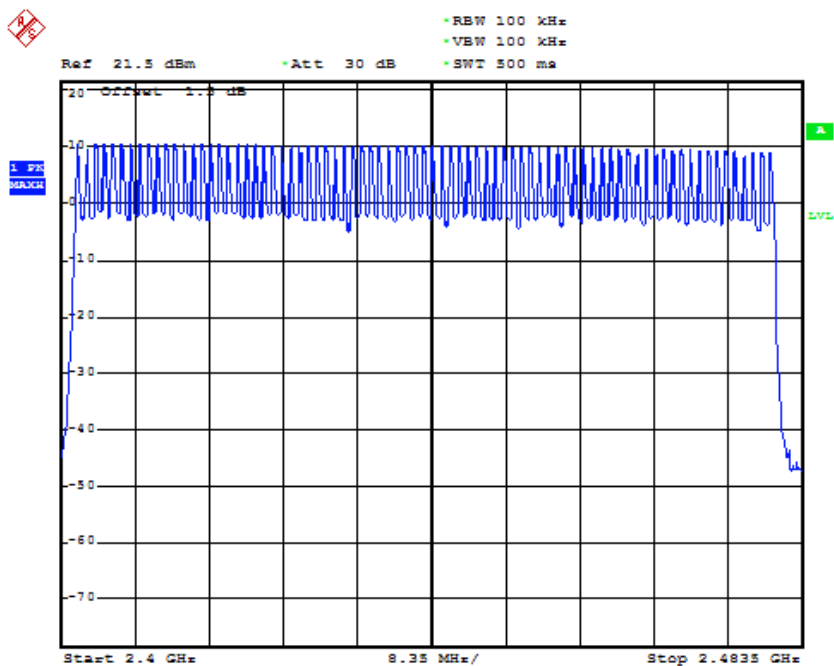
Date: 29.MAR.2012   02:26:32

Test Mode :	Mode 4~6	Temperature :	23℃~26℃
Test Engineer :	Hogan He	Relative Humidity :	40%~60%

Number of Hopping Channels (Channel)	Limits (Channel)	Pass/Fail
79	> 15	Pass

Number of Hopping Channel Plot on Channel 00 - 78
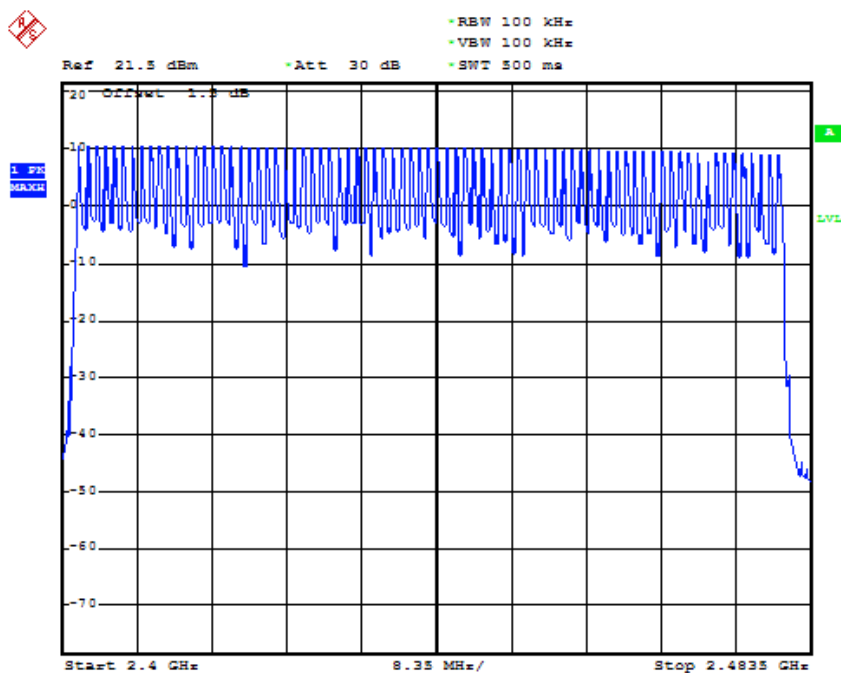
Date: 29.MAR.2012 02:39:21

Test Mode :	Mode 7~9	Temperature :	23℃~26℃
Test Engineer :	Hogan He	Relative Humidity :	40%~60%

Number of Hopping Channels (Channel)	Limits (Channel)	Pass/Fail
79	> 15	Pass

Number of Hopping Channel Plot on Channel 00 - 78
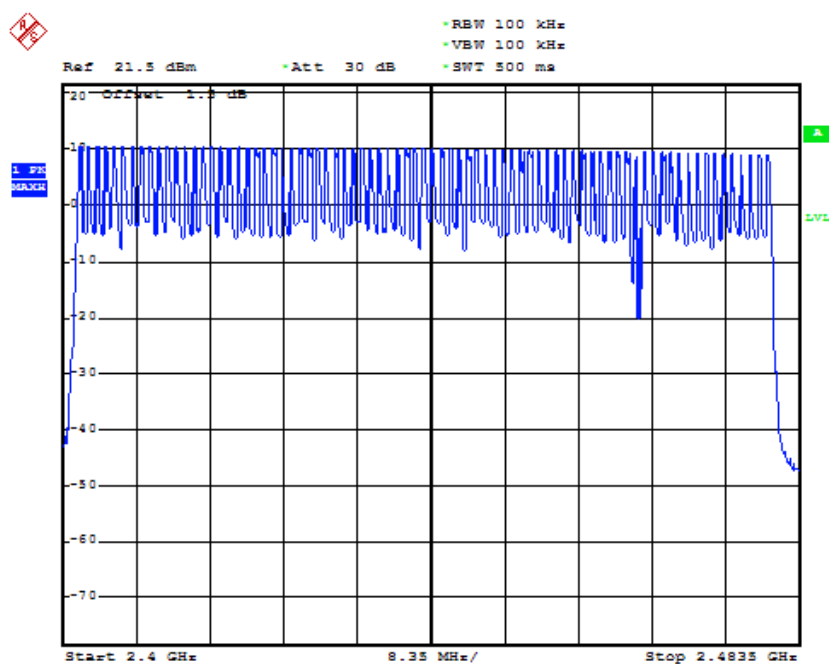
Date: 29.MAR.2012   03:06:53

3.2 20dB and 99% Bandwidth Measurement

3.2.1   Limit of 20dB Bandwidth

N/A

3.2.2   Measuring Instruments

See list of measuring instruments of this test report.

3.2.3   Test Procedures

1. The testing follows FCC Public Notice DA 00-705 Measurement Guidelines.
2. The RF output of EUT was connected to the spectrum analyzer by a low loss cable.
3. The EUT should be transmitting at its maximum data rate as the worst cases.
4. Use the following spectrum analyzer settings:

   Span = approximately 2 to 3 times the 20 dB bandwidth, centered on a hopping channel;

   RBW $\geq$ 1% of the 20 dB bandwidth; VBW $\geq$ RBW; Sweep = auto; Detector function = peak;

   Trace = max hold.
5. The marker-delta reading at this point is the 20 dB bandwidth of the emission.

3.2.4   Test Setup

3.2.5   Test Result of 20dB Bandwidth

Test Mode :	Mode 1,2,3	Temperature :	23℃~26℃
Test Engineer :	Hogan He	Relative Humidity :	40%~60%

Channel	Frequency (MHz)	20dB Bandwidth (MHz)
00	2402	0.756
39	2441	0.756
78	2480	0.756

20 dB Bandwidth Plot on Channel 00
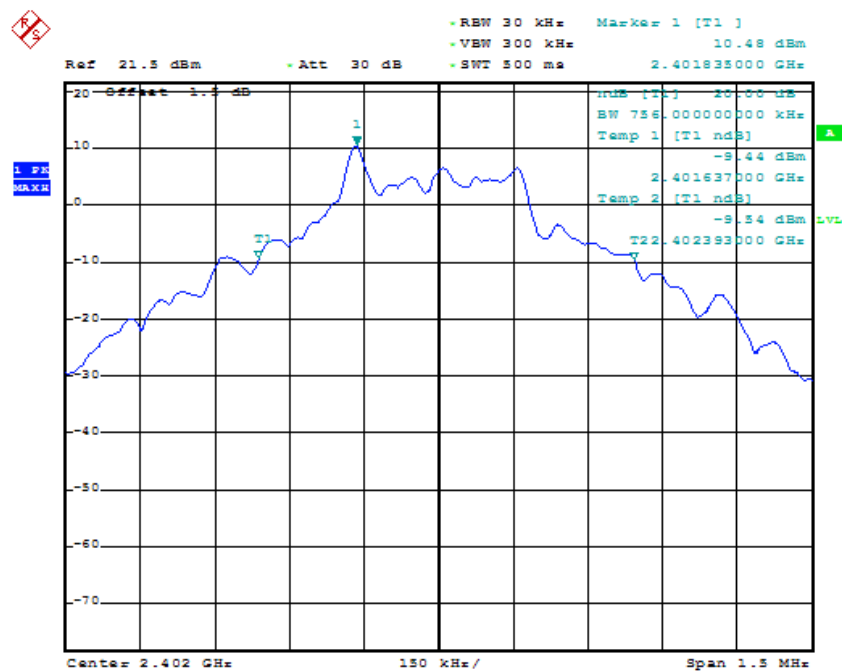
Date: 29.MAR.2012   03:34:15

20 dB Bandwidth Plot on Channel 39
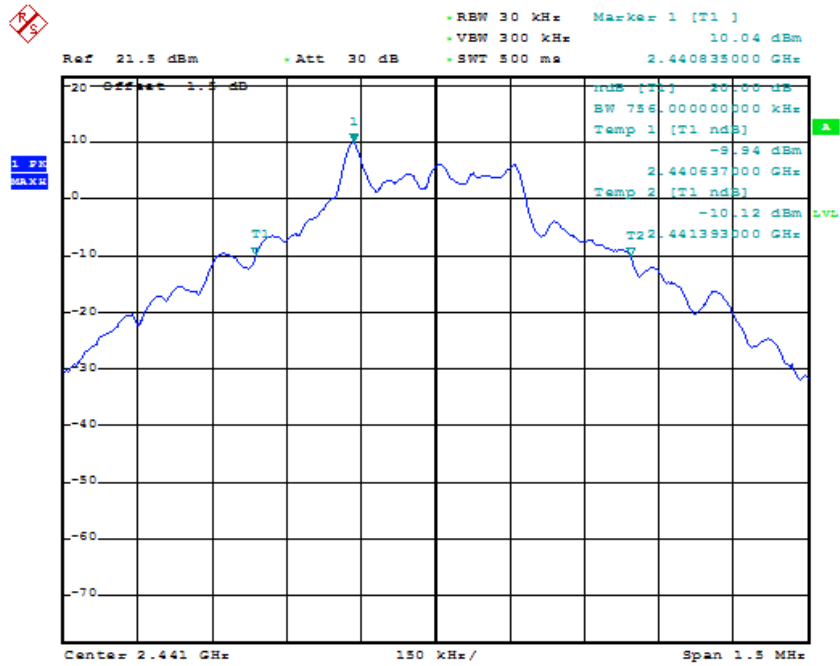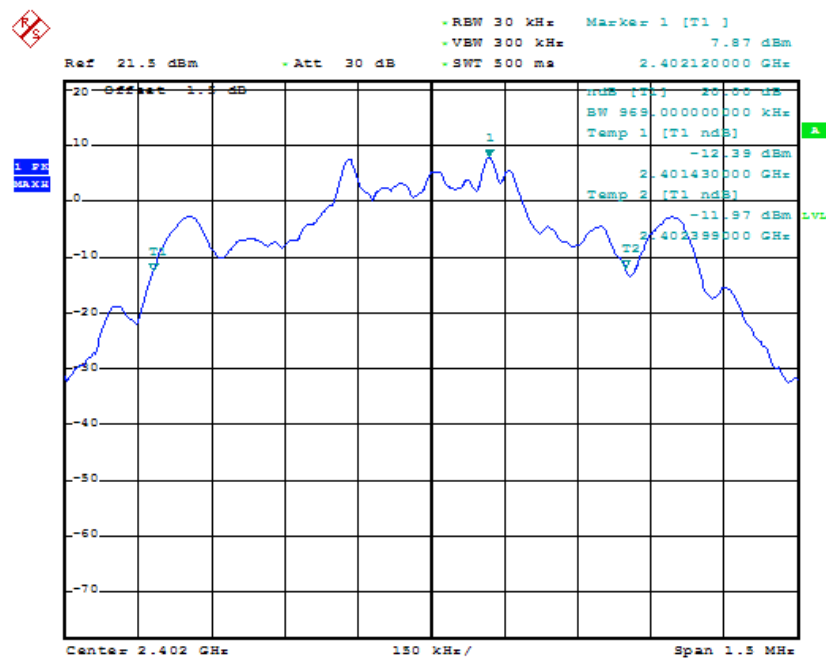

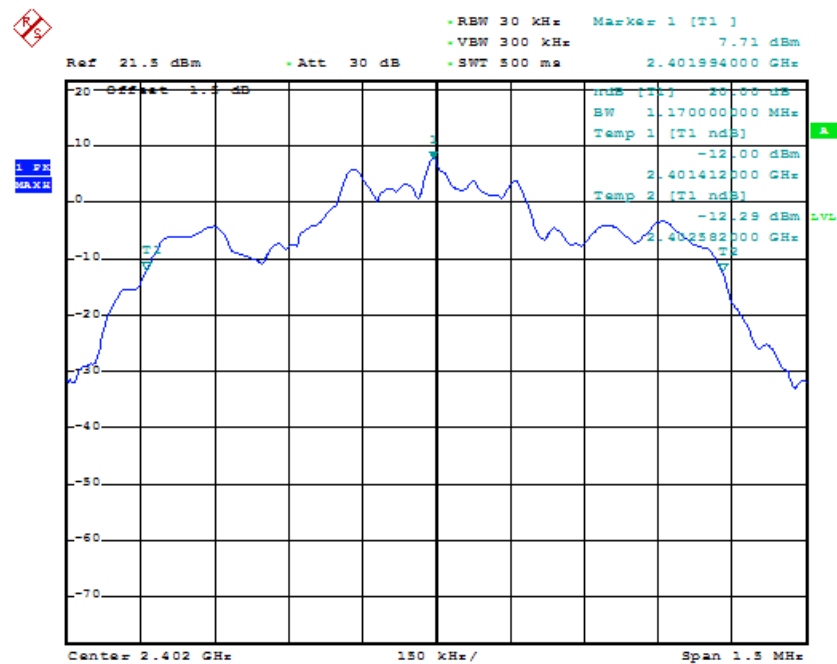Date: 29.MAR.2012   03:35:18

20 dB Bandwidth Plot on Channel 78
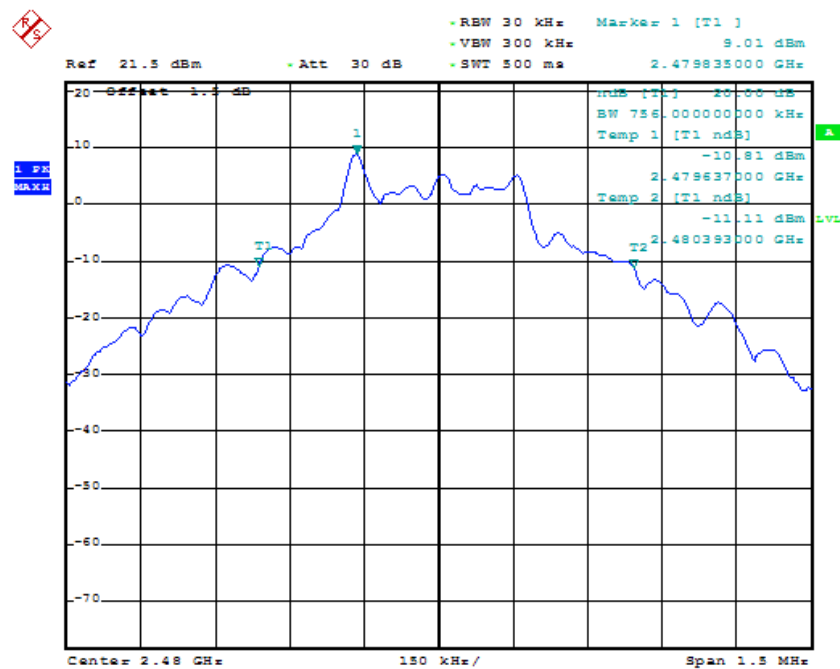
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Test Mode :	Mode 4,5,6	Temperature :	23℃~26℃
Test Engineer :	Hogan He	Relative Humidity :	40%~60%

Channel	Frequency (MHz)	20dB Bandwidth (MHz)
00	2402	0.969
39	2441	0.972
78	2480	1.125

20 dB Bandwidth Plot on Channel 00
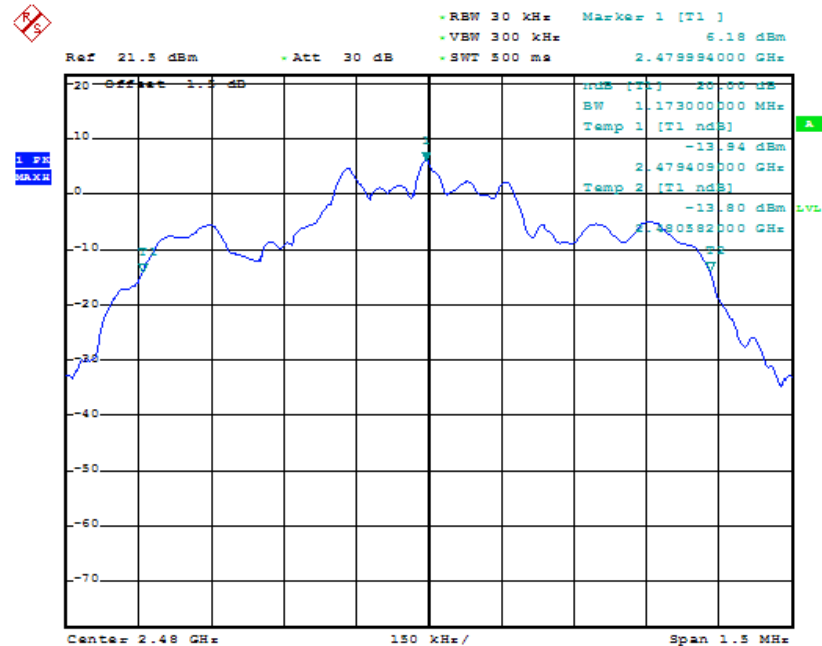

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20 dB Bandwidth Plot on Channel 39
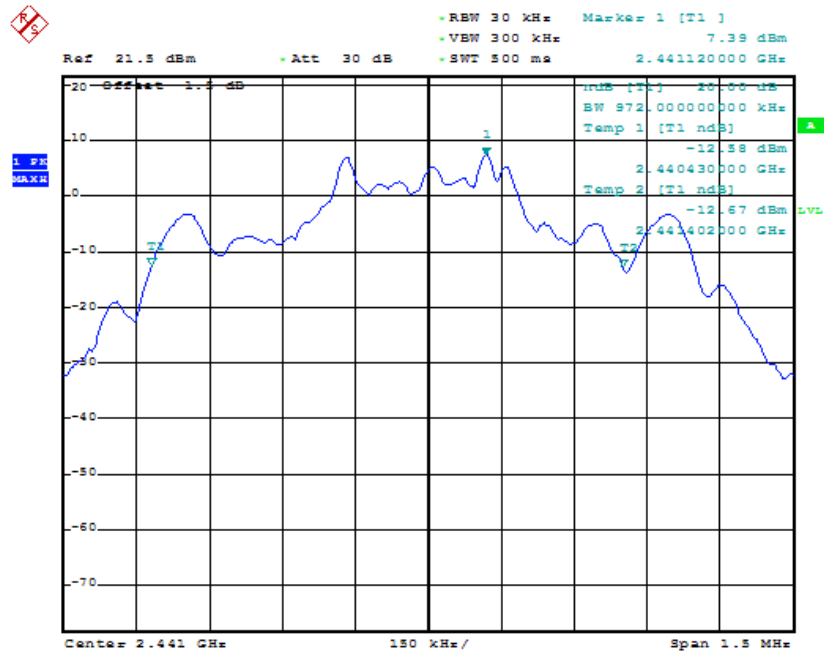
Date: 12.MAR.2012   03:41:56

20 dB Bandwidth Plot on Channel 78
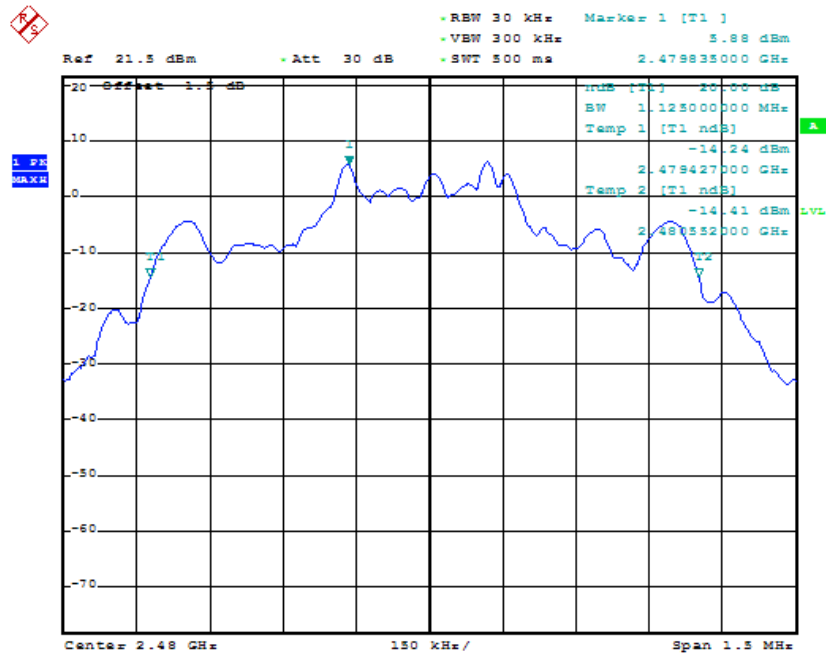
Date: 29.MAR.2012   03:40:45

Test Mode :	Mode 7,8,9	Temperature :	23℃~26℃
Test Engineer :	Hogan He	Relative Humidity :	40%~60%

Channel	Frequency (MHz)	20dB Bandwidth (MHz)
00	2402	1.170
39	2441	1.173
78	2480	1.173

20 dB Bandwidth Plot on Channel 00

Date: 29.MAR.2012   03:43:25

20 dB Bandwidth Plot on Channel 39
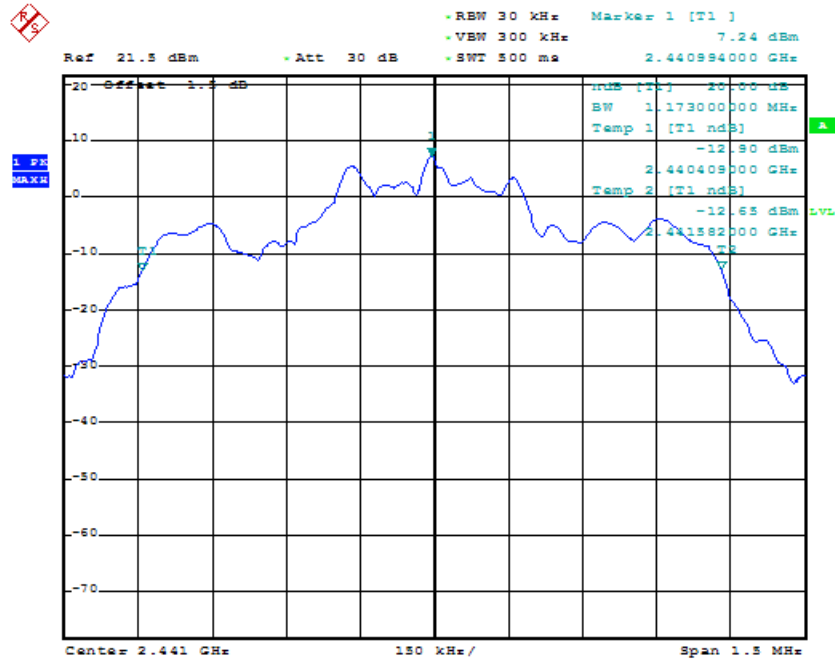
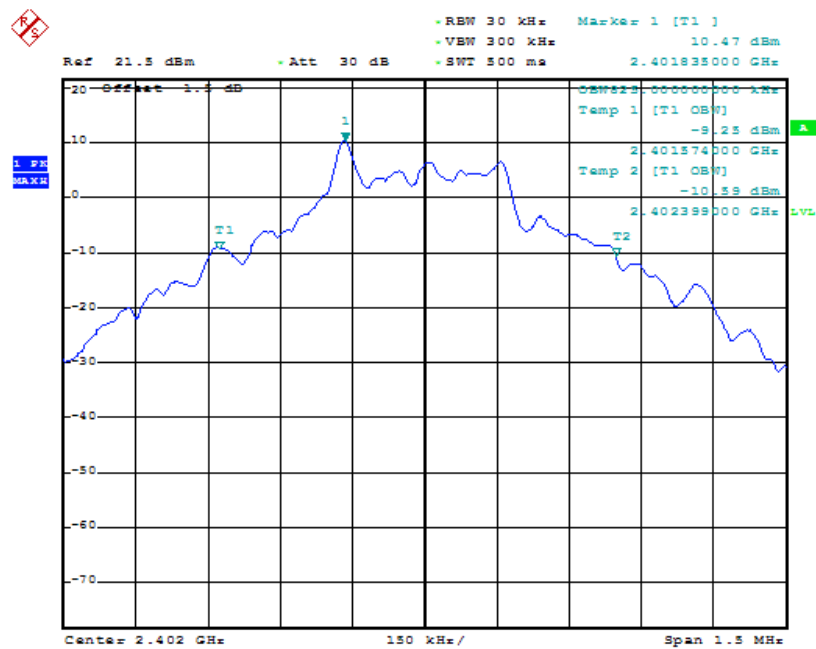Date: 29.MAR.2012   03:50:47

20 dB Bandwidth Plot on Channel 78

Date: 29.MAR.2012   03:51:41

3.2.6 Test Result of 99% Occupied Bandwidth

Test Mode :	Mode 1,2,3	Temperature :	23℃~26℃
Test Engineer :	Hogan He	Relative Humidity :	40%~60%

Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
00	2402	0.825
39	2441	0.825
78	2480	0.825

99% Bandwidth Plot on Channel 00

Date: 29.MAR.2012 03:59:48

99% Occupied Bandwidth Plot on Channel 39
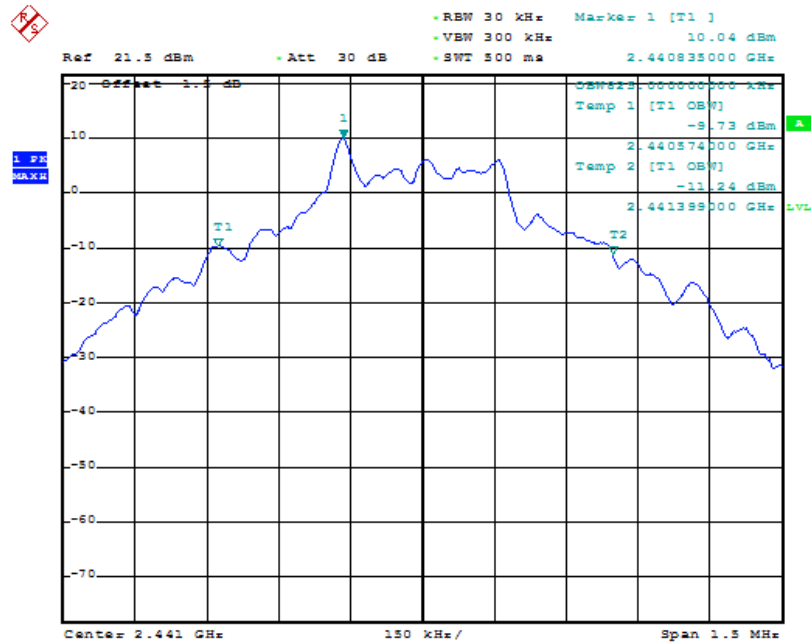
Date: 29.MAR.2012   03:58:56
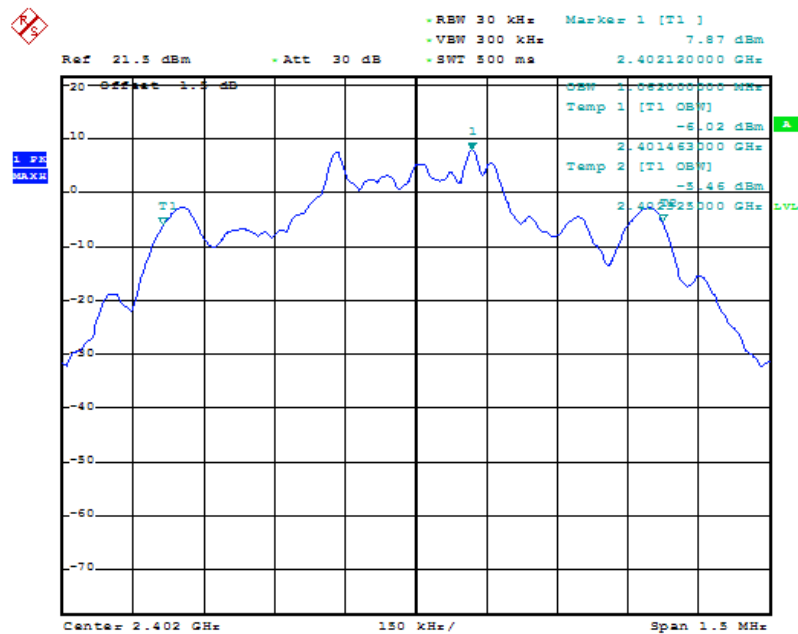
99% Occupied Bandwidth Plot on Channel 78
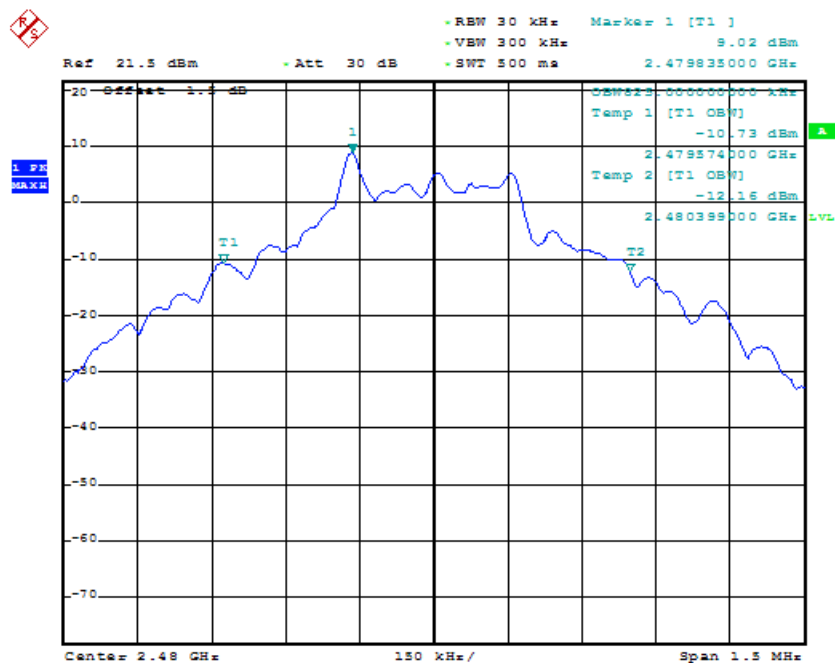
Date: 29.MAR.2012   03:58:21

Test Mode :	Mode 4,5,6	Temperature :	23℃~26℃
Test Engineer :	Hogan He	Relative Humidity :	40%~60%

Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
00	2402	1. 062
39	2441	1. 062
78	2480	1. 062

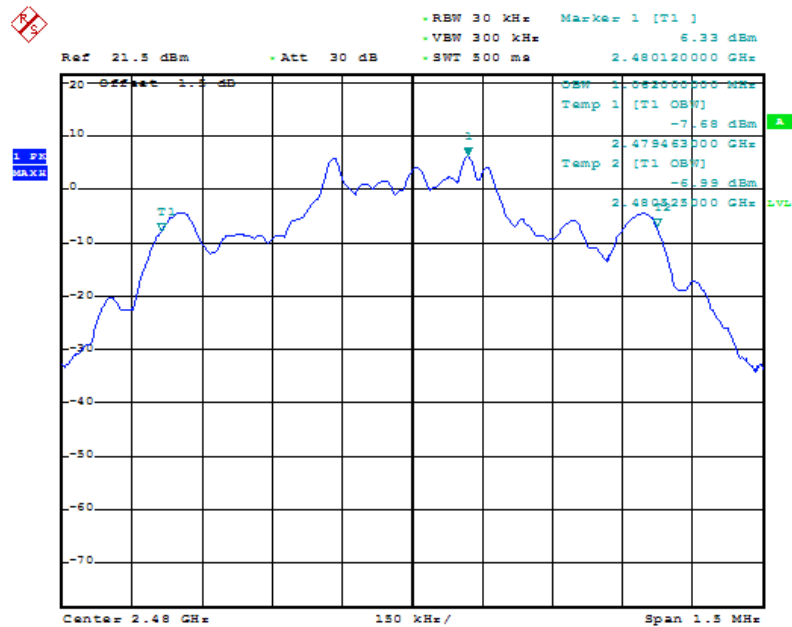### 99% Bandwidth Plot on Channel 00

Date: 29.MAR.2012 03:55:21

99% Occupied Bandwidth Plot on Channel 39
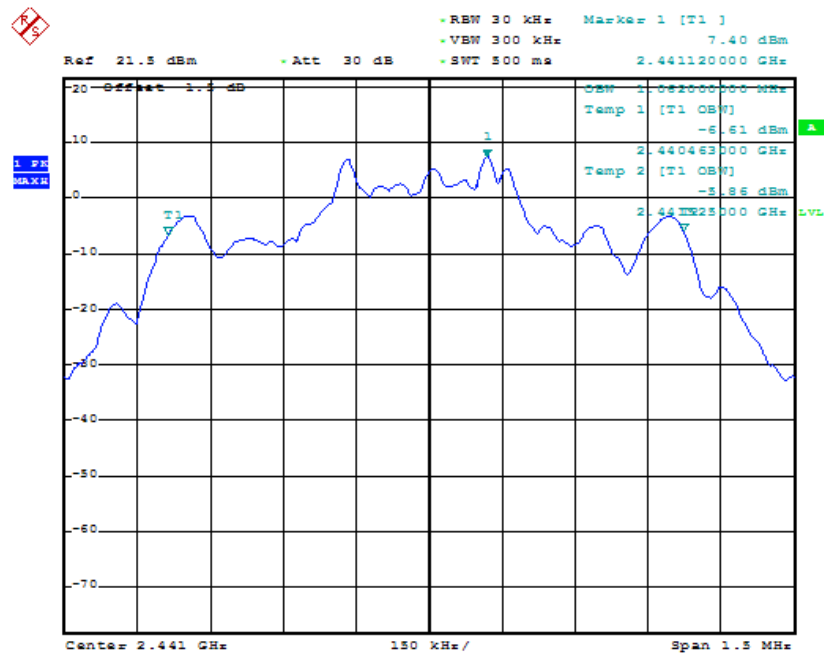
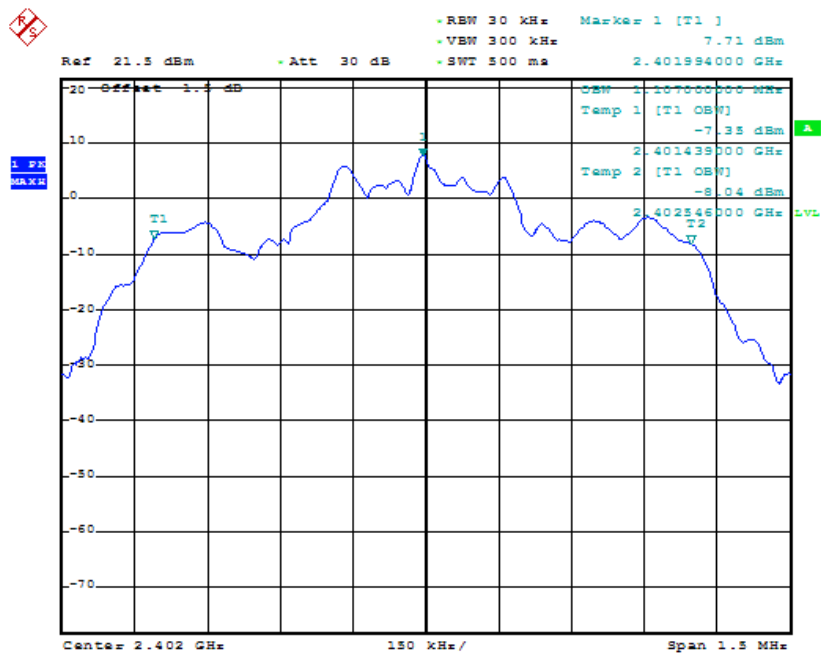Date: 29.MAR.2012 03:55:57

99% Occupied Bandwidth Plot on Channel 78

Date: 29.MAR.2012 03:56:46

Test Mode :	Mode 7,8,9	Temperature :	23℃~26℃
Test Engineer :	Hogan He	Relative Humidity :	40%~60%

Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
00	2402	1.107
39	2441	1.107
78	2480	1.107

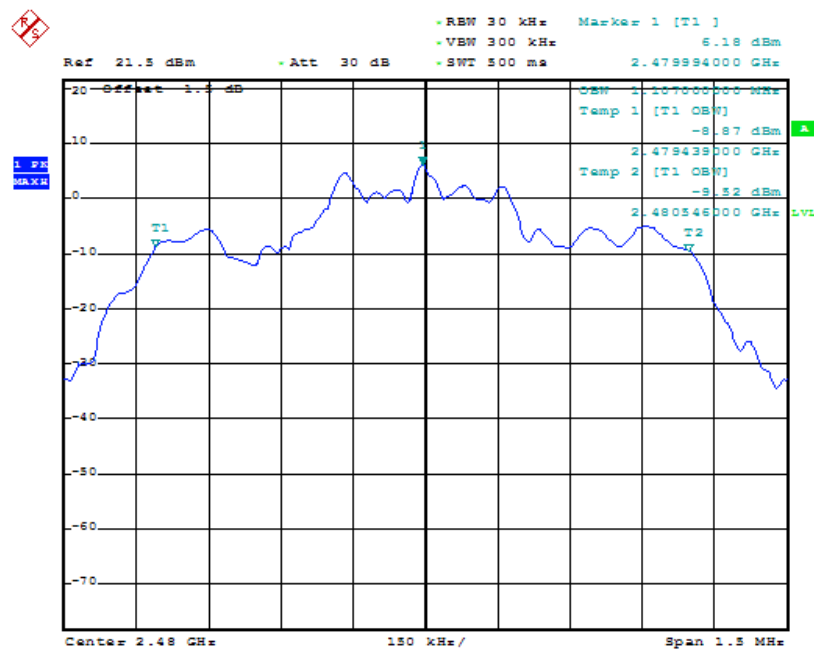**99% Bandwidth Plot on Channel 00**

Date: 29.MAR.2012 03:54:35

99% Occupied Bandwidth Plot on Channel 39
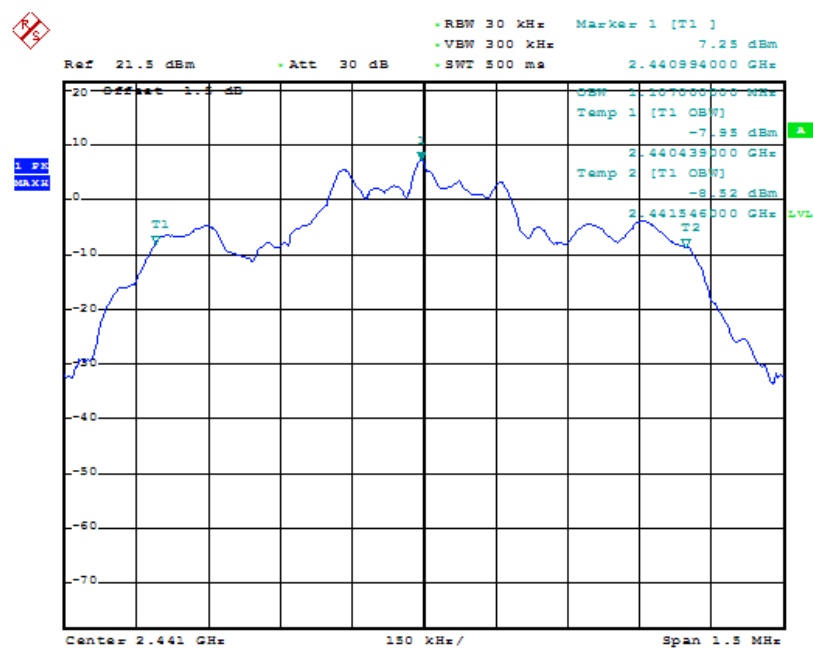
Date: 29.MAR.2012   03:53:59

99% Occupied Bandwidth Plot on Channel 78

Date: 29.MAR.2012   03:53:23

3.3 Hopping Channel Separation Measurement

3.3.1 Limit of Hopping Channel Separation

Frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater.

3.3.2 Measuring Instruments

See list of measuring instruments of this test report.

3.3.3 Test Procedures

1. Please refer FCC Public Notice DA 00-705 Measurement Guidelines.

2. The RF output of EUT was connected to the spectrum analyzer by a low loss cable.

3. The EUT should be transmitting at its maximum data rate as the worst cases.

4. Use the following spectrum analyzer settings:

Span = wide enough to capture the peaks of two adjacent channels; RBW $\geq$ 1% of the span;

VBW $\geq$ RBW; Sweep = auto; Detector function = peak; Trace = max hold.

5. Use the marker-delta function to determine the separation between the peaks of the adjacent channels.

3.3.4 Test Setup

EUT — RF Cable — SMA Connecter — Spectrum Analyzer
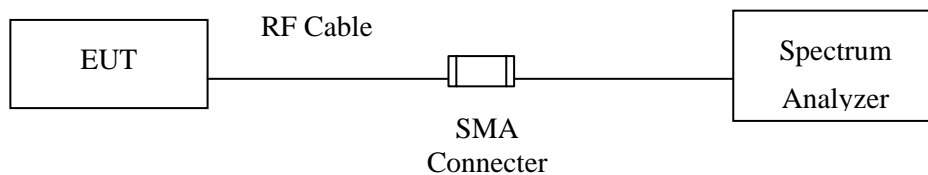
3.3.5 Test Result of Hopping Channel Separation

Test Mode :	Mode 1,2,3	Temperature :	23℃~26℃
Test Engineer :	Hogan He	Relative Humidity :	40%~60%

Channel	Frequency (MHz)	Frequency Separation (MHz)	(2/3 of 20dB BW) Limits (MHz)	Pass/Fail
00	2402	1.012	0.504	Pass
39	2441	1.000	0.504	Pass
78	2480	1.000	0.504	Pass

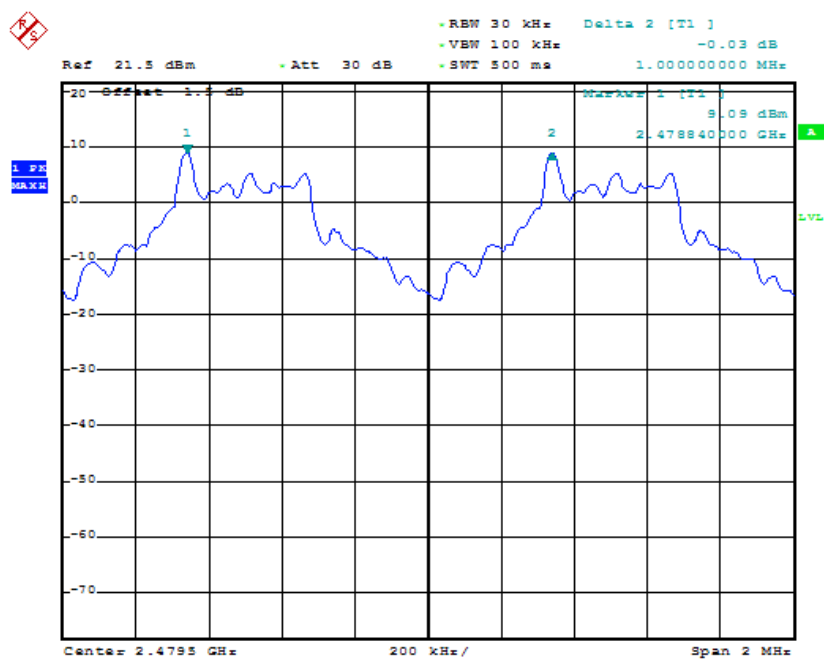**Channel Separation Plot on Channel 00 - 01**
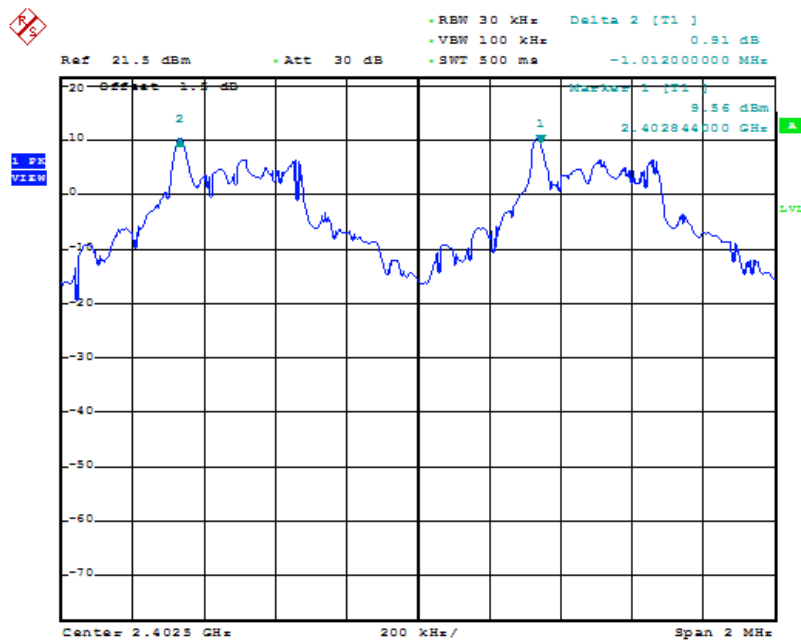
Date: 29.MAR.2012 04:19:25

Channel Separation Plot on Channel 39 - 40
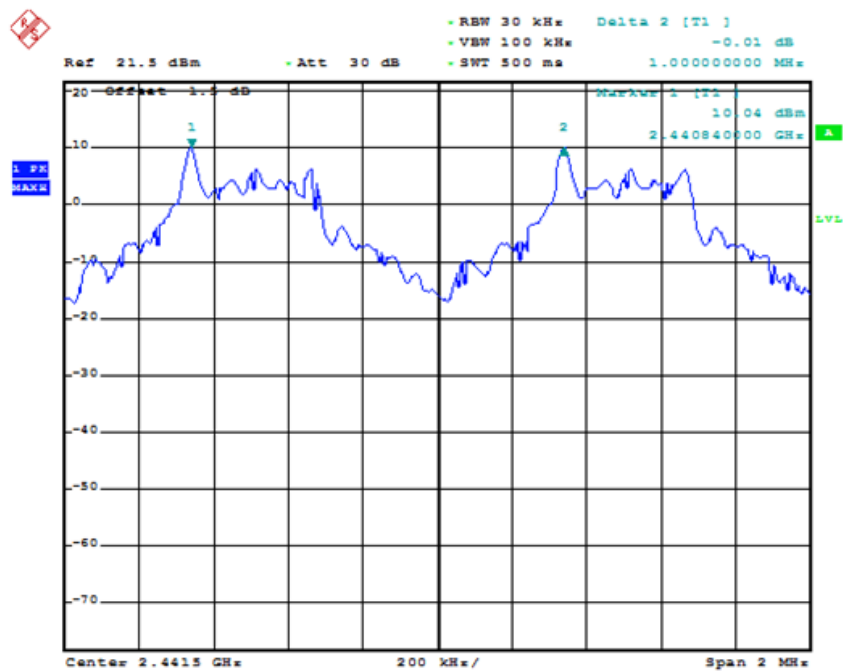
Date: 29.MAR.2012 04:26:48

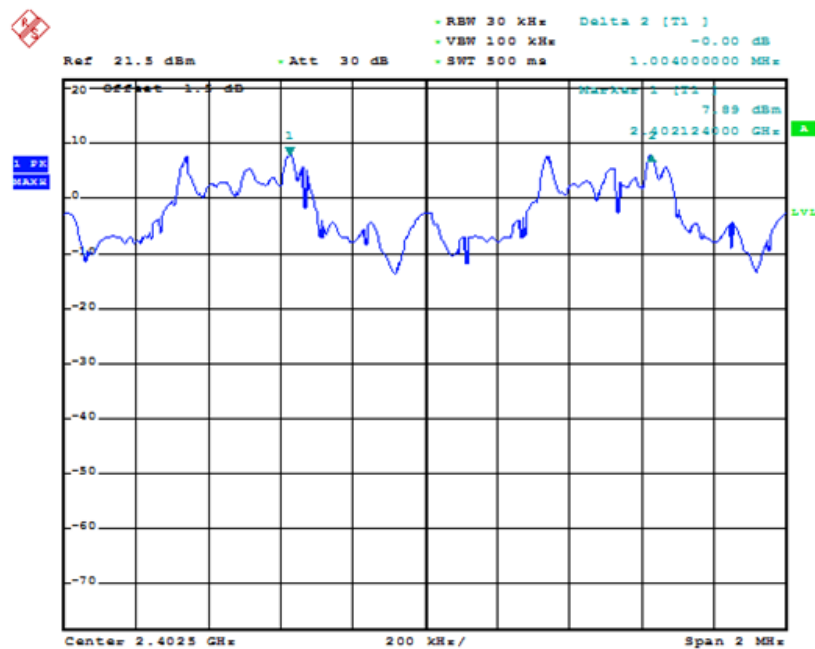**Channel Separation Plot on Channel 77 - 78**

Date: 29.MAR.2012 05:38:58

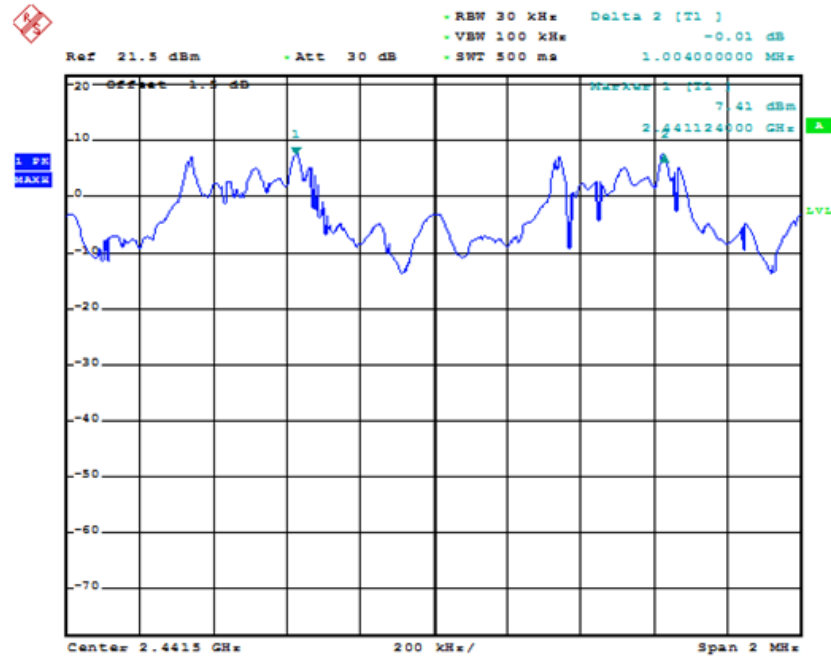| Test Mode : | Mode 4,5,6 | Temperature : | 23℃~26℃ |
| Test Engineer : | Hogan He | Relative Humidity : | 40%~60% |

Channel	Frequency (MHz)	Frequency Separation (MHz)	(2/3 of 20dB BW) Limits (MHz)	Pass/Fail
00	2402	1.004	0.646	Pass
39	2441	1.004	0.648	Pass
78	2480	1.004	0.750	Pass

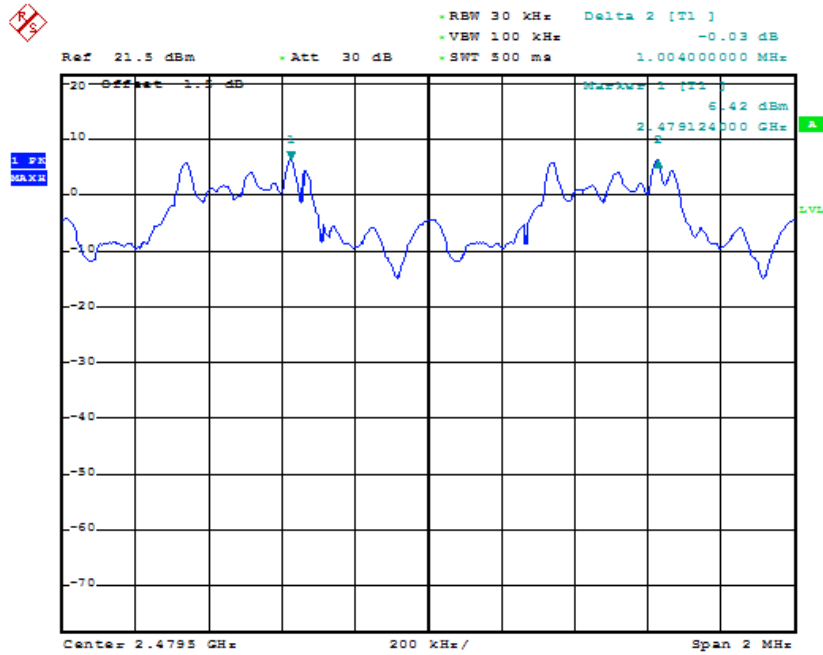**Channel Separation Plot on Channel 00 - 01**

Date: 29.MAR.2012 06:05:00

Channel Separation Plot on Channel 39 - 40

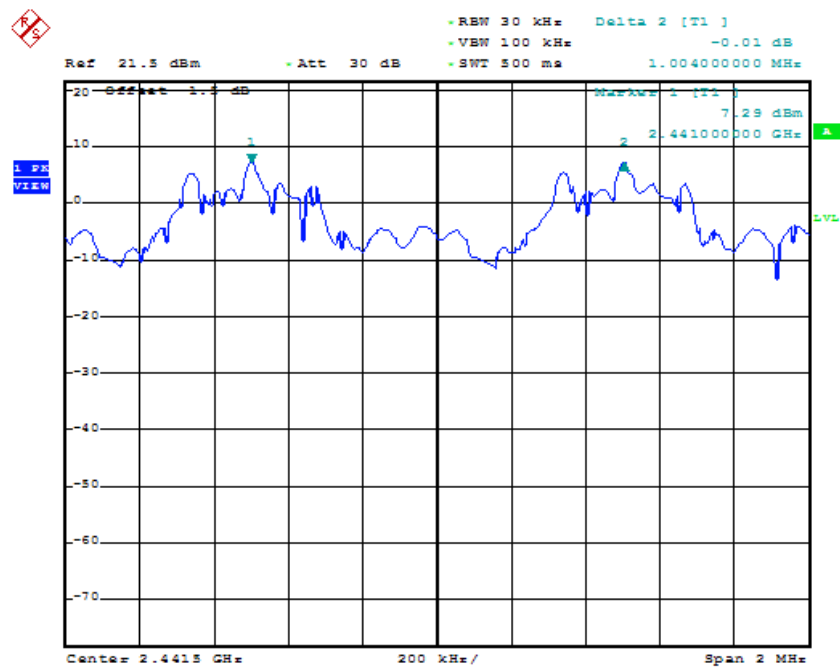Date: 29.MAR.2012 05:56:40

Channel Separation Plot on Channel 77 - 78

Date: 29.MAR.2012 05:48:13

Test Mode :	Mode 7,8,9	Temperature :	23℃~26℃
Test Engineer :	Hogan He	Relative Humidity :	40%~60%

Channel	Frequency (MHz)	Frequency Separation (MHz)	(2/3 of 20dB BW) Limits (MHz)	Pass/Fail
00	2402	1.004	0.780	Pass
39	2441	1.004	0.782	Pass
78	2480	1.000	0.782	Pass

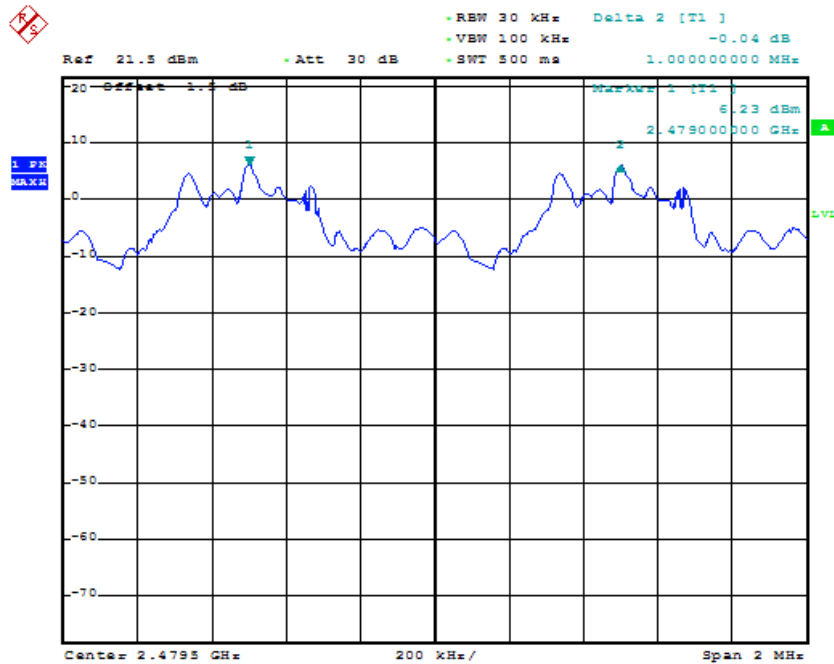**Channel Separation Plot on Channel 00 - 01**

Date: 29.MAR.2012 07:23:14

Channel Separation Plot on Channel 39 - 40
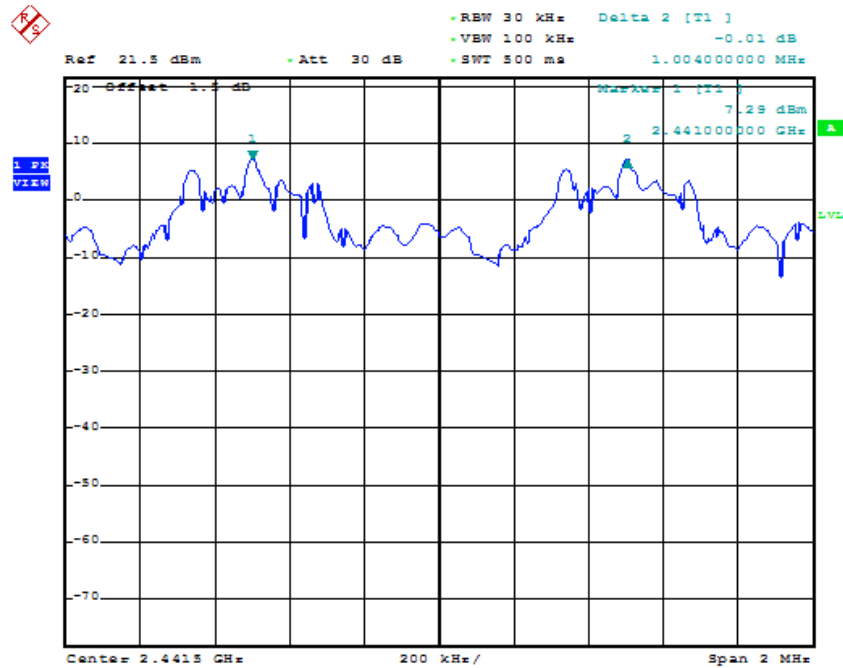
Date: 29.MAR.2012   07:23:14

Channel Separation Plot on Channel 77 - 78

Date: 29.MAR.2012   07:32:10

3.4 Dwell Time Measurement

3.4.1 Limit of Dwell Time

The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed.

3.4.2 Measuring Instruments

See list of measuring instruments of this test report.

3.4.3 Test Procedure

1. The testing follows FCC Public Notice DA 00-705 Measurement Guidelines.
2. The RF output of EUT was connected to the spectrum analyzer by a low loss cable.
3. The EUT should be transmitting at its maximum data rate as the worst cases.
4. The EUT must have its hopping function enabled. Use the following spectrum analyzer settings:
    Span = zero span, centered on a hopping channel; RBW = 1 MHz; VBW $\geq$ RBW; Sweep = as necessary to capture the entire dwell time per hopping channel; Detector function = peak; Trace = max hold.
5. Use the marker-delta function to calculate the dwell time.

3.4.4 Test Setup
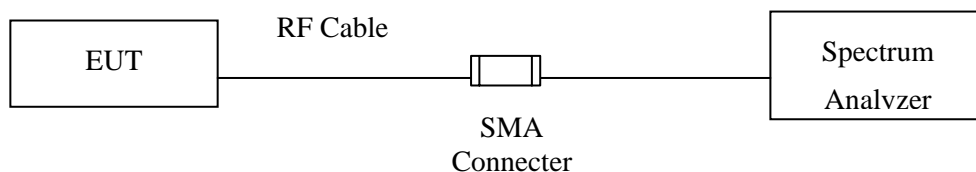
3.4.5 Test Result of Dwell Time

Test Mode :	Mode 2	Temperature :	23℃~26℃
Test Engineer :	Hogan He	Relative Humidity :	40%~60%

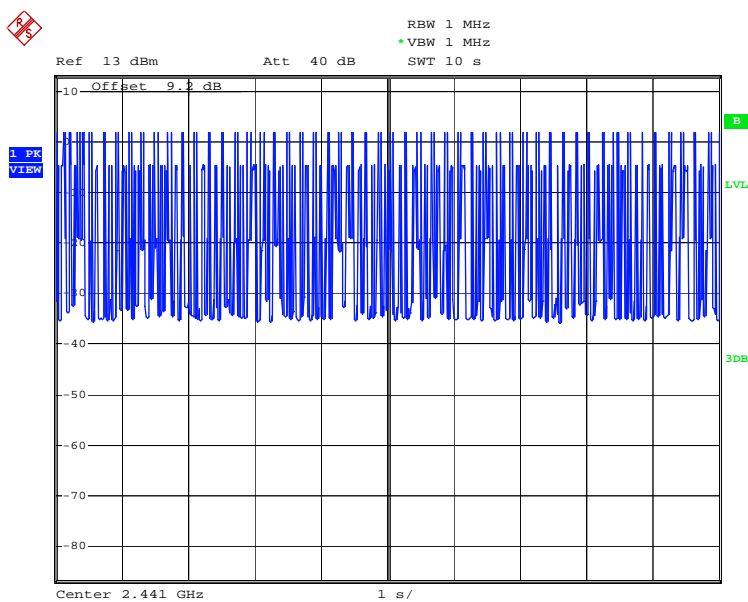| Package Mode	Average Hopping Channel	Package Transfer Time (usec)	Dwell Time (sec)	Limits (sec)	Pass/Fail
DH1	10.1	404	0.129	0.4	Pass
DH3	5.1	1684	0.269	0.4	Pass
DH5	3.4	2954	0.315	0.4	Pass

Remark:

1. Dwell Time=79(channels) x 0.4(s) x average hopping channel x package transfer time

2. 79 channels come from the Hopping Channel number.

3. Average Hopping Channel = hops/sweep time

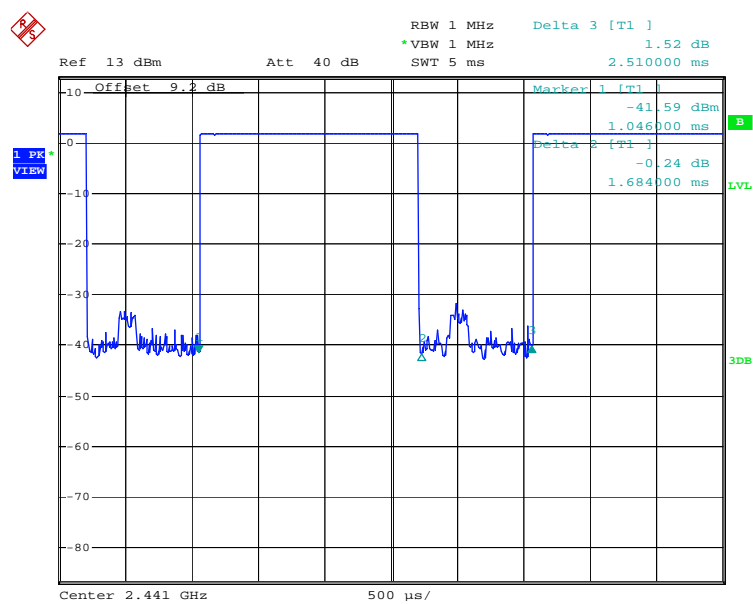4. t: Package Transfer Time(us)

GFSK：

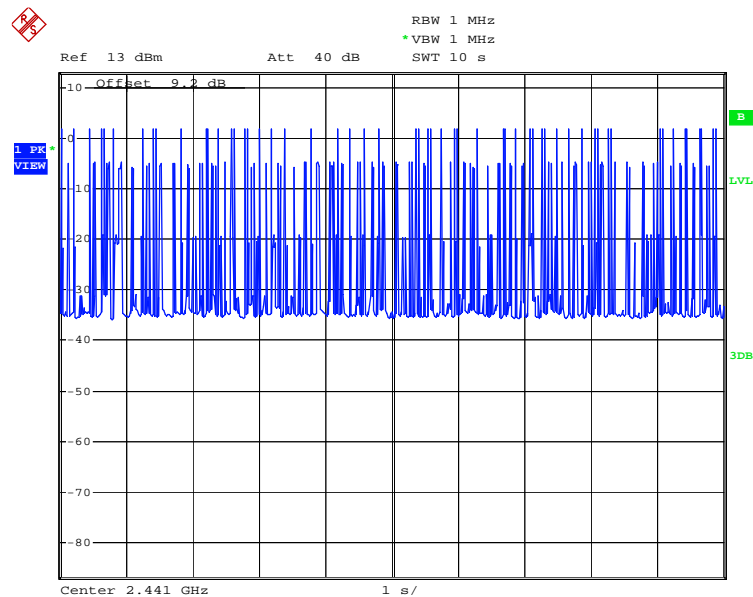## DH1 Dwell Time (One Pulse) Plot on Channel 39
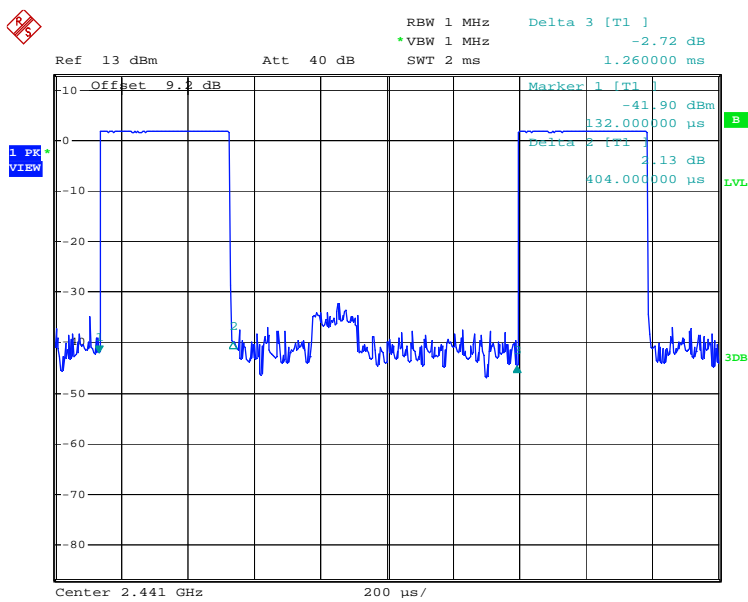
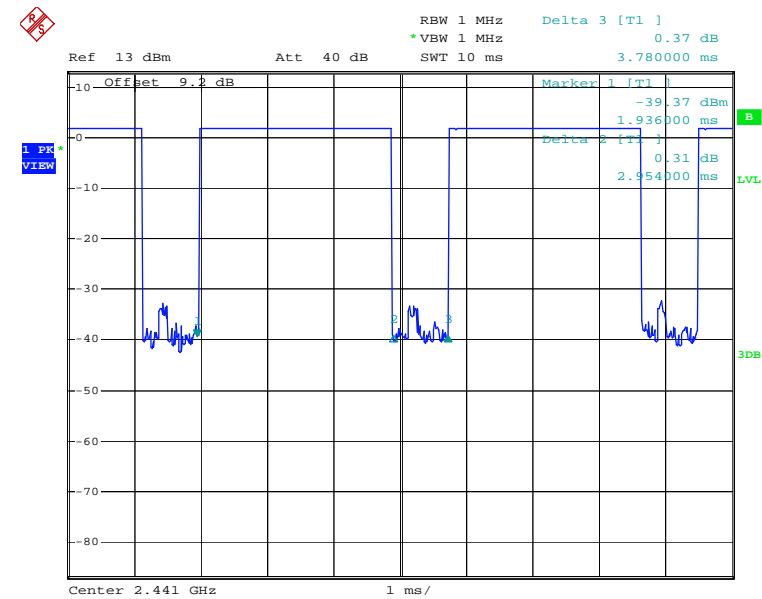## DH1 Dwell Time (Count Pulses) Plot on Channel 39
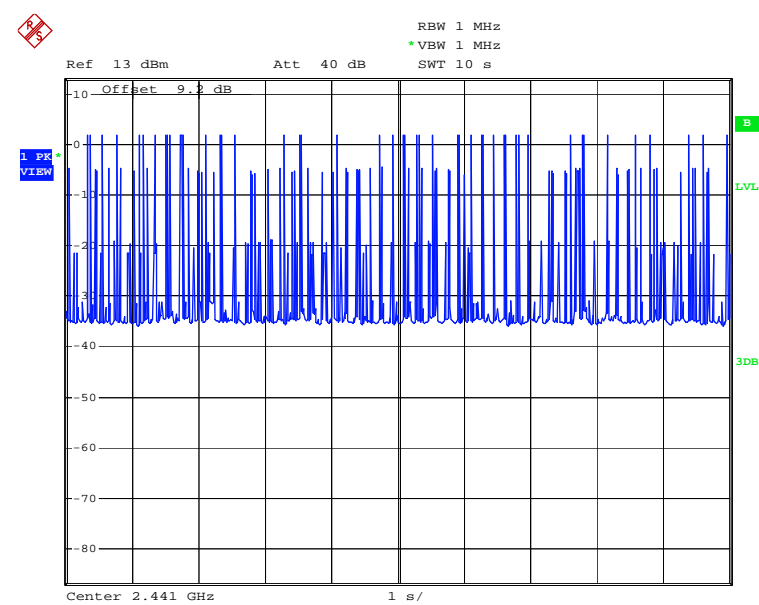
DH3 Dwell Time (One Pulse) Plot on Channel 39

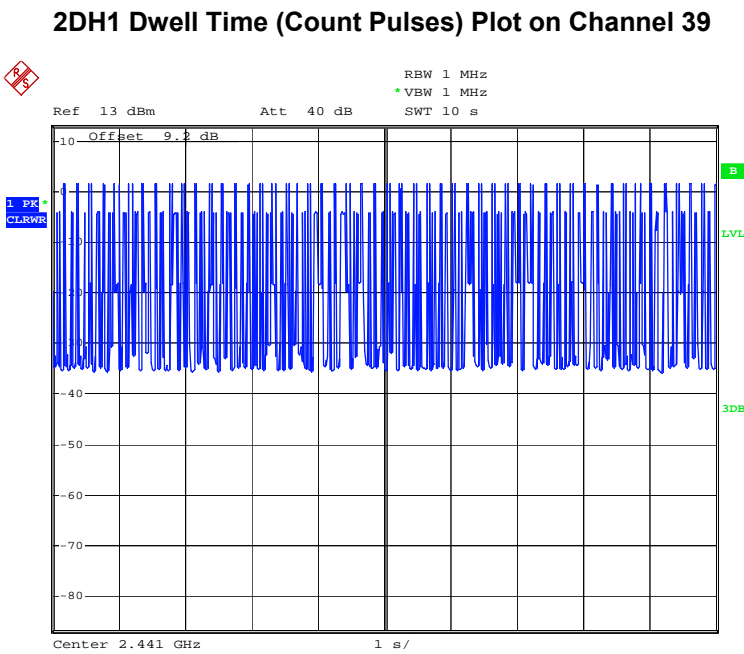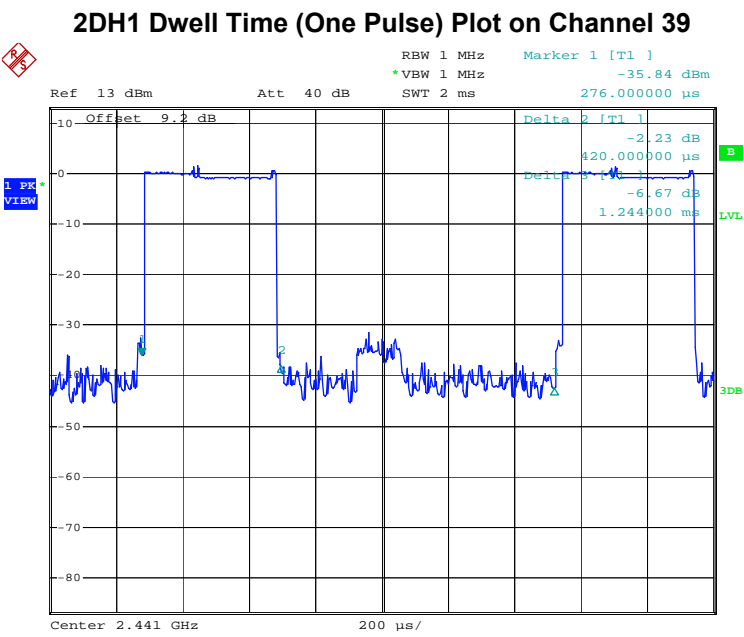## DH3 Dwell Time (Count Pulses) Plot on Channel 39

DH5 Dwell Time (One Pulse) Plot on Channel 39

```
                                      RBW 1 MHz    Delta 3 [T1 ]
                                    * VBW 1 MHz            0.37 dB
    Ref  13 dBm          Att  40 dB   SWT 10 ms       3.780000 ms
    -10  Offset  9.2 dB                         Marker 1 [T1 ]
                                                     -39.37 dBm
    -0                                               1.936000 ms    B
1 PK
VIEW                                         Delta 2 [T1 ]
    -10                                              0.31 dB       LVL
                                                     2.954000 ms

    -20

    -30

    -40                                                           3DB

    -50

    -60

    -70

    -80

    Center 2.441 GHz              1 ms/
```

DH5 Dwell Time (Count Pulses) Plot on Channel 39

```
                                      RBW 1 MHz
                                    * VBW 1 MHz
    Ref  13 dBm          Att  40 dB   SWT 10 s
    -10  Offset  9.2 dB

    -0                                                             B
1 PK
VIEW                                                              LVL
    -1

    -2

    -3

    -40                                                           3DB

    -50

    -60

    -70

    -80

    Center 2.441 GHz              1 s/
```

Test Mode :	Mode 5	Temperature :	23℃~26℃
Test Engineer :	Hogan He	Relative Humidity :	40%~60%

Package Mode	Average Hopping Channel	Package Transfer Time (usec)	Dwell Time (sec)	Limits (sec)	Pass/Fail
2DH1	10.1	420	0.134	0.4	Pass
2DH3	5.1	1704	0.273	0.4	Pass
2DH5	3.4	2974	0.317	0.4	Pass

Remark:

5. Dwell Time=79(channels) x 0.4(s) x average hopping channel x package transfer time

6. 79 channels come from the Hopping Channel number.

7. Average Hopping Channel = hops/sweep time
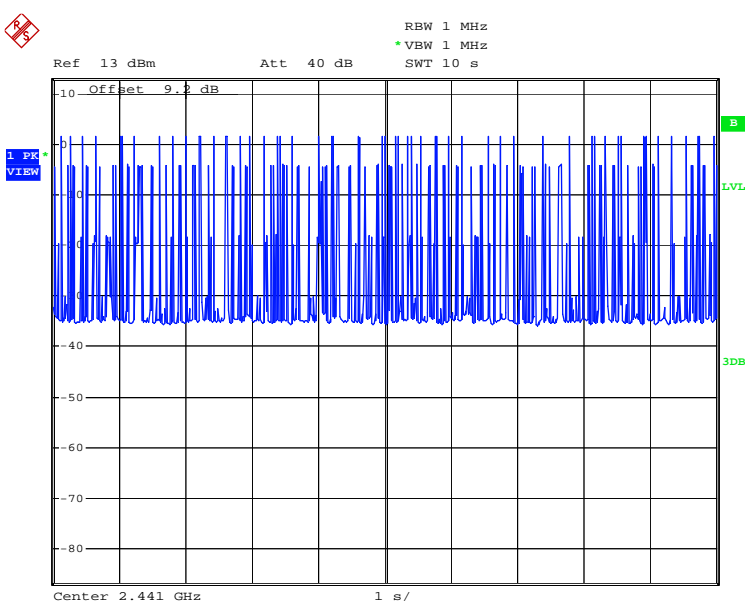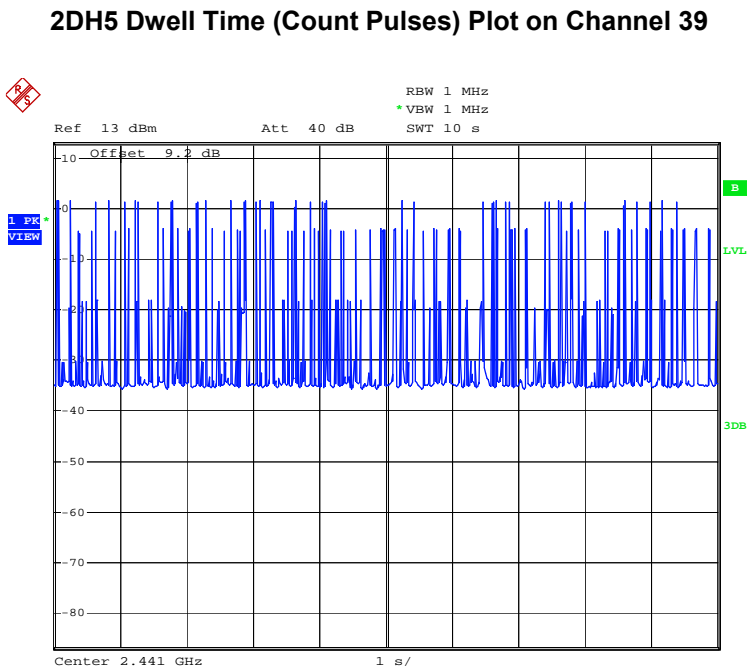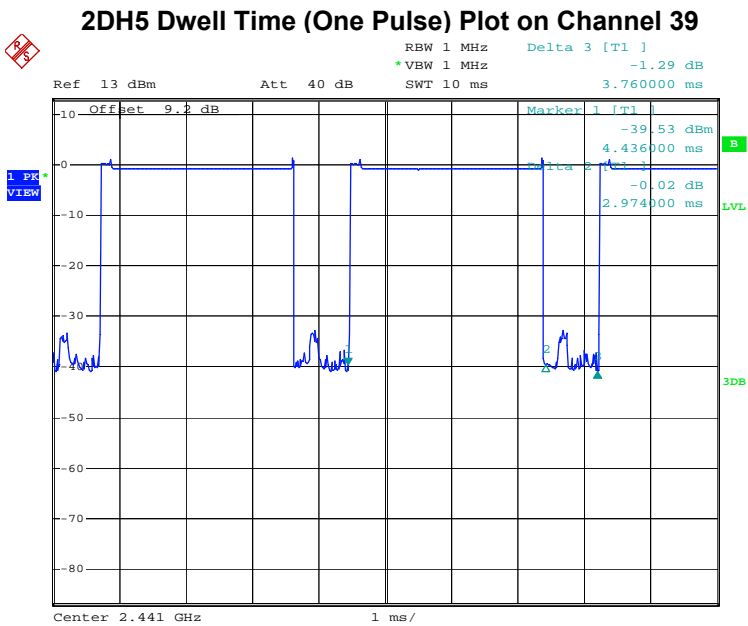
8. t: Package Transfer Time(us)

π /4-DQPSK

2DH1 Dwell Time (One Pulse) Plot on Channel 39

2DH1 Dwell Time (Count Pulses) Plot on Channel 39

2DH3 Dwell Time (One Pulse) Plot on Channel 39

2DH3 Dwell Time (Count Pulses) Plot on Channel 39

2DH5 Dwell Time (One Pulse) Plot on Channel 39
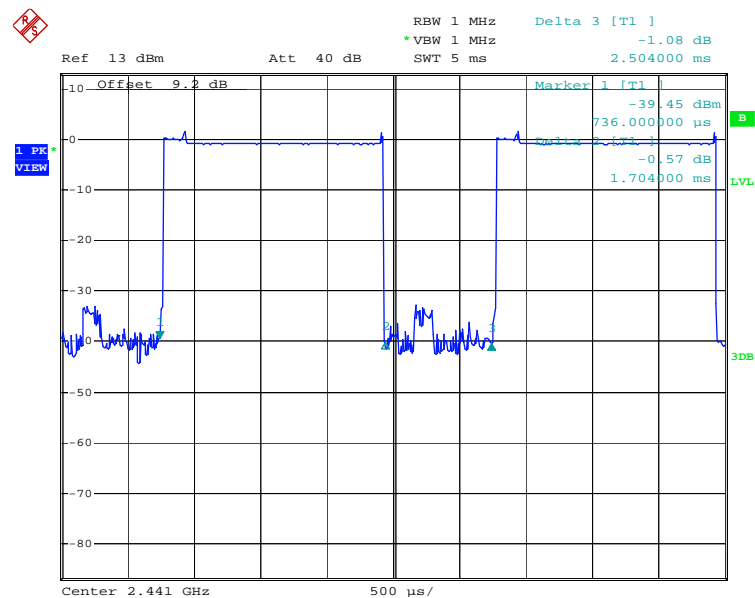
2DH5 Dwell Time (Count Pulses) Plot on Channel 39

Test Mode :	Mode 8	Temperature :	23℃~26℃
Test Engineer :	Hogan He	Relative Humidity :	40%~60%

Package Mode	Average Hopping Channel	Package Transfer Time (usec)	Dwell Time (sec)	Limits (sec)	Pass/Fail
3DH1	10.1	420	0.134	0.4	Pass
3DH3	5.1	1704	0.273	0.4	Pass
3DH5	3.4	2964	0.316	0.4	Pass

Remark:

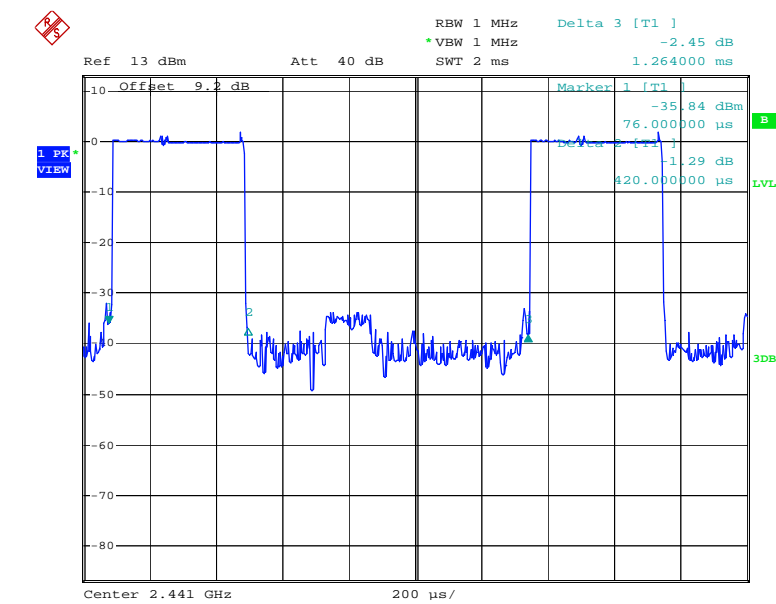9. Dwell Time=79(channels) x 0.4(s) x average hopping channel x package transfer time

10. 79 channels come from the Hopping Channel number.
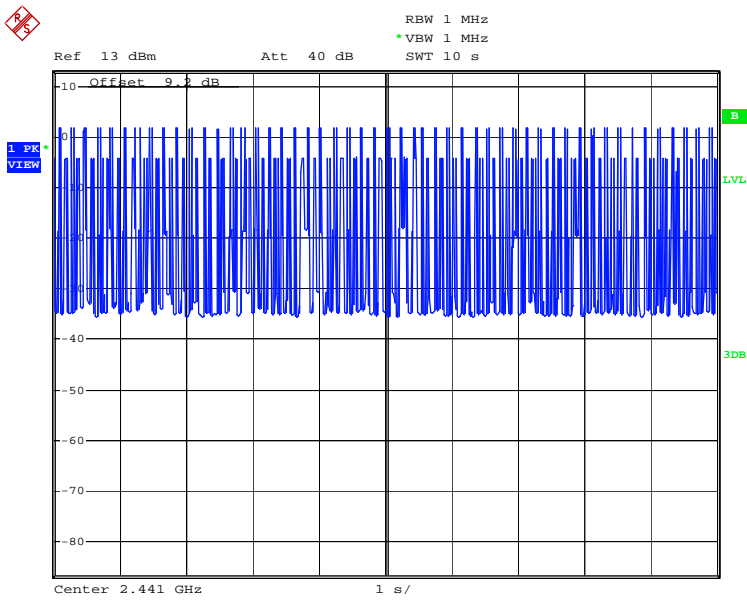
11. Average Hopping Channel = hops/sweep time

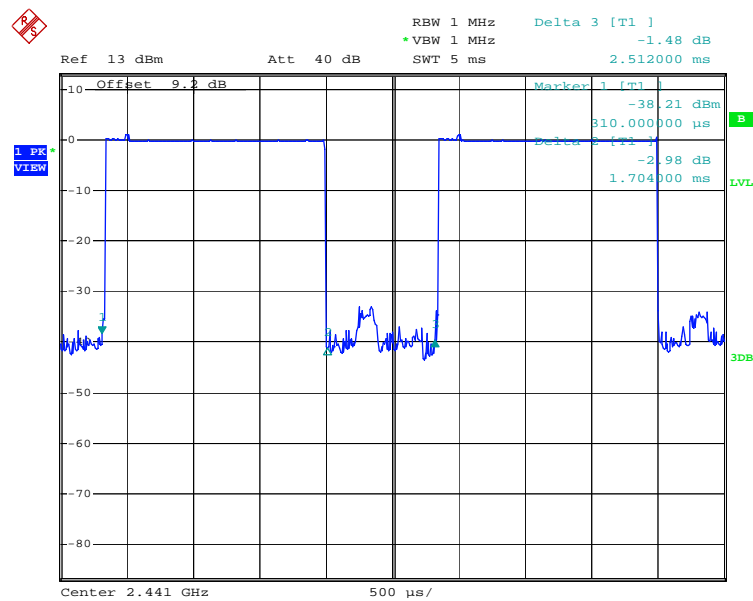12. t: Package Transfer Time(us)

8-DPSK

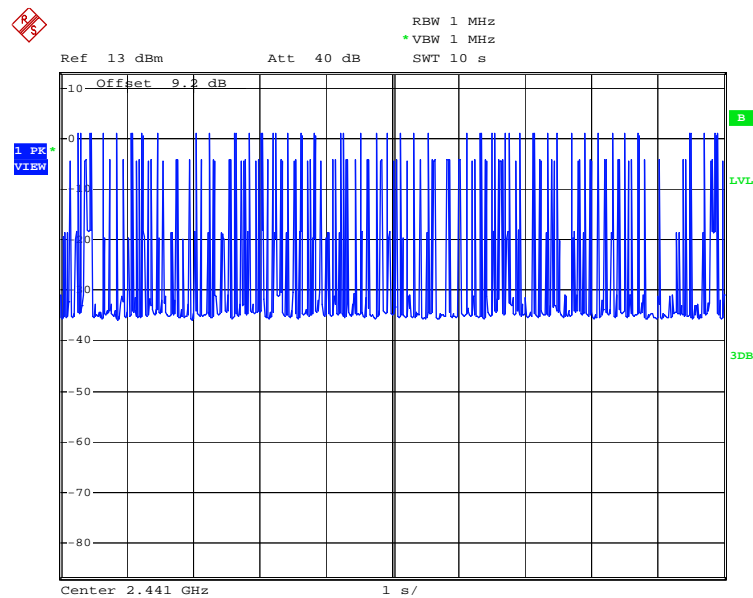## 3DH1 Dwell Time (One Pulse) Plot on Channel 39

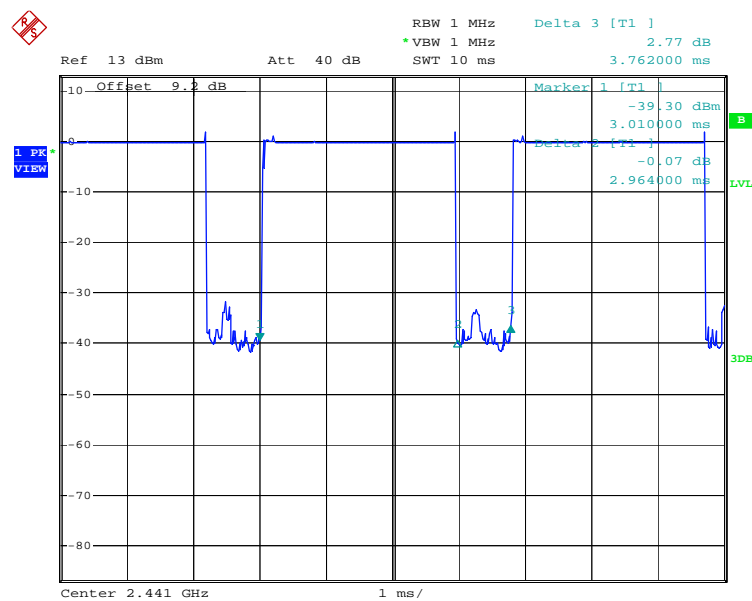## 3DH1 Dwell Time (Count Pulses) Plot on Channel 39
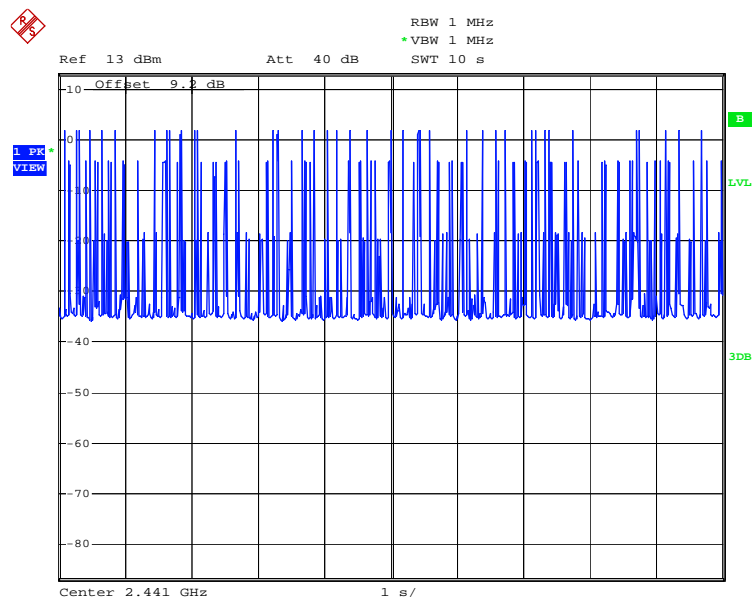
3DH3 Dwell Time (One Pulse) Plot on Channel 39

3DH3 Dwell Time (Count Pulses) Plot on Channel 39

3DH5 Dwell Time (One Pulse) Plot on Channel 39

3DH5 Dwell Time (Count Pulses) Plot on Channel 39

3.5 Peak Output Power Measurement

3.5.1   Limit of Peak Output Power

Frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels: 1W (30 dBm).
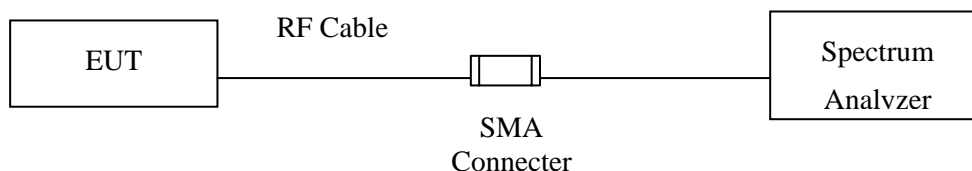
3.5.2   Measuring Instruments

See list of measuring instruments of this test report.

3.5.3   Test Procedures

1. The testing follows FCC Public Notice DA 00-705 Measurement Guidelines.
2. The RF output of EUT was connected to the spectrum analyzer by a low loss cable.
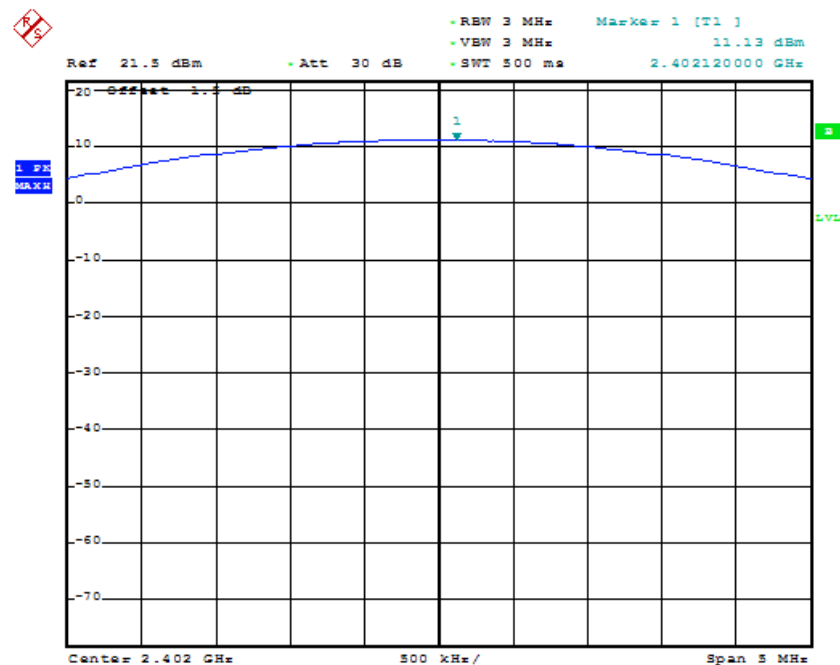
3.5.4   Test Setup

RF Cable

| EUT | | Spectrum Analvzer |

SMA
Connecter

3.5.5   Test Result of Peak Output Power

Test Mode :	Mode 7, 8, 9	Temperature :	23℃~26℃
Test Engineer :	Hogan He	Relative Humidity :	40%~60%

Channel	Frequency (MHz)	RF Power (dBm)		
		8-DPSK 1 Mbps	Max. Limits (dBm)	Pass/Fail
00	2402	11.13	30	Pass
39	2441	10.63	30	Pass
78	2480	9.56	30	Pass

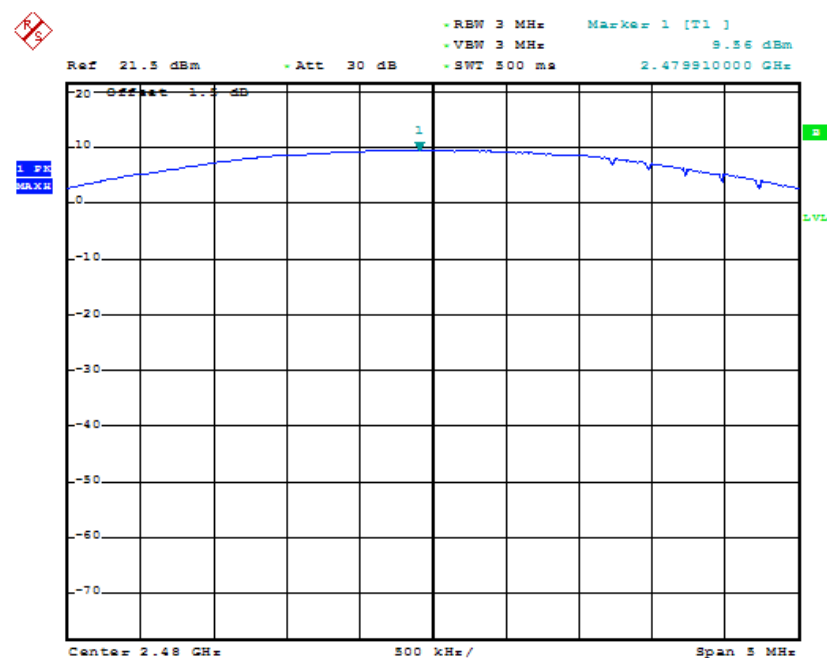**Peak Output Power Plot on Channel 00**

Date: 29.MAR.2012   13:02:55

Peak Output Power Plot on Channel 39
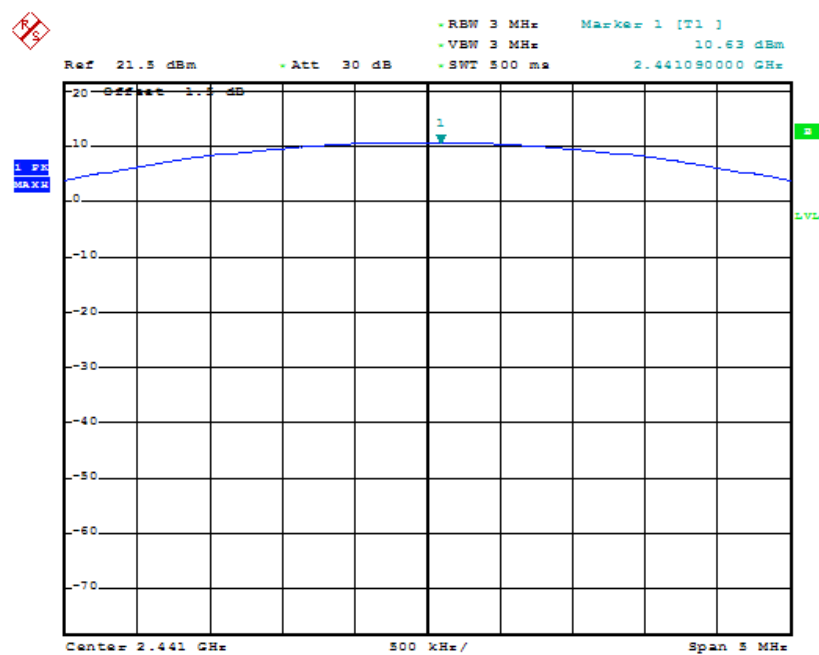
Date: 29.MAR.2012 13:00:24

Peak Output Power Plot on Channel 78

Date: 29.MAR.2012 12:59:09

3.6 Band Edges Measurement

3.6.1 Limit of Band Edges

In any 100 kHz bandwidth outside the intentional radiation frequency band, the radio frequency power shall be at least 20 dB below the highest level of the radiated power. In addition, radiated emissions which fall in the restricted bands must also comply with the radiated emission limits.

3.6.2 Measuring Instruments

See list of measuring instruments of this test report.

3.6.3 Test Procedures

1. The testing follows the guidelines in ANSI C63.4-2003 and FCC Public Notice DA 00-705 Measurement Guidelines.

2. RF antenna conducted test: Set RBW = 300kHz, Video bandwidth (VBW) $\geq$ RBW. Band edge emissions must be at least 20 dB down from the highest emission level within the authorized band as measured with a 300k Hz RBW. Note: If the device complies with the use of power option 2 the attenuation under this paragraph shall be 30 dB instead of 20 dB.

3. Radiated emission test: Applies to band edge emissions that fall in the restricted bands listed in FCC Section 15.205. The maximum permitted average field strength is listed in FCC Section 15.209. A pre-amp is necessary for this measurement. For measurements above 1 GHz, set RBW = 1MHz, VBW = 1MHz, Sweep: Auto for Peak; set RBW = 1MHz, VBW = 10 Hz, Sweep: Auto for Average. If the emission is pulsed, modify the unit for continuous operation; use the settings shown above, then correct the reading by subtracting the peak-average correction factor, derived from the appropriate duty cycle calculation. See FCC Section 15.35(b) and (c).

4. In case the emission is fail due to the used RBW / VBW is too wide, marker-delta method of FCC Public Notice DA 00-705 will be followed.

3.6.4 Test Setup

<Radiated Band Edges>

<Conducted Band Edges>
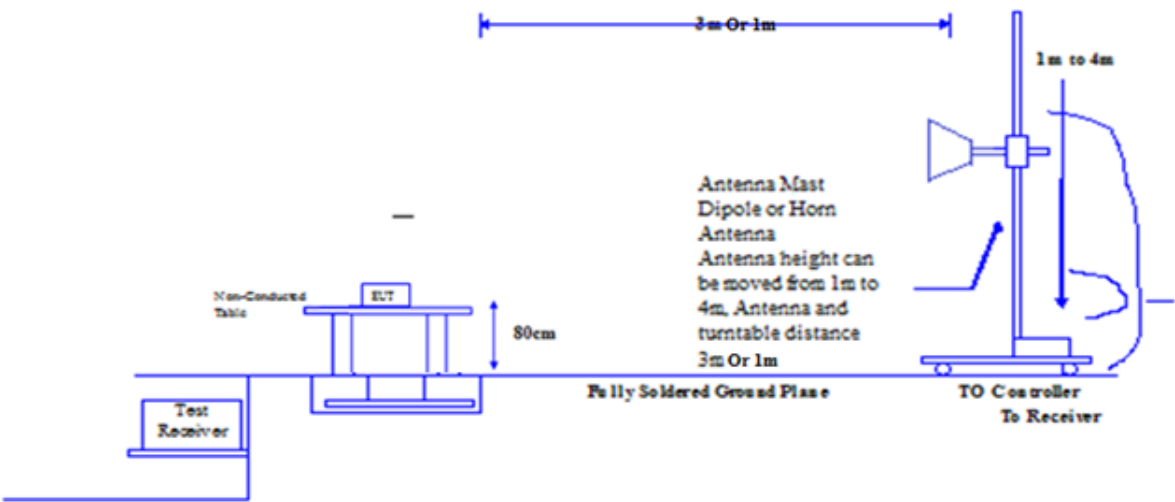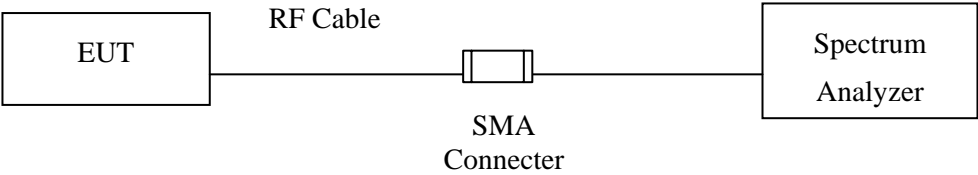
3.6.5 Test Result of Radiated Band Edges

Test Band :	Mode 1
Test Channel	00

| Frequency GHz	Level dBuv/m	Over Limit dB	Limit Line dBuv/m	Read Level dBuv	Antenna Factor dB	Cable Loss dB	Preamp Factor dB	Remark	Polarity
2.4	56.77	-17.23	74	46.28	27.5	6.99	24	Peak	Vertical
2.4	51.4	-2.6	54	40.91	27.5	6.99	24	Average	Vertical
2.4	71.3	-2.7	74	60.81	27.5	6.99	24	Peak	Horizontal
2.4	66.98	12.98	54	56.49	27.5	6.99	24	Average	Horizontal

Test Band :	Mode 2
Test Channel	78

Frequency GHz	Level dBuv/m	Over Limit dB	Limit Line dBuv/m	Read Level dBuv	Antenna Factor dB	Cable Loss dB	Preamp Factor dB	Remark	Polarity
2.4835	58.61	-15.39	74	47.33	27.5	6.99	24	Peak	Vertical
2.4835	48.48	-5.52	54	37.2	27.5	6.99	24	Average	Vertical
2.4835	57.9	-16.1	74	46.62	27.5	6.99	24	Peak	Horizontal
2.4835	46.86	-7.14	54	35.58	27.5	6.99	24	Average	Horizontal

3.6.6 Test Result of Conducted Band Edges

Test Mode :	Mode 1 and 3	Temperature :	23℃~26℃
Test Channel :	00 and 78	Relative Humidity :	40%~60%
		Test Engineer :	Hogan He

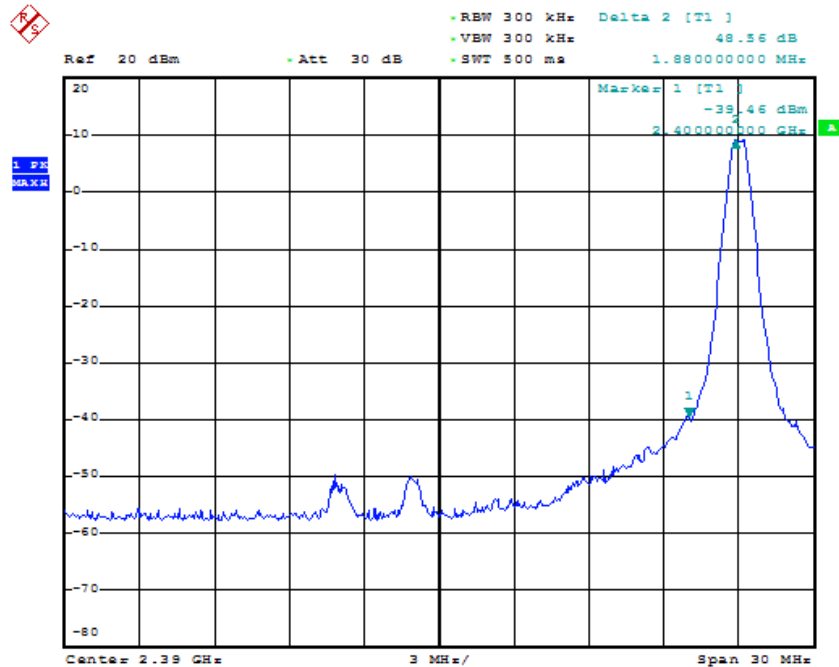**Low Band Edge Plot on Channel 00**
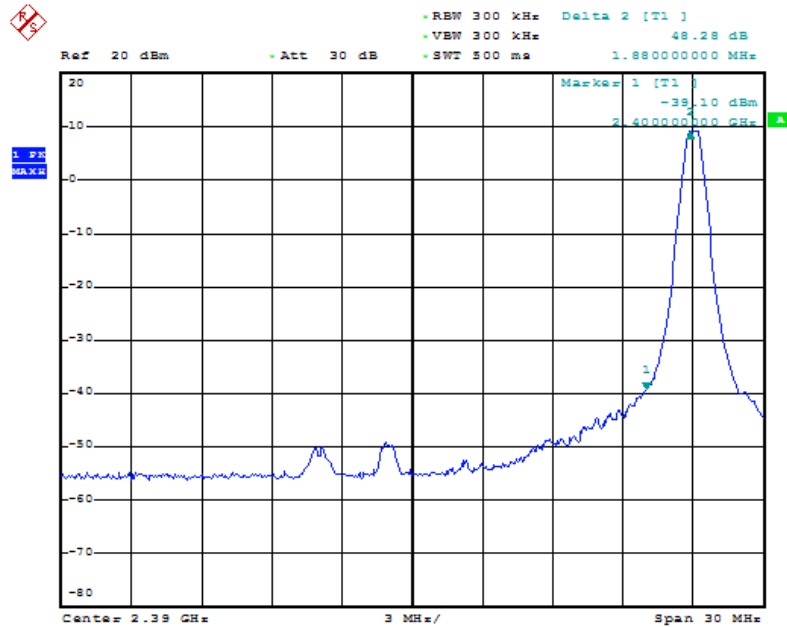
Date: 31.MAR.2012 09:43:52

High Band Edge Plot on Channel 78
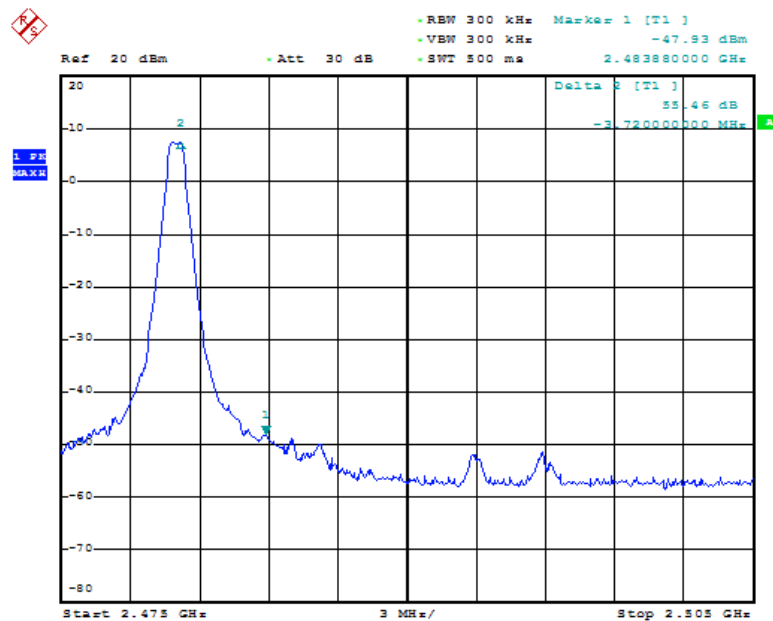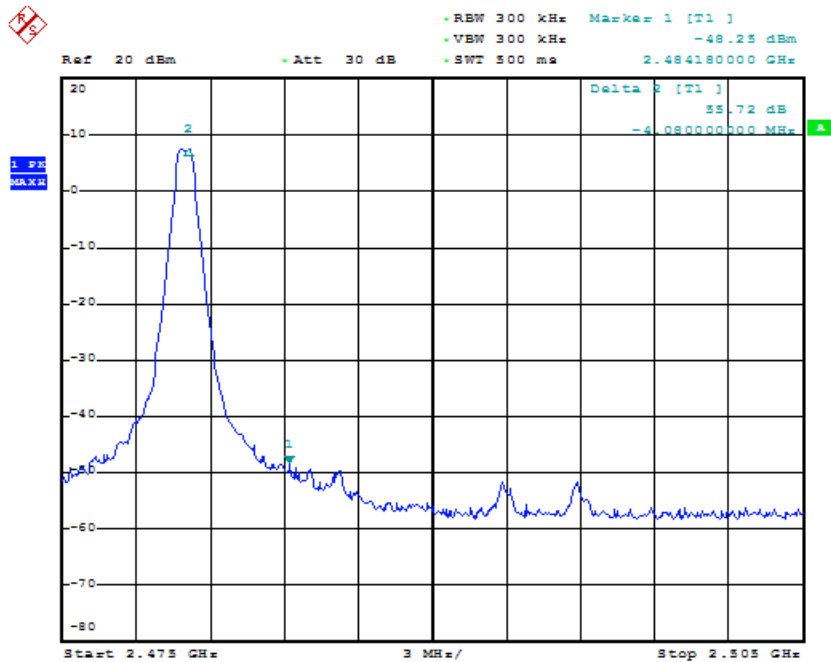

Date: 31.MAR.2012 09:55:23

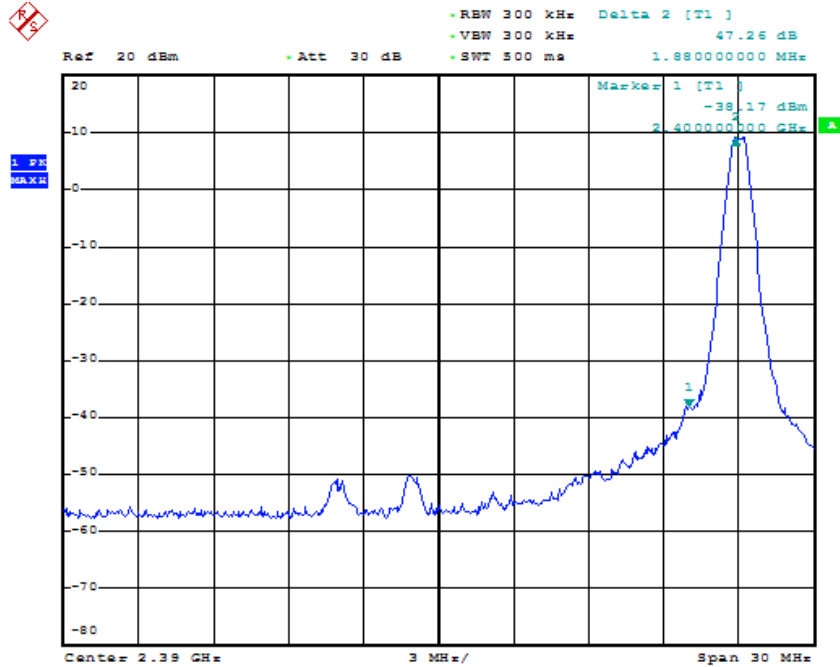| Test Mode :	Mode 4 and 6	Temperature :	23℃~26℃
Test Channel :	00 and 78	Relative Humidity :	40%~60%
		Test Engineer :	Hogan He

Low Band Edge Plot on Channel 00

Date: 31.MAR.2012   09:44:59

High Band Edge Plot on Channel 78

Date: 31.MAR.2012   09:54:05

Test Mode :	Mode 7 and 9	Temperature :	23℃~26℃
Test Channel :	00 and 78	Relative Humidity :	40%~60%
		Test Engineer :	Hogan He

Low Band Edge Plot on Channel 00

Date: 31.MAR.2012   09:46:04

High Band Edge Plot on Channel 78
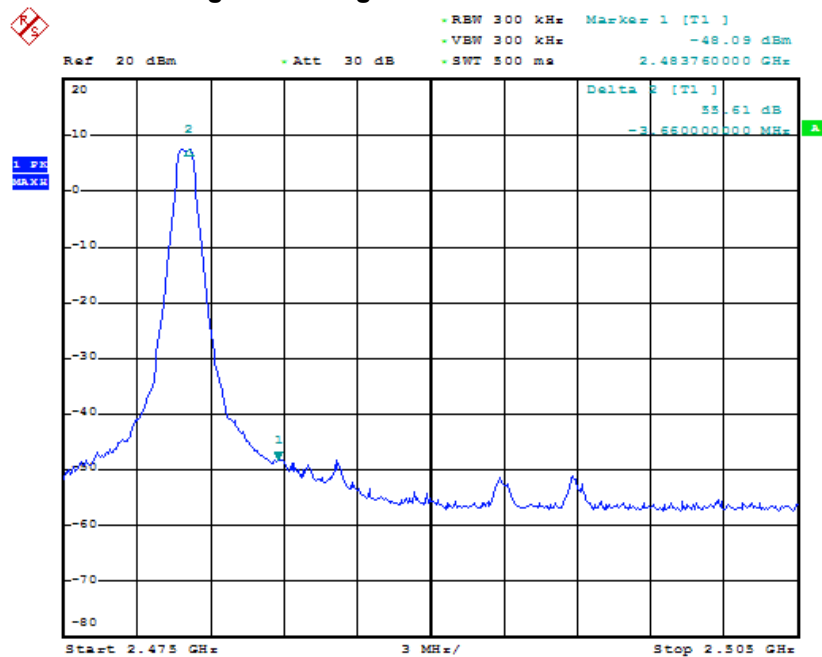

Date: 31.MAR.2012   09:53:05

3.7   Spurious Emission Measurement

3.7.1   Limit of Spurious Emission Measurement

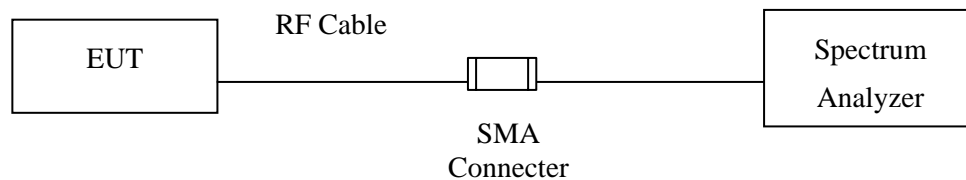All harmonics/spurs must be at least 20 dB down from the highest emission level within the authorized band.

3.7.2   Measuring Instruments

See list of measuring instruments of this test report.

3.7.3   Test Procedures

1. The transmitter output was connected to the spectrum analyzer via a low lose cable.
2. Set RBW = 100 kHz, Video bandwidth (VBW) ≥ RBW, scan up through 10th harmonic. All harmonics / spurs must be at least 20 dB down from the highest emission level within the authorized band as measured with a 100 kHz RBW.
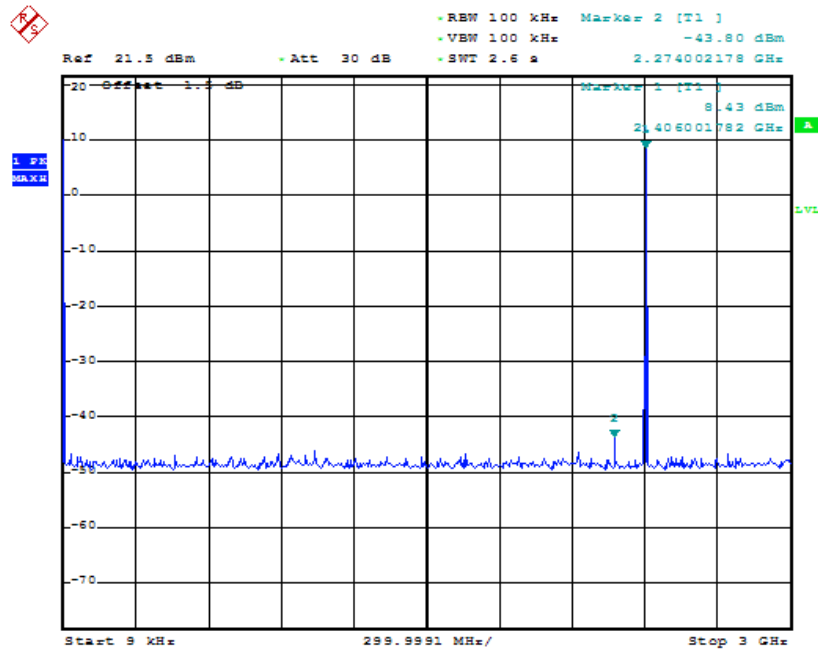
3.7.4   Test Setup

```
  ┌──────────┐   RF Cable              ┌──────────────┐
  │          │                         │   Spectrum   │
  │   EUT    │──────────┤ ├───────────│              │
  │          │                         │   Analyzer   │
  └──────────┘           SMA           └──────────────┘
                       Connecter
```
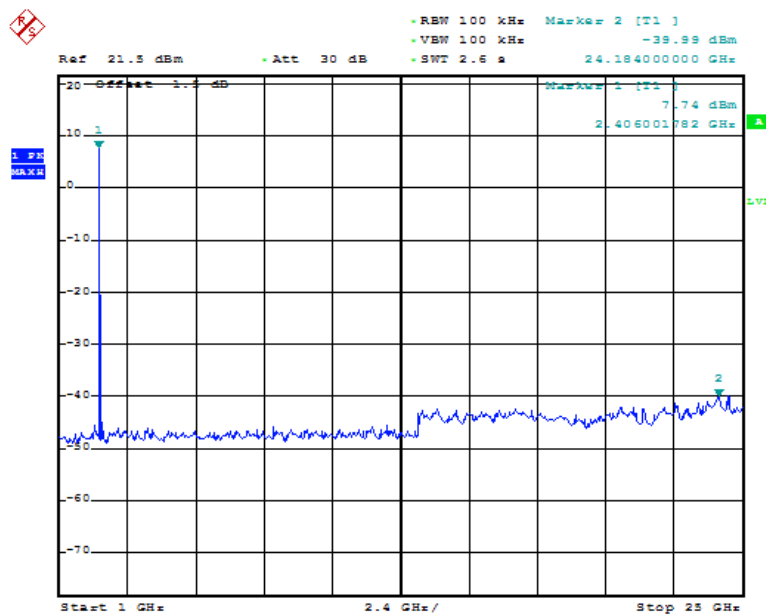
3.7.5 Test Result of Output Power

Test Mode :	Mode 7	Temperature :	23℃~26℃
Test Channel :	00	Relative Humidity :	40%~60%
		Test Engineer :	Hogan He

Conducted Spurious Emission Plot between 9 kHz ~ 3 GHz
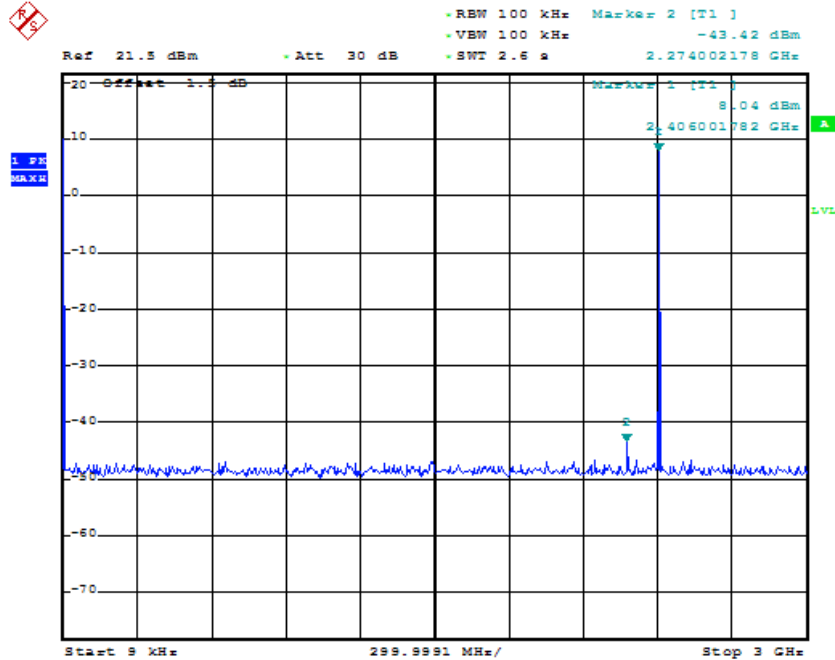

Date: 01.APR.2012 07:28:50

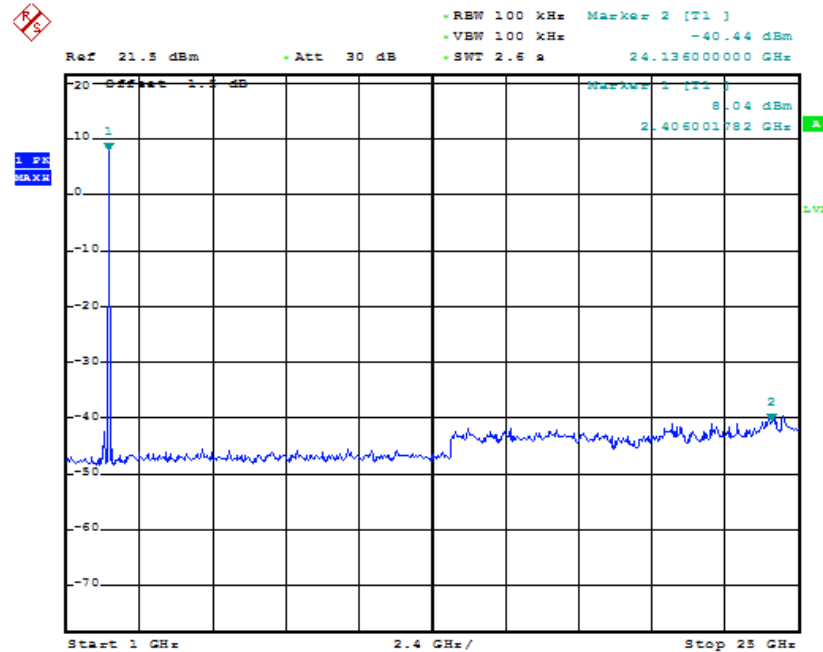**Conducted Spurious Emission Plot between 1 GHz ~ 25 GHz**

Date: 01.APR.2012 07:41:27

Test Mode :	Mode 8	Temperature :	23℃~26℃
Test Channel :	39	Relative Humidity :	40%~60%
		Test Engineer :	Hogan He

Conducted Spurious Emission Plot between 9 kHz ~ 3 GHz
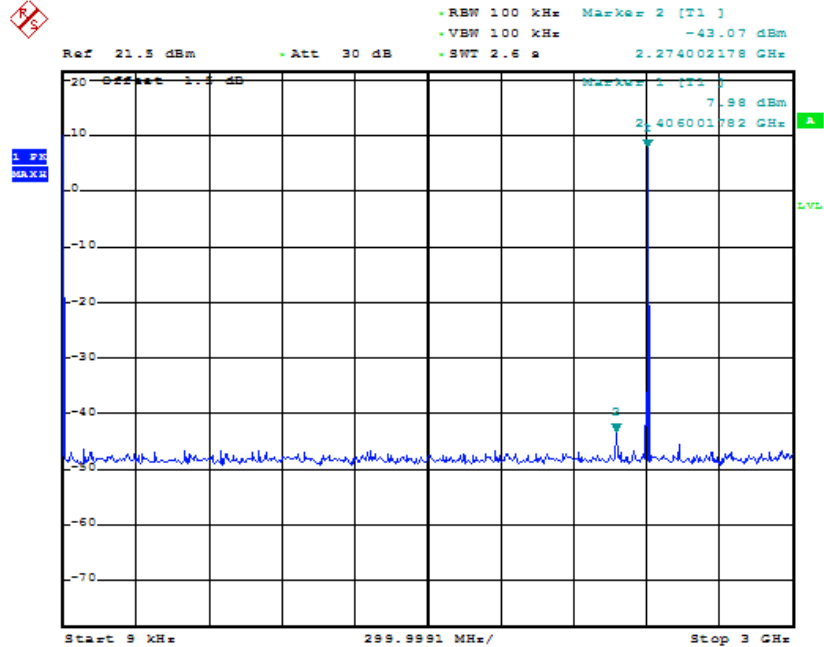

Date: 01.APR.2012   07:29:52

Conducted Spurious Emission Plot between 1 GHz ~ 25 GHz

Date: 01.APR.2012   07:38:18

Test Mode :	Mode 9	Temperature :	23℃~26℃
Test Channel :	78	Relative Humidity :	40%~60%
		Test Engineer :	Hogan He

Conducted Spurious Emission Plot between 9 kHz ~ 3 GHz

Date: 01.APR.2012   07:32:09

Conducted Spurious Emission Plot between 1 GHz ~ 25 GHz
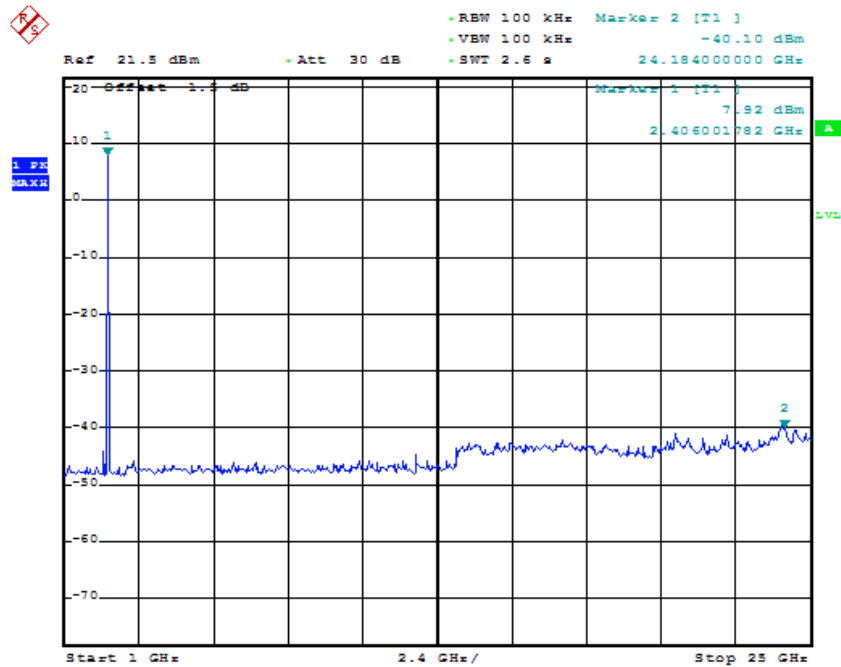

Date: 01.APR.2012   07:44:18

3.8 AC Conducted Emission Measurement

3.8.1 Limit of AC Conducted Emission

For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table.

Frequency of emission (MHz)	Conducted limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

3.8.2 Measuring Instruments

See list of measuring instruments of this test report.

3.8.3 Test Procedures

1. Please follow the guidelines in ANSI C63.4-2003.
2. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
3. Connect EUT to the power mains through a line impedance stabilization network (LISN).
4. All the support units are connecting to the other LISN.
5. The LISN provides 50 ohm coupling impedance for the measuring instrument.
6. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
7. Both sides of AC line were checked for maximum conducted interference.
8. The frequency range from 150 kHz to 30 MHz was searched.
9. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.
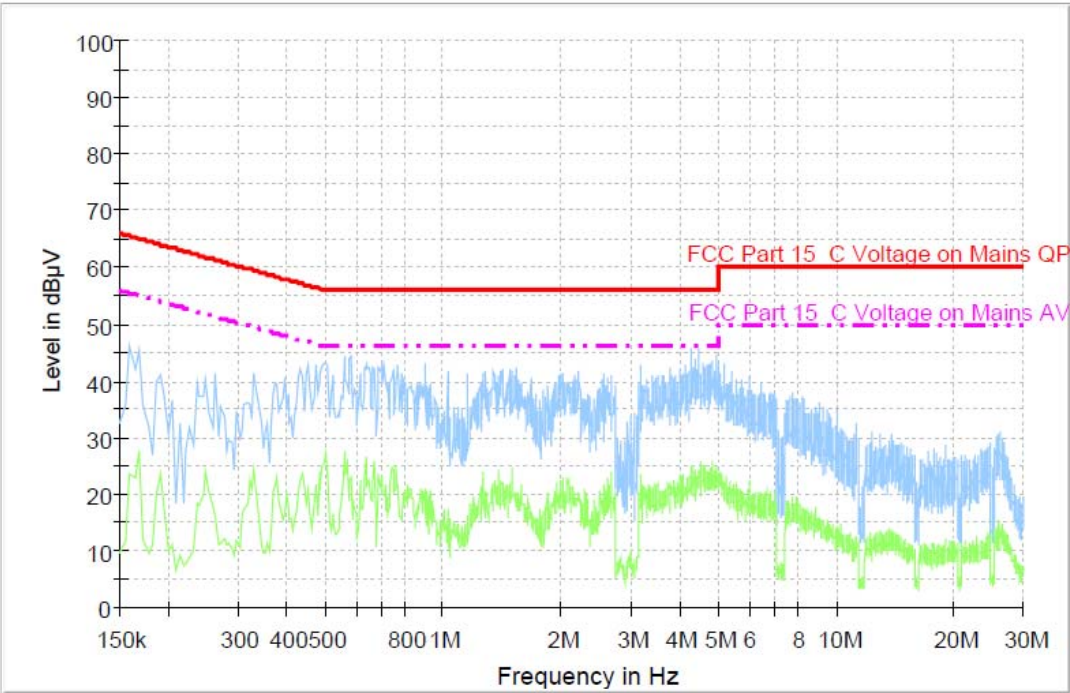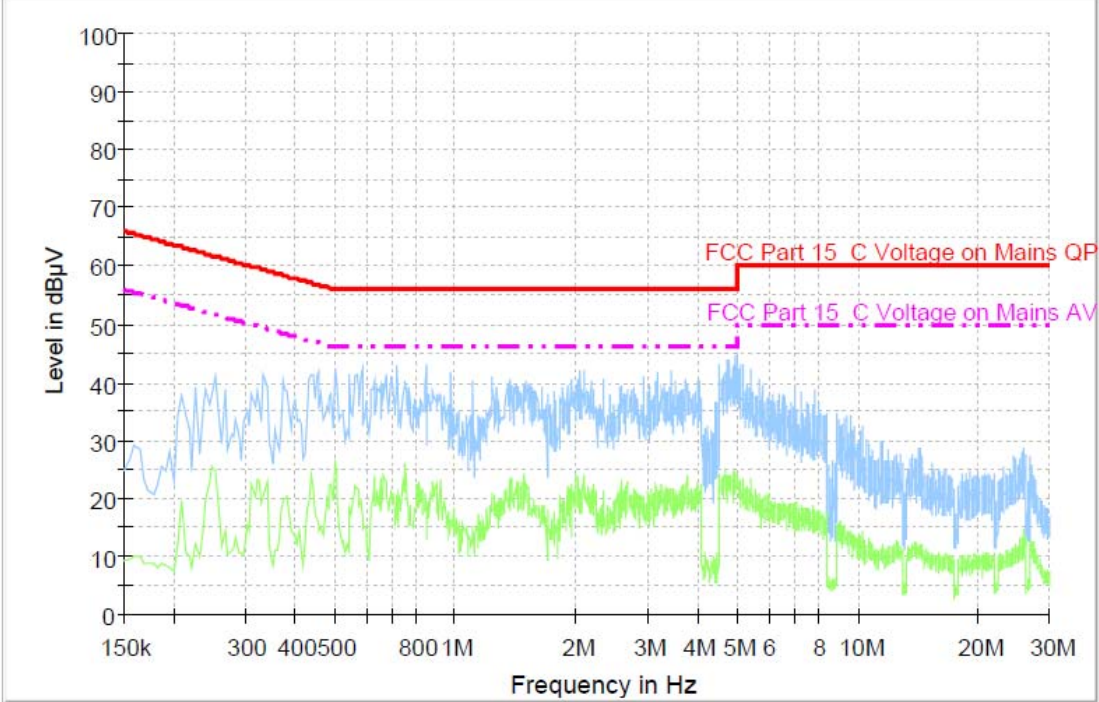
3.8.4   Test Setup
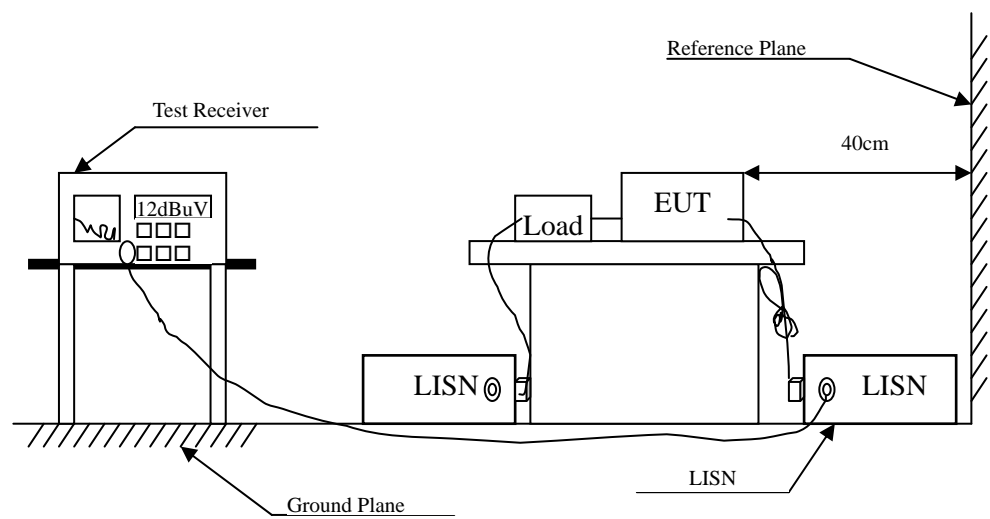
3.8.5 Test Result of AC Conducted Emission

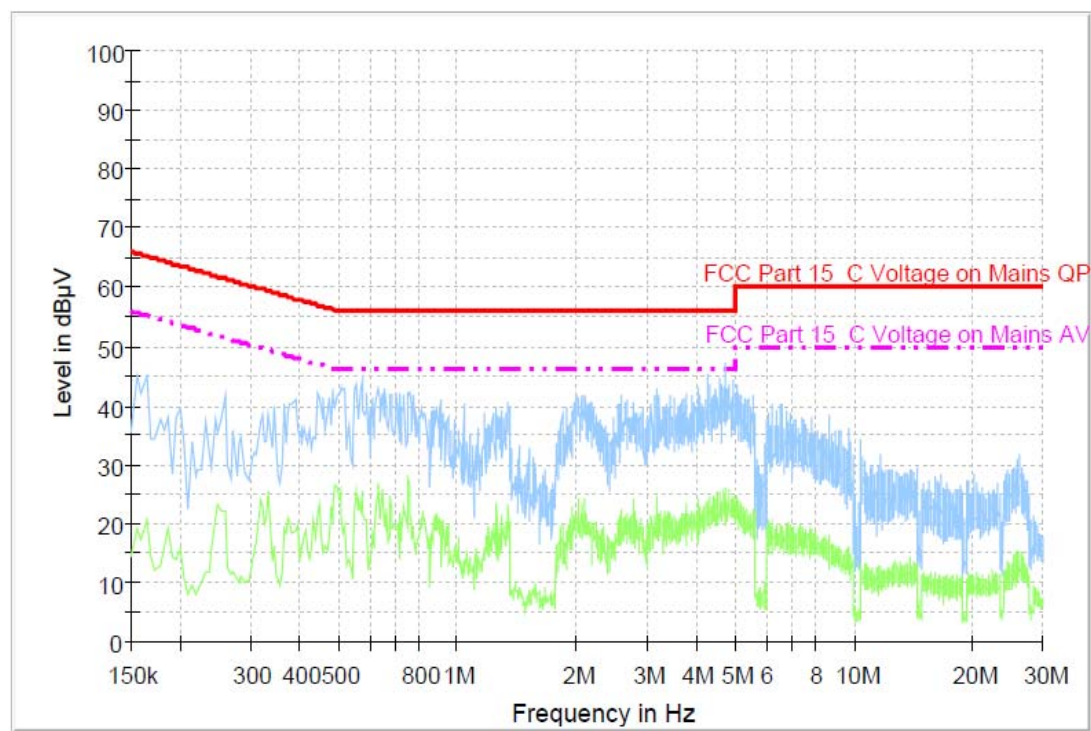**Test Voltage:120V/60Hz**

Test mode:GSM850+Bluetooth Link+Earphone+Neutral
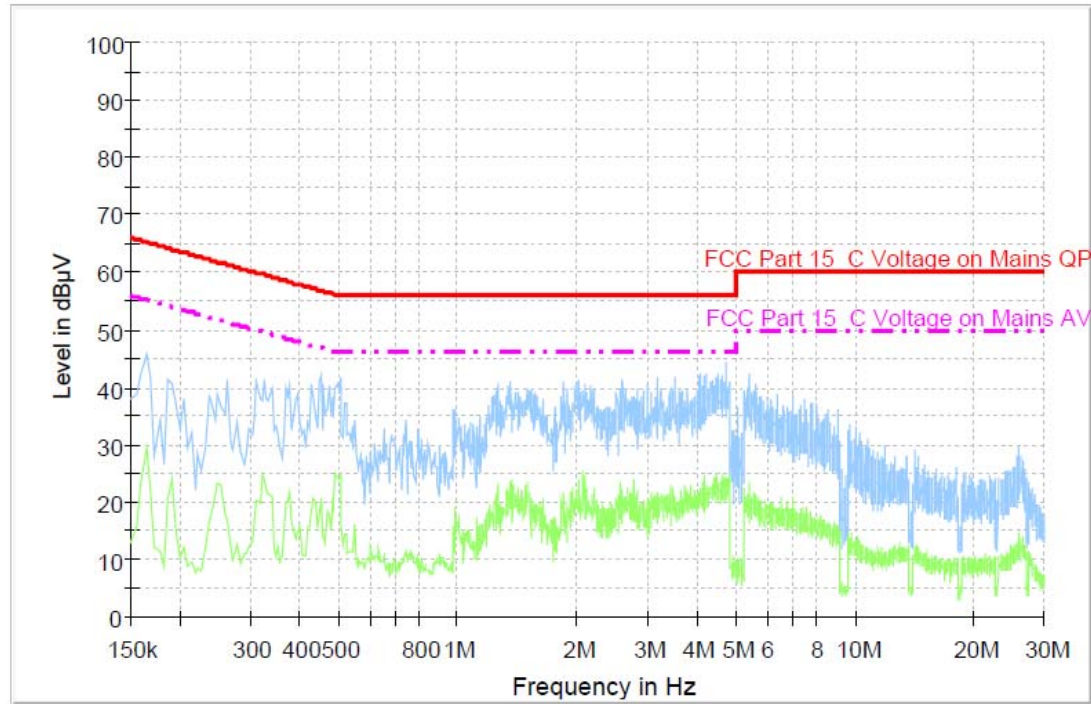

Test mode:GSM850+Bluetooth Link+Earphone+Line

Test mode:GSM1900+Bluetooth Link+Earphone+Neutral

Test mode:GSM1900+Bluetooth Link+Earphone+Line

3.9 Radiated Emission Measurement

3.9.1 Limit of Radiated Emission

In any 100 kHz bandwidth outside the intentional radiator frequency band, all harmonics/spurious must be at least 20 dB below the highest emission level within the authorized band. If the output power of this device was measured by spectrum analyzer, the attenuation under this paragraph shall be 30 dB instead of 20 dB. In addition, radiated emissions which fall in the restricted bands must also comply with the FCC section 15.209 limits as below.

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 – 0.490	2400/F(kHz)	300
0.490 – 1.705	24000/F(kHz)	30
1.705 – 30.0	30	30
30 – 88	100	3
88 – 216	150	3
216 - 960	200	3
Above 960	500	3

### 3.9.2 Measuring Instruments

See list of measuring instruments of this test report.

3.9.3 Test Procedures

1. The testing follows the guidelines in FCC KDB Publication No. 558074 (Measurement Guidelines of DTS).
2. Use the following spectrum analyzer settings:
   (1) Span = wide enough to fully capture the emission being measured; RBW = 1 MHz for $f \geq 1$ GHz, 100 kHz for $f < 1$ GHz; VBW $\geq$ RBW; Sweep = auto; Detector function = peak; Trace = max hold.
   (2) Above 18 GHz shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade from 3m to 1m.
   Distance extrapolation factor = 20 log (specific distance [3m] / test distance [1m]) (dB)
3. Follow the guidelines in ANSI C63.4-2003 with respect to maximizing the emission by rotating the EUT, measuring the emission for three EUT orthogonal planes, and adjusting the measurement antenna height and polarization. A pre-amp and a high pass filter are used for this test in order to get the good signal level.
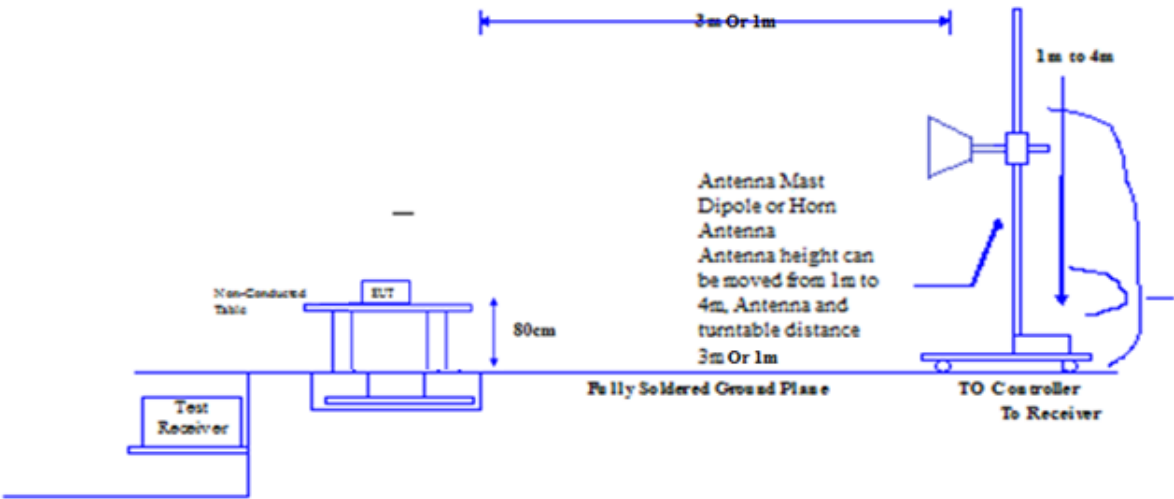
3.9.4   Test Setup
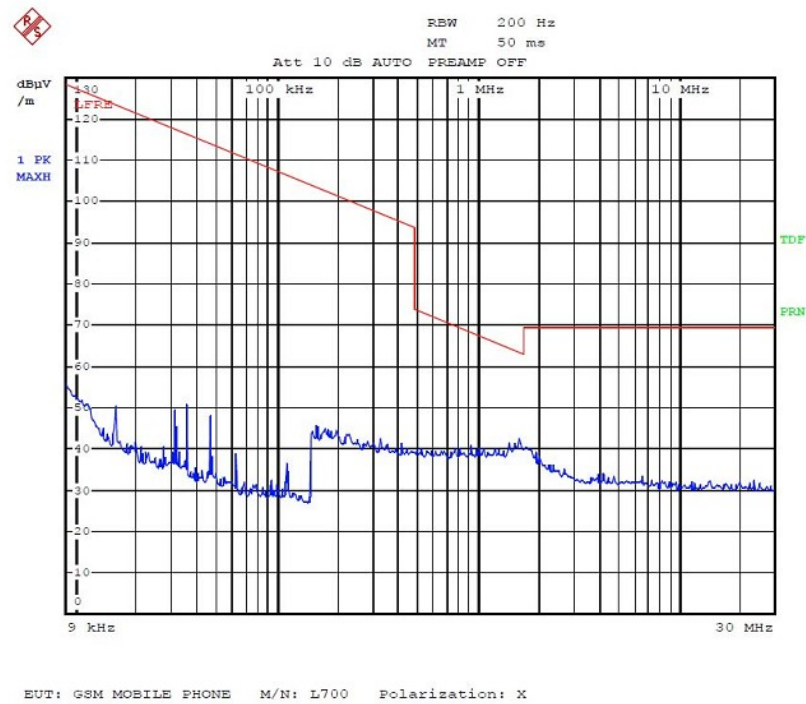
9kHz~30MHz
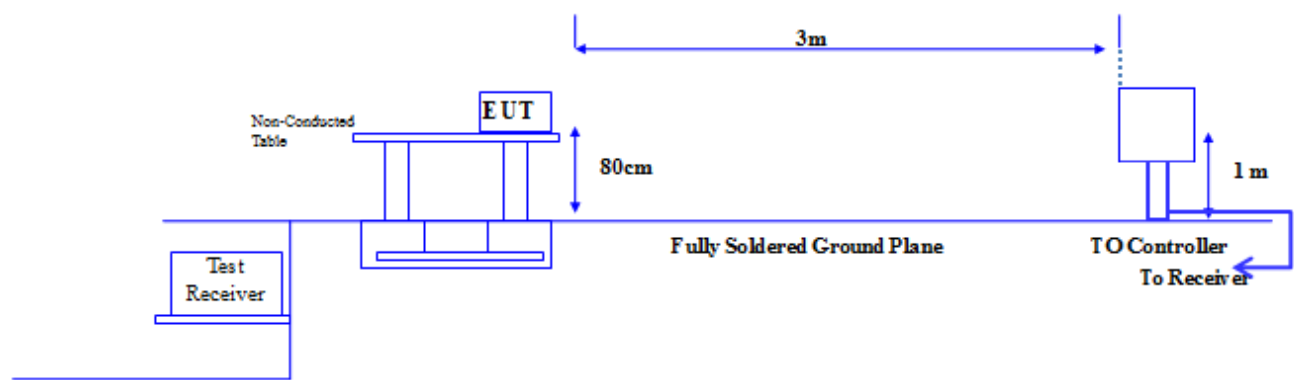
30MHz~1GHz
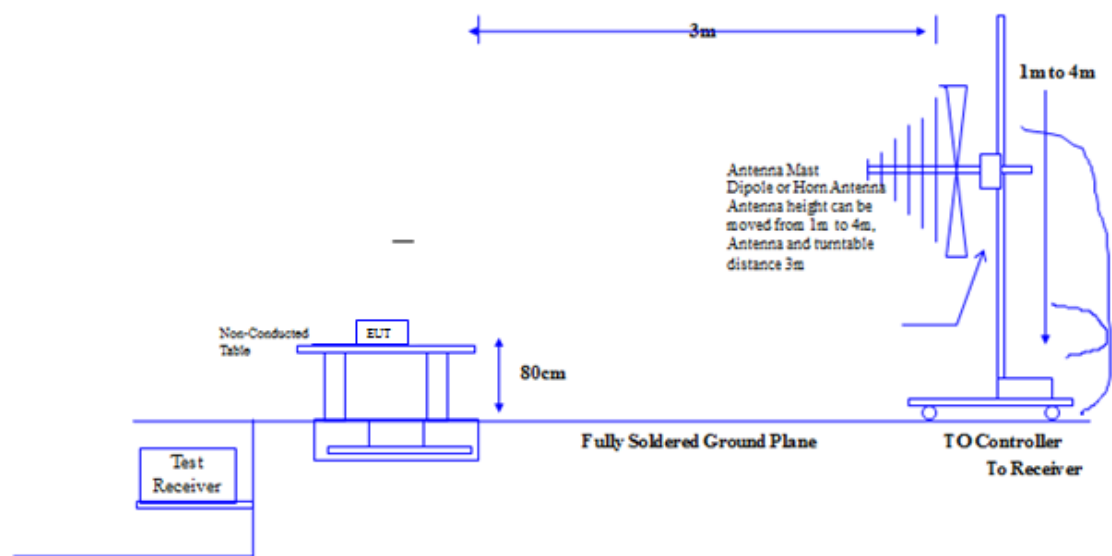
Above 1GHz

3.9.5 Radiated Emission Measurement Results (9kHz ~ 30MHz)

| Test Engineer :	Hogan. He	Temperature :	23℃~26℃
		Relative Humidity :	45%~60%

Frequency (MHz)	Reading (dBu V/m)	Factor(dB) Corr.	Result (dBu V/m)	Limit (dBu V/m)	Margin (dB)	Polarization
1.075	26.65	14.89	41.54	62.97	-21.43	Horizontal
1.075	26.08	14.89	40.97	62.97	-22.00	Vertical

Notes:

1，No emission found between lowest internal or generated frequency to 30MHz.

2，Laboratory's Information：

Prepared By：Accurate Technology Co., Ltd

Address: F1, Bldg. A, Changyuan New Meterial Port, Keyuan Rd., Science & Industry Park
　　　　 Nanshan District, Shenzhen 518057, P.R. China

Company Registration Number：752051

Date of Receipt：2012.04.16
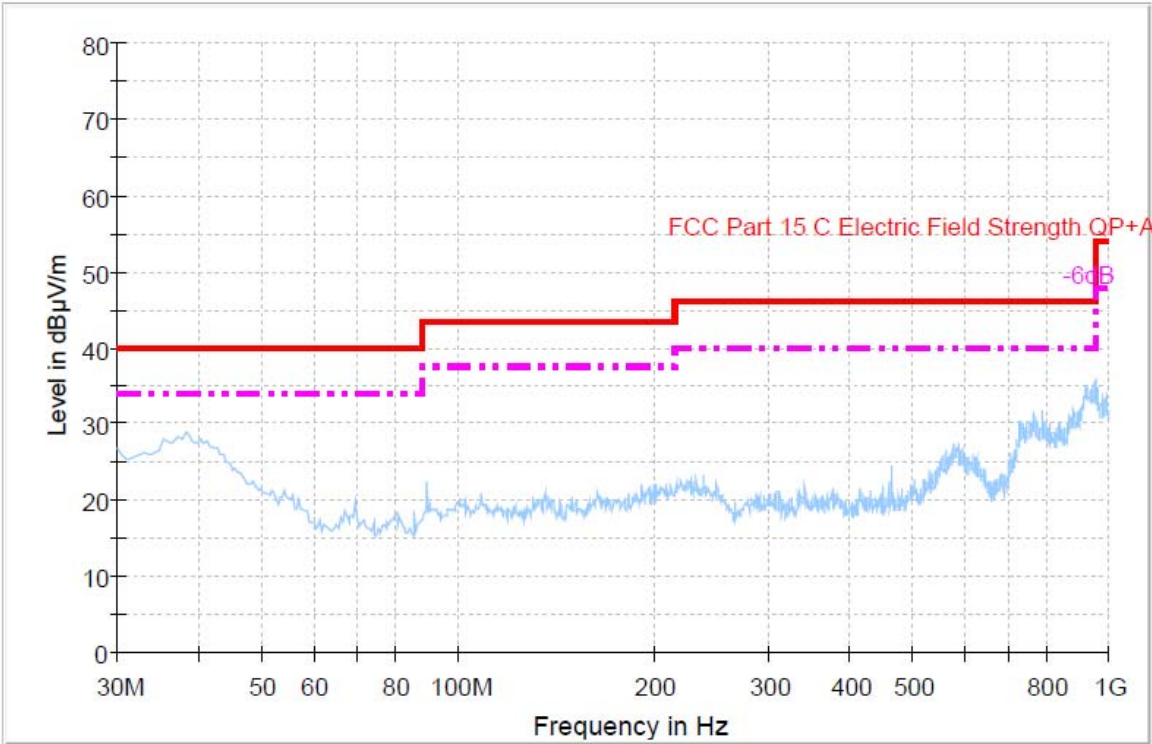
Radiated Emission Plot between 9 kHz ~ 30MHz

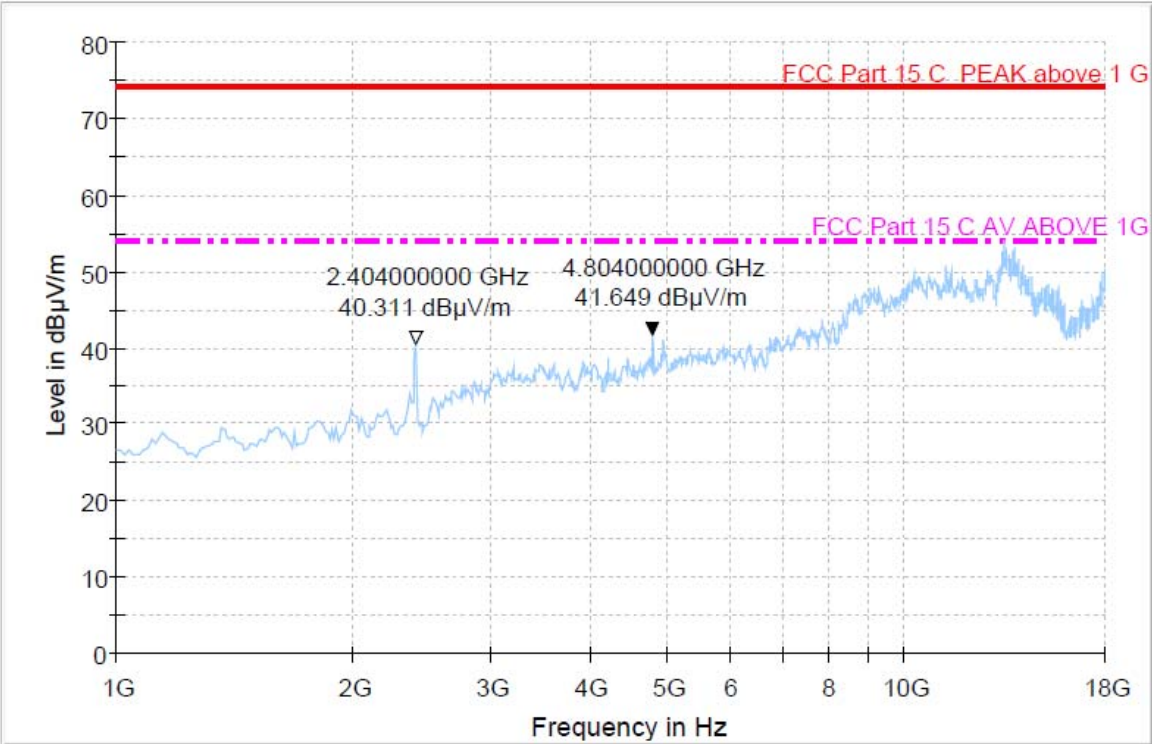**Radiated Emission Plot between 9 kHz ~ 30MHz**

EUT: GSM MOBILE PHONE   M/N: L700   Polarization: Y
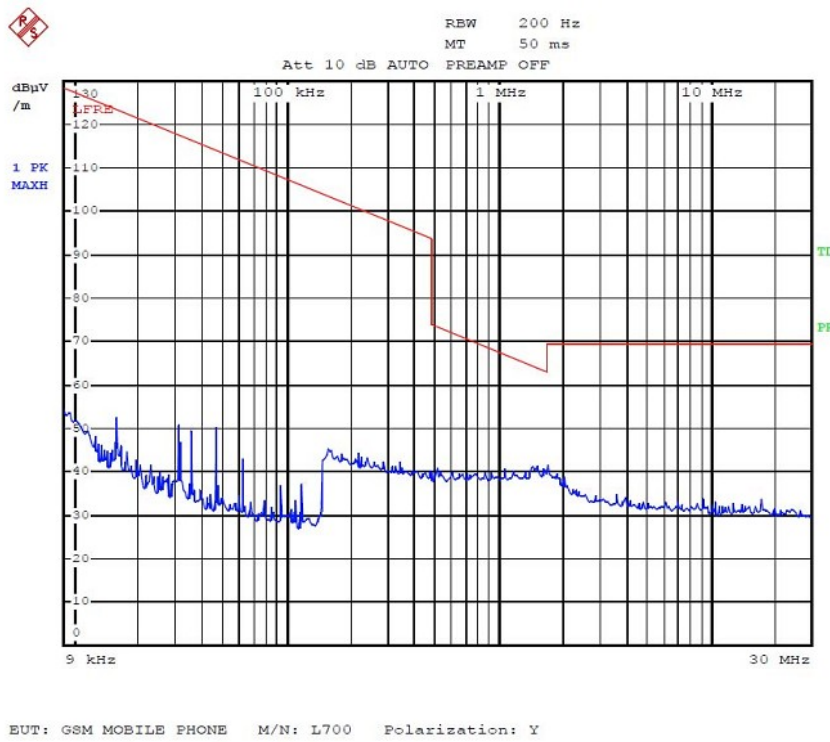
3.9.6 Radiated Emission Measurement Results (30MHz-18GHz)

Test Channel :	00
Remark:	2412MHz is Fundamental signal which can be ignored

Radiated Emission 30MHz-1GHz Vertical

Radiated Emission 1GHz-18GHz Vertical

Radiated Emission 30MHz-1GHz Horizontal

Radiated Emission 1GHz-18GHz Horizontal

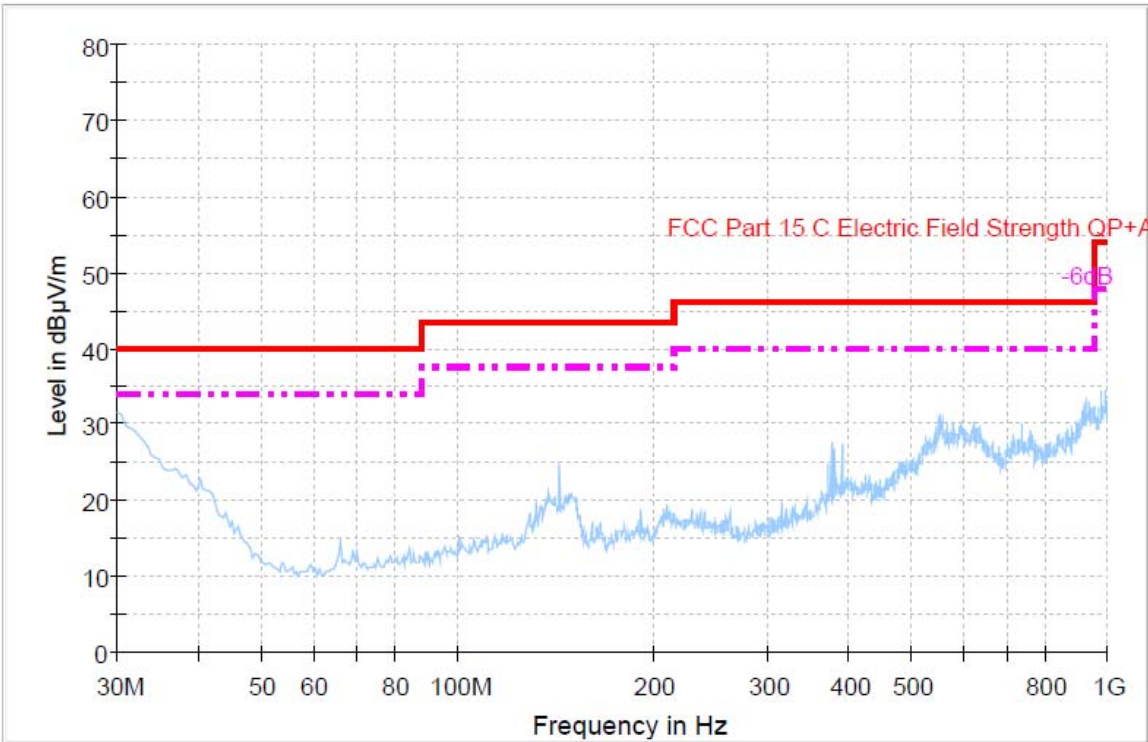| Test Channel :	39
Remark:	2412MHz is Fundamental signal which can be ignored

Radiated Emission 30MHz-1GHz Vertical

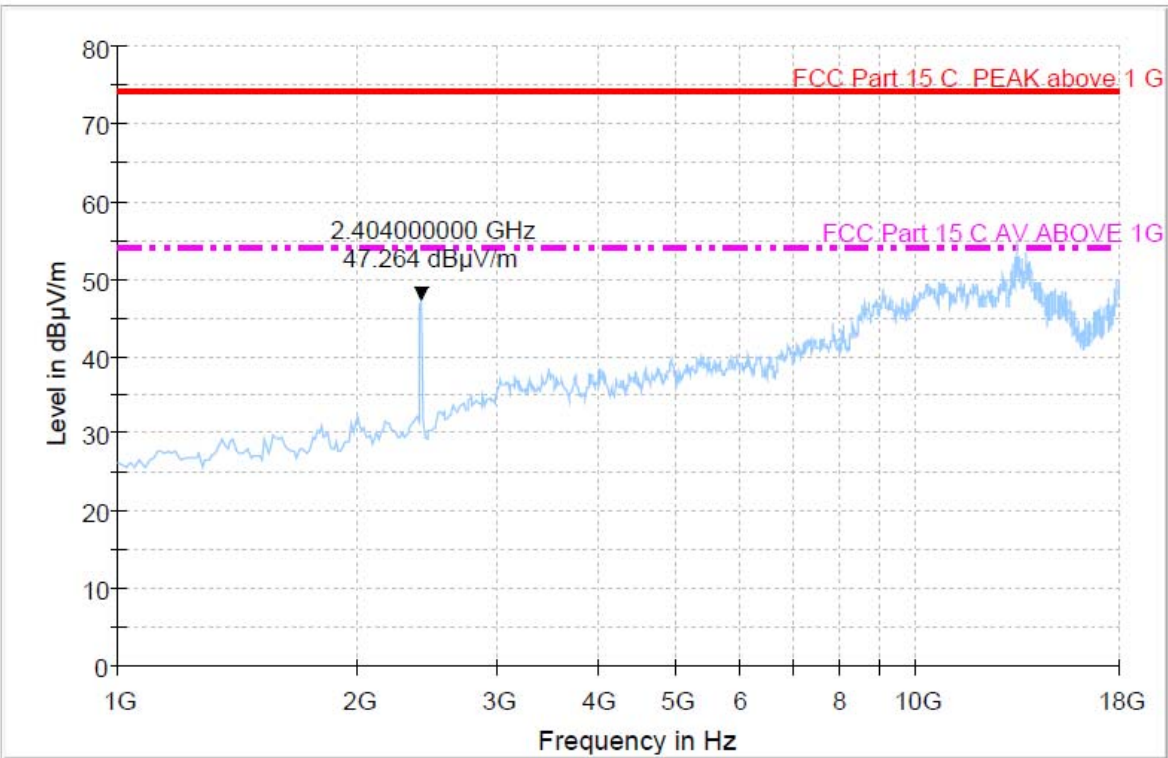**Radiated Emission 1GHz-18GHz   Vertical**

Radiated Emission 30MHz-1GHz Horizontal

Radiated Emission 1GHz-18GHz Horizontal

Test Channel :	78
Remark:	2412MHz is Fundamental signal which can be ignored

Radiated Emission 30MHz-1GHz Vertical

Radiated Emission 1GHz-18GHz Vertical
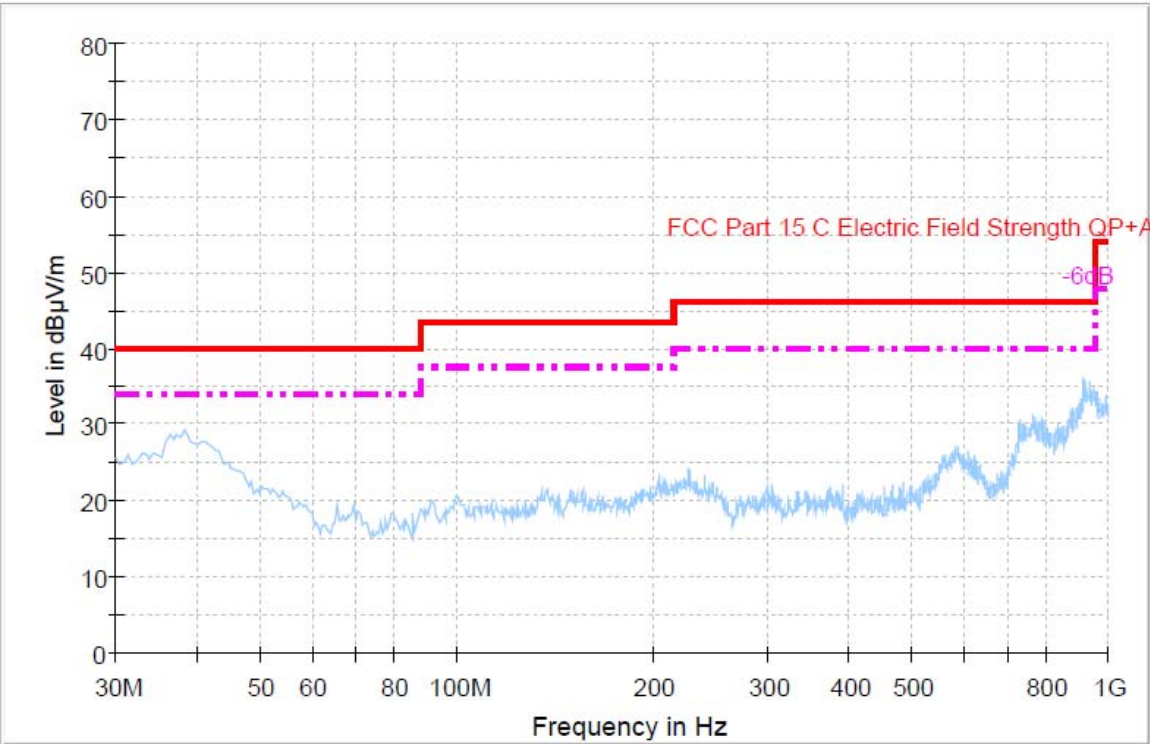
Radiated Emission 30MHz-1GHz Horizontal
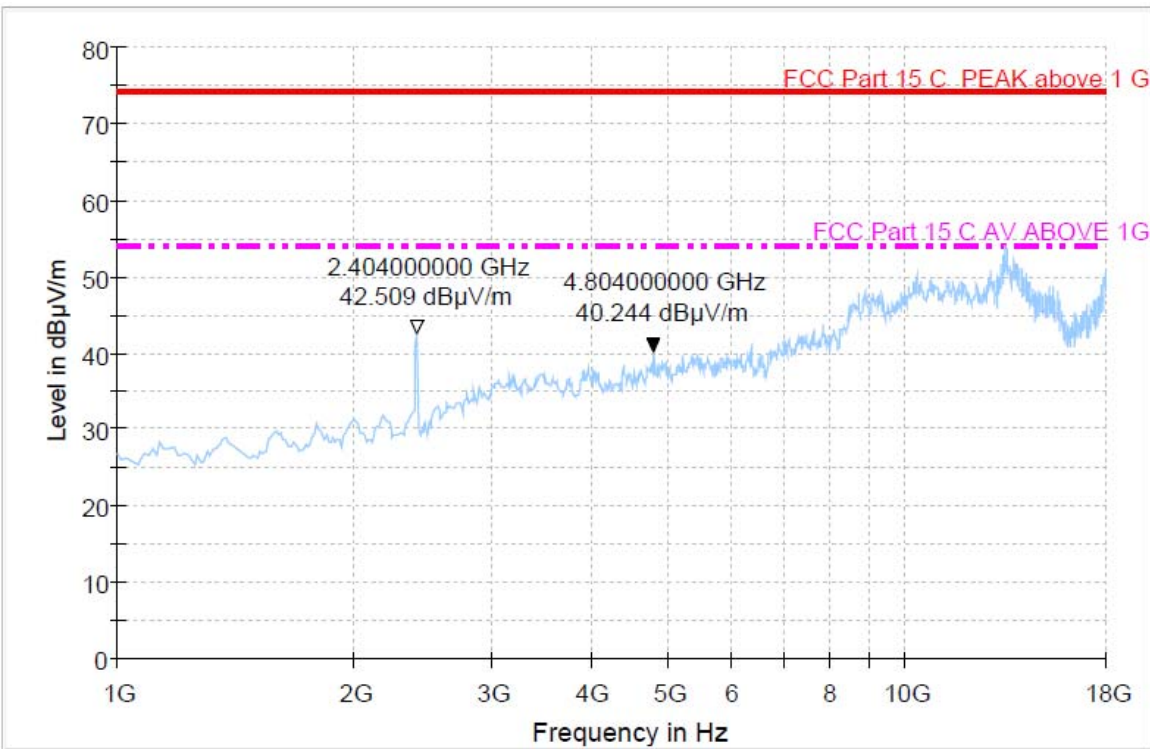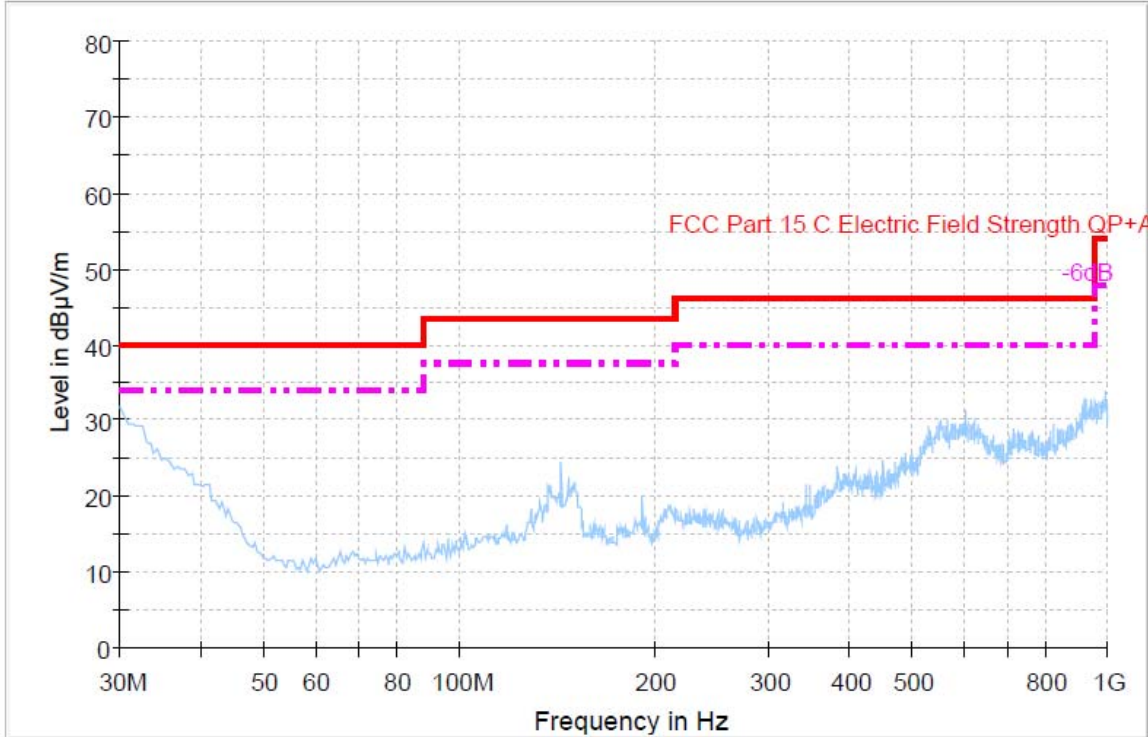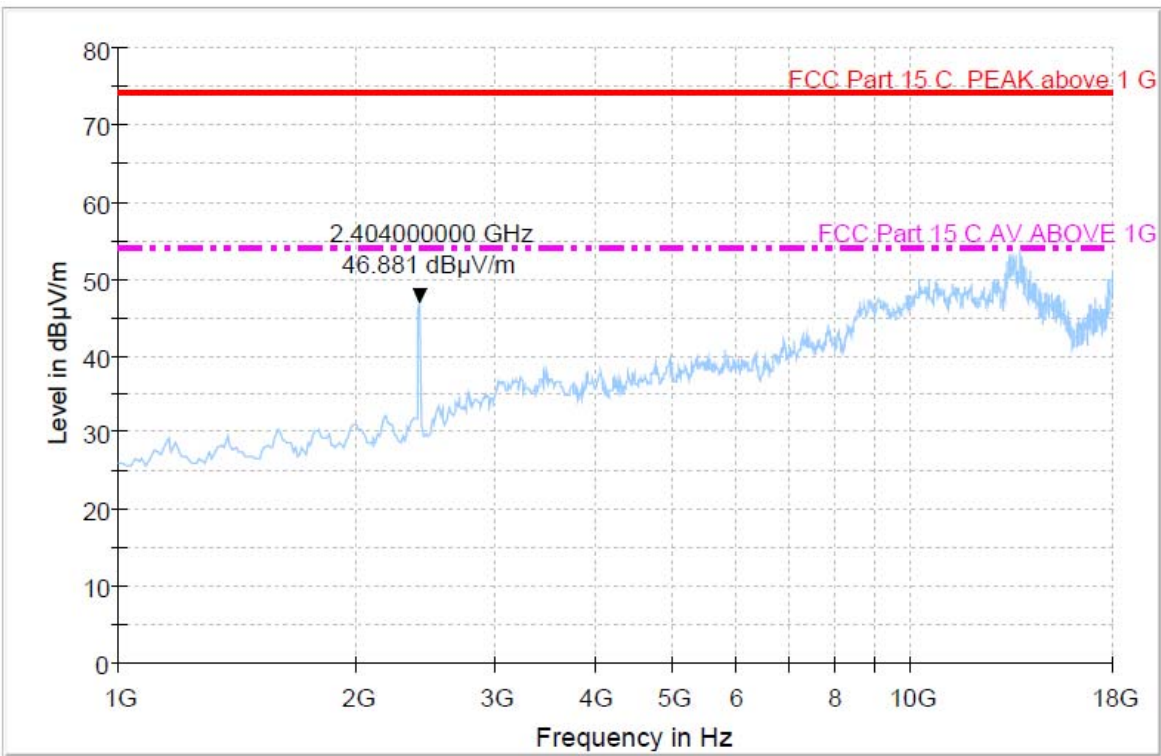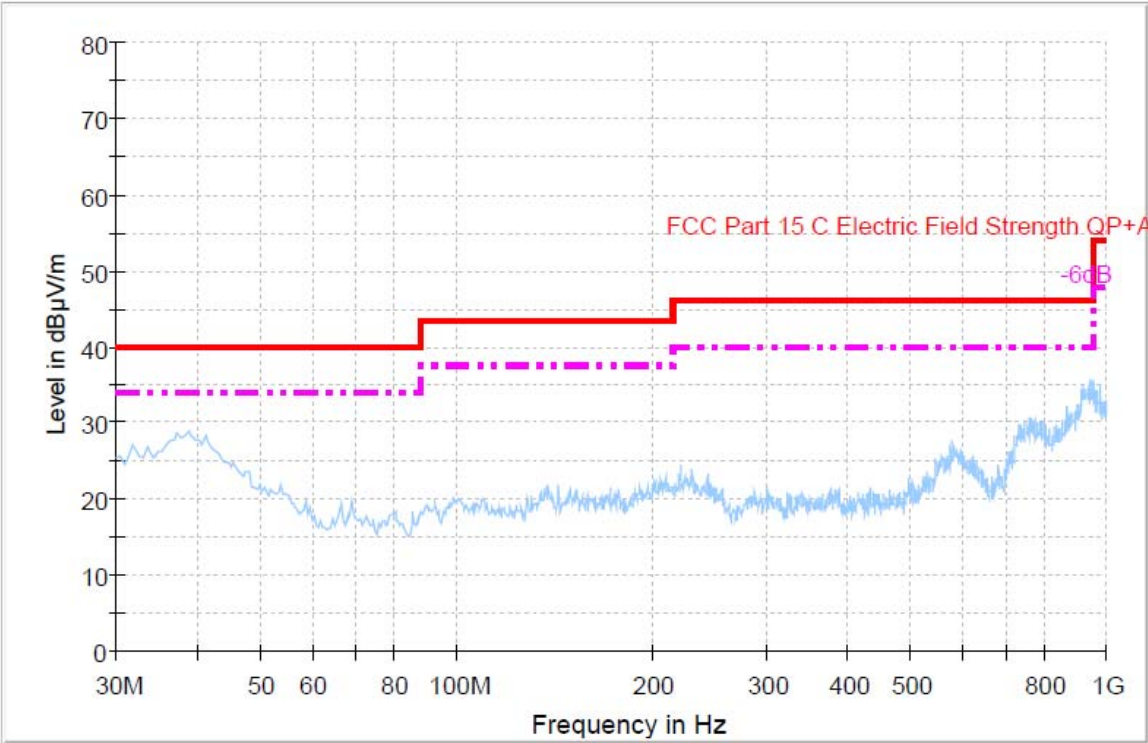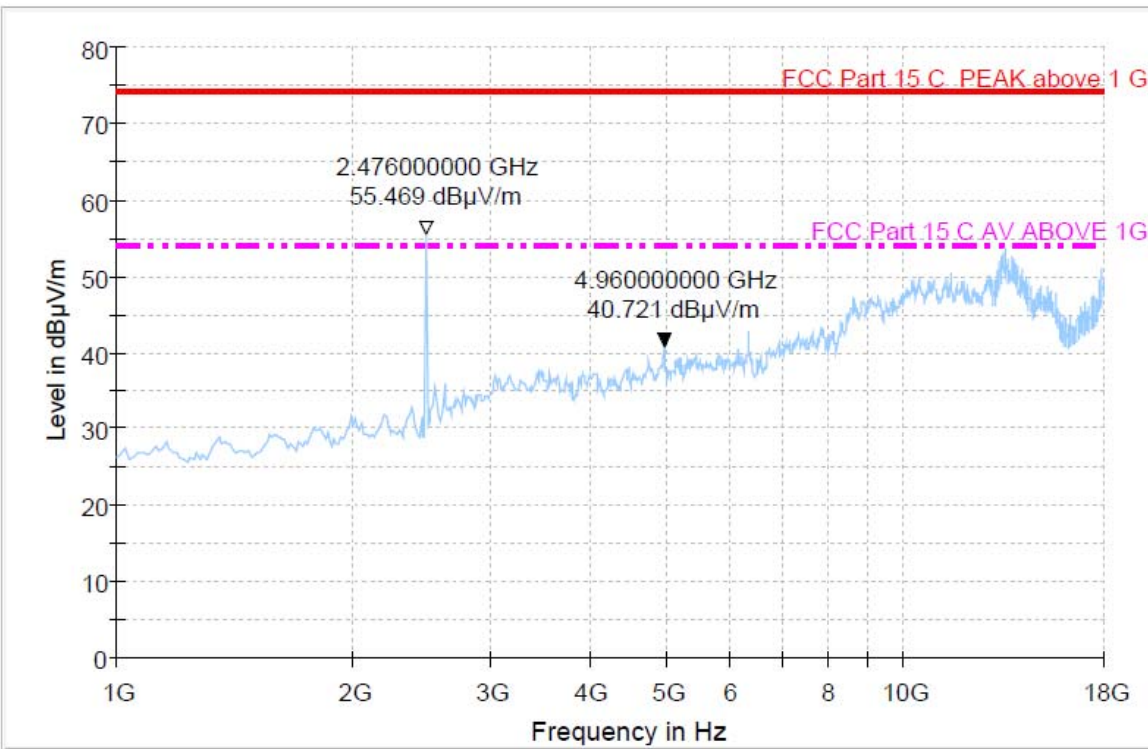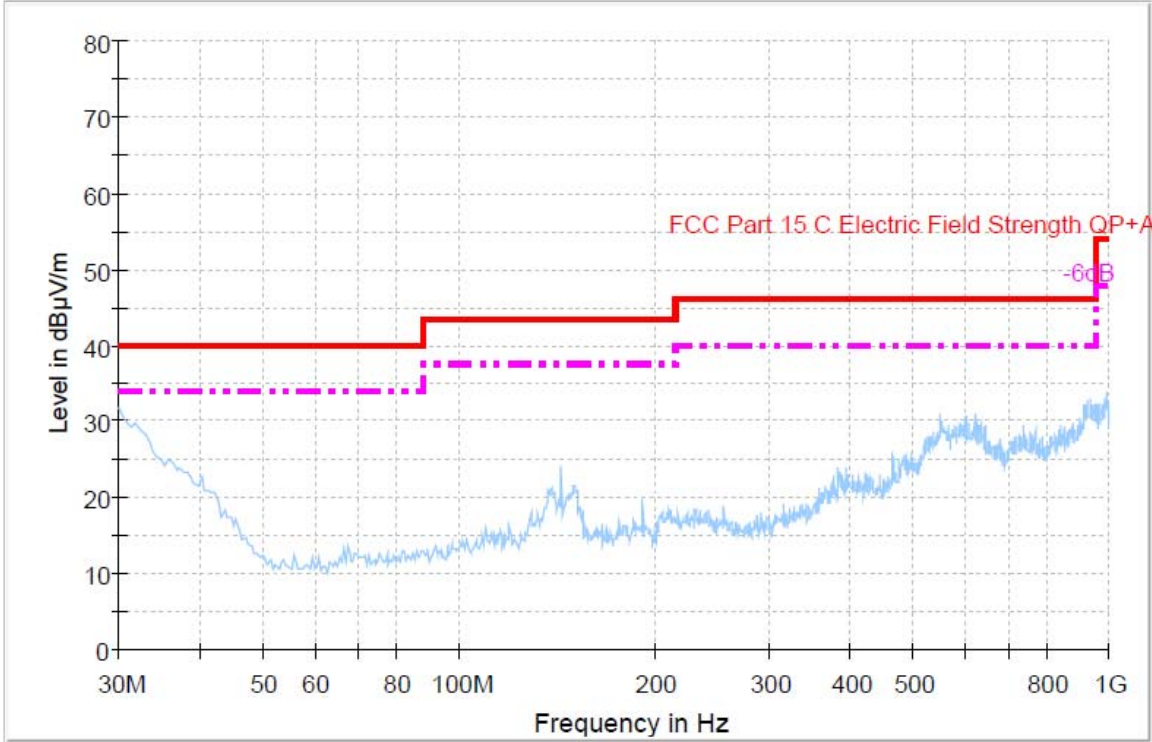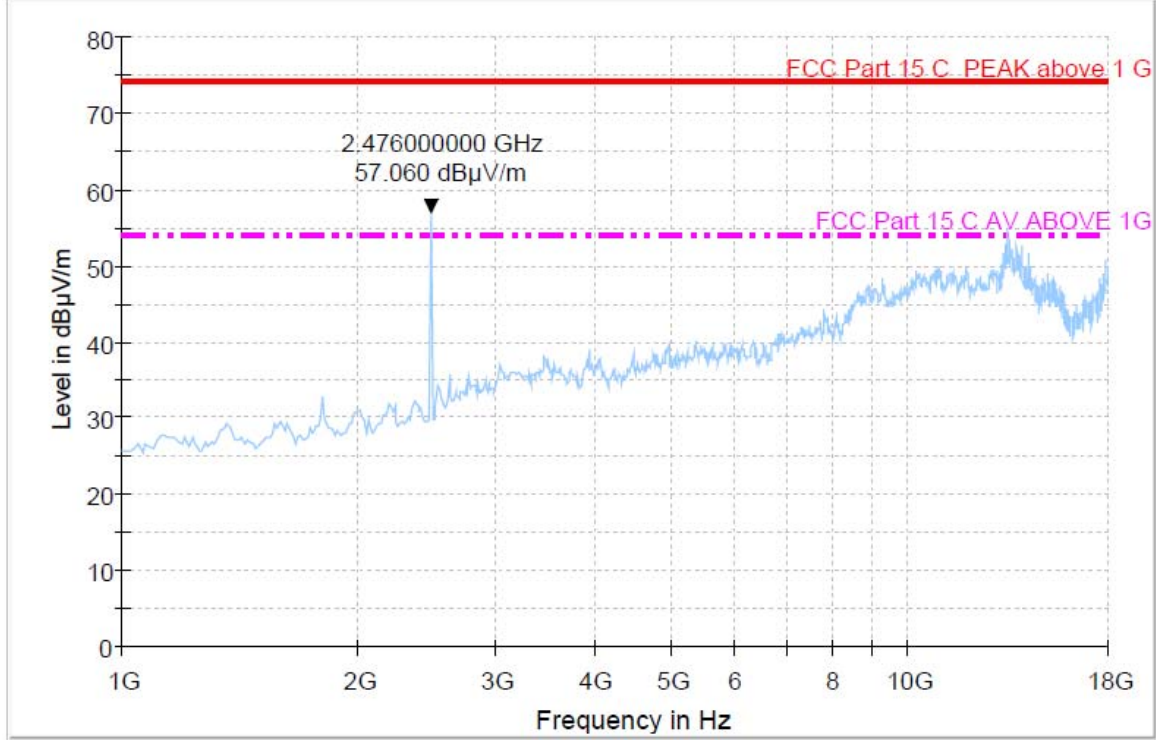

Radiated Emission 1GHz-18GHz Horizontal

3.9.7 Radiated Emission Measurement Results (18GHz-25GHz)

Test Engineer :	Hogan. He	Temperature :	23℃~26℃
		Relative Humidity :	40%~60%

Frequency (MHz)	Level (dBuV)	Over Limit (dB)	Limit Line (dBuV)	Remark
-	-	-	-	See Note

Notes:

The amplitude of radiated emissions that are attenuated by more than 20dB below the permissible value has no need to be reported. The measurement performed at 1meter distance from turn table to antenna.

3.10 Antenna Requirements

3.10.1 Standard Applicable

If directional gain of transmitting antennas is greater than 6dBi, the power shall be reduced by the same level in dB comparing to gain minus 6dBi. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the FCC rule.

3.10.2 Antenna Connected Construction

The antennas type used in this product is PIFA Antenna without connector and it is considered to meet antenna requirement.

3.10.3 Antenna Gain

The antenna peak gain of EUT is less than 6 dBi. Therefore, it is not necessary to reduce maximum peak output power limit.

4   List of Measuring Equipment

| No	Instrument/Ancillary	Provider	Type/Model	Cal. Date
01	Base Station	Agilent	E5515C	2011.12.14
02	Spectrum Analyzer	R&S	FSP30(9kHz~30GHz)	2011.07.19
03	Loop Antenna	Schwarzbeck	FMZB1516	2012.01.07
04	Antenna	Schwarzbeck	VULB9165(30M-1G)	2011.11.09
05	Antenna	R&S	HF906(1G-18G)	2011.08.10
06	Antenna	Schwarzbeck	BBHA 9170 (15G-26.5G)	2011.11.09
07	High Pass Filter	R&S	System Integrated	2011.11.14
08	Thermal chamber	Hitachi	EC- 85MHP	2011.12.25
09	Pre-Amplifier	R&S	Pre-Amp	2012.1.18
10	Helical Antenna	ETS	3102 (1G-10G)	NCR
11	Power Meter	R&S	NRP(10MHz~8GHz)	2011.12.05
12	Relay Switch	R&S	TS-REMI	NCR

5   Uncertainty Evaluation

### 5.1   Ucertainty of Radiated Spurious Emission evaluation (30MHz~1GHz)

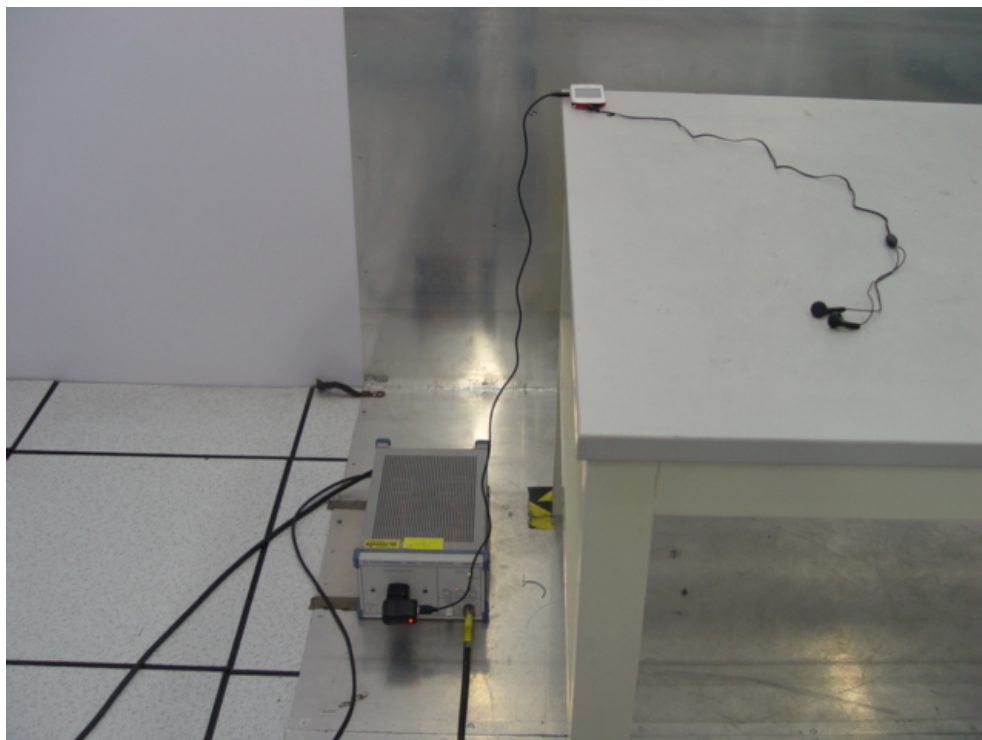| Radiated Spurious Emission Measurement Uncertainty Evaluation					
Contribution		Probability Distribution	Partition Coefficient	u(xi)	
				Horizontal 30-1000MHz	Vertical 30-1000MHz
Cable Loss Calibration	U01	U-Shape	1.41	0.17	0.17
Sine wave voltage accuracy of Spectrum analyzer	U02	Triangle	2.45	0.82	0.82
Impulse response of spectrum analyzer	U03	Triangle	2.45	0.61	0.61
Pulse repetition rate of spectrum analyzer	U04	Triangle	2.45	0.61	0.61
Spectrum analyzer noise level	U05	Normal	2.00	0.25	0.25
Measurement of the signal path mismatch	U06	U-Shape	1.41	0.13	0.13
Free-space antenna factor	U07	Normal	2.00	1.00	1.00
Antenna Factor Interpolation for Frequency	U08	Rectangular	1.73	0.17	0.17
Antenna factor with height in the correlation	U09	Rectangular	1.73	0.17	0.17
Measurement antenna and the absorbing material in the image of the mutual coupling effect	U10	Rectangular	1.73	0.50	0.50
Antenna phase center variation	U11	Rectangular	1.73	0.58	0.58
Antenna cross polarization response	U12	Rectangular	1.73	0.52	0.52
Antenna imbalance	U13	Rectangular	1.73	0.52	0.52
Test distance error	U14	Rectangular	1.73	0.17	0.17
Desktop terrain clearance variation	U15	Normal	2.00	0.05	0.05
Random uncertainty	U16	Standard deviation	1.00	0.20	0.19
Pre-Amplifier gain Calibration	U17	U-Shape	1.41	0.13	0.13
Combined Standard Uncertainty Uc(y)	Uc	Normal	1.00	1.95	1.95
Measuring Uncertainty for a level of Confidence of 95%(U= 2Uc(y))	U=kUc	Normal	2	3.90	3.89

5.2 Ucertainty of Radiated Spurious Emission evaluation (1GHz~26.5GHz)

Radiated Spurious Emission Measurement Uncertainty Evaluation					
Contribution		Probability Distribution	Partition Coefficient	u(xi)	
				Horizontal 1-25GHz	Vertical 1-25GHz
Cable Loss Calibration	U01	U-Shape	1.41	0.17	0.17
Sine wave voltage accuracy of Spectrum analyzer	U02	Triangle	2.45	0.82	0.82
Impulse response of spectrum analyzer	U03	Triangle	2.45	0.61	0.61
Pulse repetition rate of spectrum analyzer	U04	Triangle	2.45	0.61	0.61
Spectrum analyzer noise level	U05	Normal	2.00	0.25	0.25
Measurement of the signal path mismatch	U06	U-Shape	1.41	0.13	0.13
Free-space antenna factor	U07	Normal	2.00	1.00	1.00
Antenna Factor Interpolation for Frequency	U08	Rectangular	1.73	0.17	0.17
Antenna factor with height in the correlation	U09	Rectangular	1.73	NA	NA
Measurement antenna and the absorbing material in the image of the mutual coupling effect	U10	Rectangular	1.73	0.50	0.50
Antenna phase center variation	U11	Rectangular	1.73	0.58	0.58
Antenna cross polarization response	U12	Rectangular	1.73	0.52	0.52
Antenna imbalance	U13	Rectangular	1.73	0.52	0.52
Test distance error	U14	Rectangular	1.73	0.17	0.17
Desktop terrain clearance variation	U15	Normal	2.00	0.05	0.05
Random uncertainty	U16	Standard deviation	1.00	0.22	0.23
Pre-Amplifier gain Calibration	U17	U-Shape	1.41	0.13	0.13
Combined Standard Uncertainty Uc(y)	Uc	Normal	1.00	1.94	1.94
Measuring Uncertainty for a level of Confidence of 95%(U= 2Uc(y))	U=kUc	Normal	2	3.89	3.89

APPENDIX B. SETUP PHOTOGRAPHS

FCC Part15C Radiated Emission Plot between 9 kHz ~ 30MHz

- Front
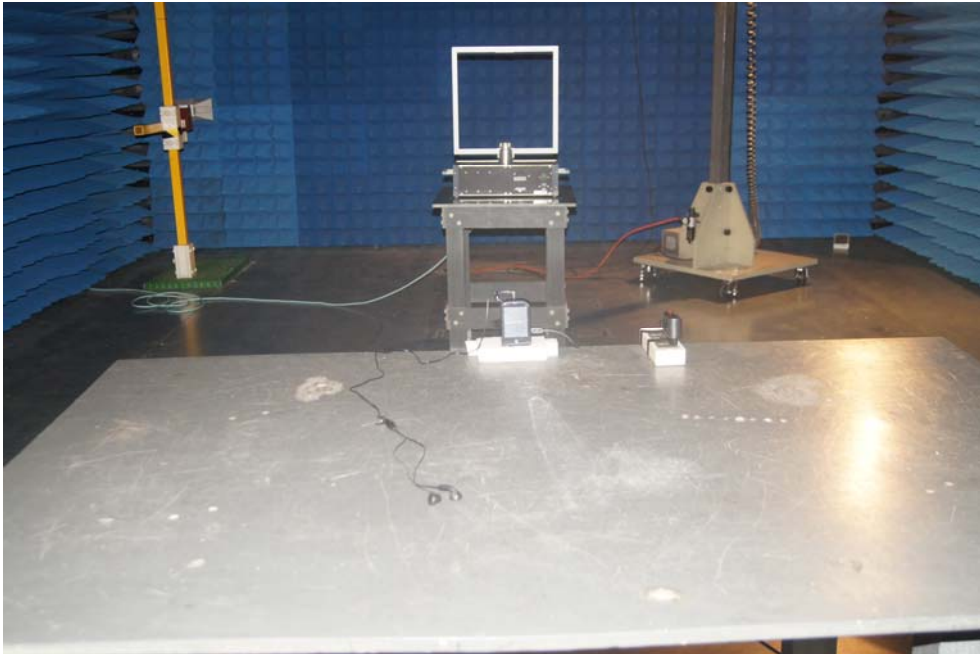
-Rear

FCC Part15C Radiated Emission below 1GHz

 - Front
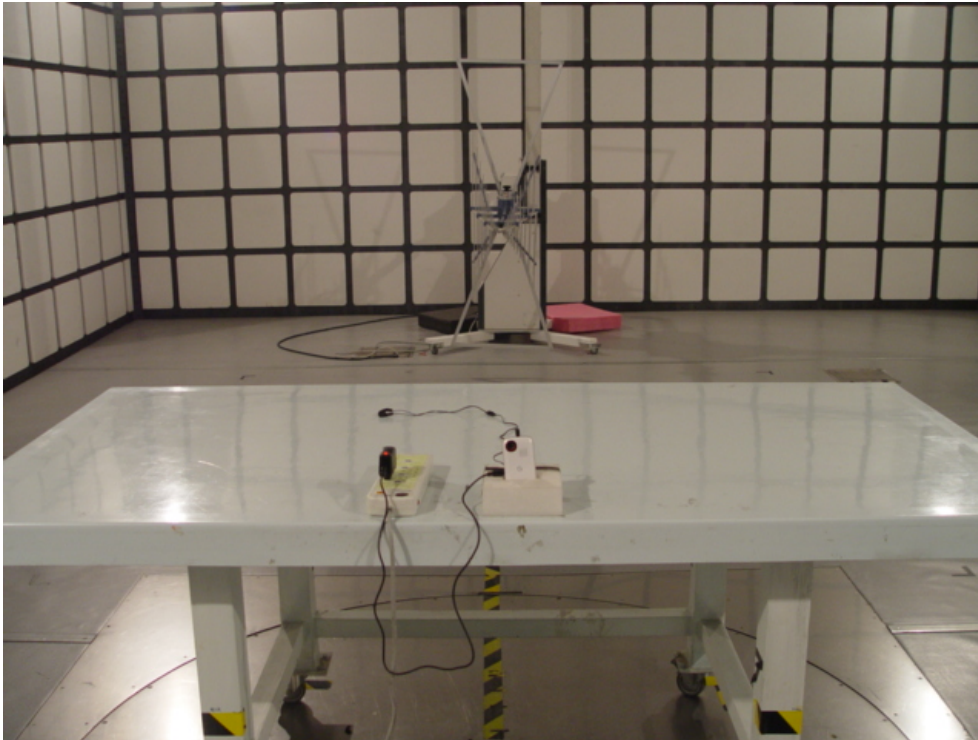
-Rear
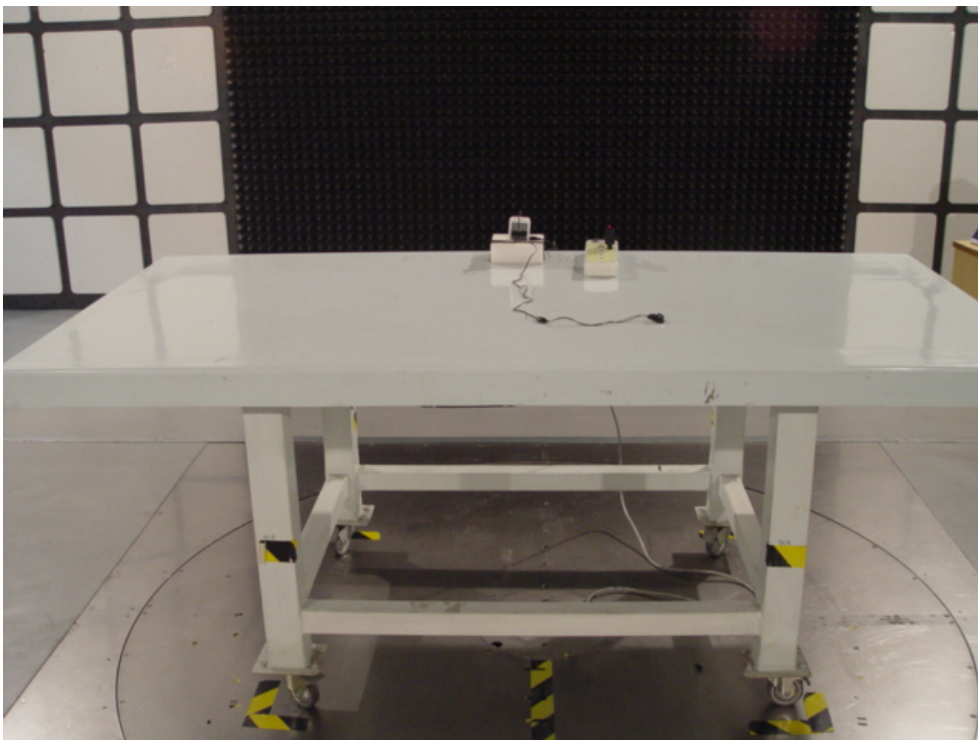
FCC Part15C Radiated Emission above 1GHz

-Front
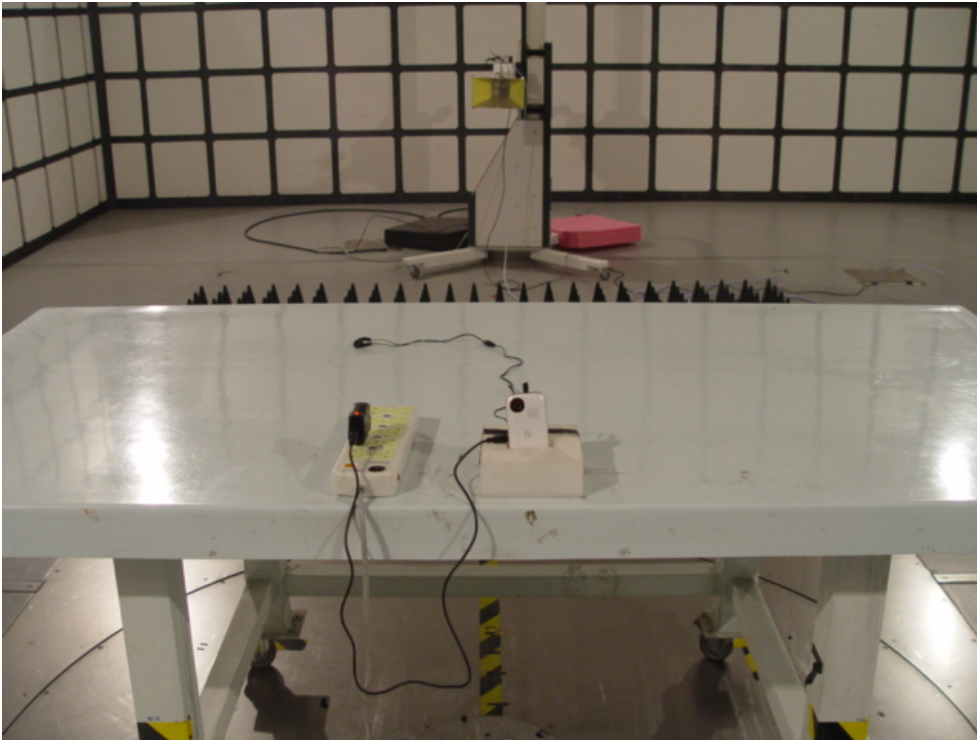
-Rear
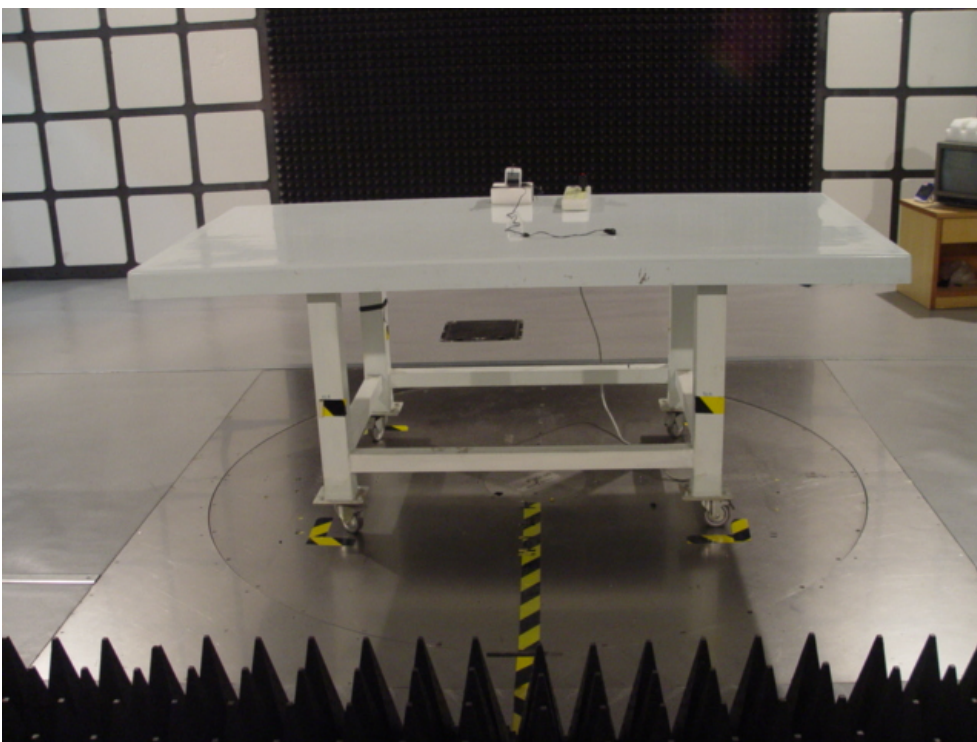
AC Conducted Emission Test Setup

END.