FCC Test Report

FCC Part 15 Subpart C §15.247

Product Name	:	GSM 850/1900 GPRS\WIFI\BT Mobile Phone
Model No.	:	A1650
FCC ID	:	T38PCD1650

Prepared By:	:	Inventec Appliances(Pudong) Corporation
Address:	:	No.789 Pu Xing Road,Shanghai,PRC
Date of Receipt	:	2012.06.29
Date of Test	:	2012.07.02-2012.07.04
Report No.	:	20120629FCC-B

Test Report Certification

Date of Issue : Jul.10.2012

Report No. : 20120629FCC-B

Product Name	:	GSM 850/1900 GPRS\WIFI\BT Mobile Phone
Model No.	:	A1650
Trade Name	:	Claro; PCD
Applicant	:	Cellon Communications Technology (Shenzhen) Co.,Ltd.
Address	:	13/F, Skyworth C Building, Gaoxin S.Ave1, Hi-Tech Industrial Park, Nanshan District,
Standard	:	FCC Part 15 Subpart C §15.247
Classification	:	Bluetooth: Digital Spread Spectrum (DSS)
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 : _____ , Jul.10.2012
Judy Ge/Engineer

Tested By : _____ , Jul.10.2012
Alice Lee/Engineer

Approved By : _____ , Jul.10.2012
Jeff Huang/Director of Operations

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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: Cellon Communications Technology (Shenzhen) Co.,Ltd.

Address: 13/F, Skyworth C Building, Gaoxin S.Ave1, Hi-Tech Industrial Park, Nanshan District,

1.2 Manufacturer

Company Name: Cellon Communications Technology (Shenzhen) Co.,Ltd.

Address: 13/F, Skyworth C Building, Gaoxin S.Ave1, Hi-Tech Industrial Park, Nanshan District,

1.3 Feature of Equipment Under Test

Product Feature & Specification	
Equipment	GSM 850/1900 GPRS\WIFI\BT Mobile Phone
Brand Name	Claro; PCD
Model Name	A1650
FCC ID	T38PCD1650
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： 0.77（dBm）
Antenna Type	Fixed Internal Antenna
HW Version	P3
SW Version	A1650_02.04_6D0109_71021_ST_024_024
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 Spread Spectrum(DSS).
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	-2.11	-2.88	-2.93
Ch39	2441MHz	0.18	-0.54	-0.61
Ch78	2480MHz	**0.77**	0.08	0.10

Remark:

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

2.2 Test Modes

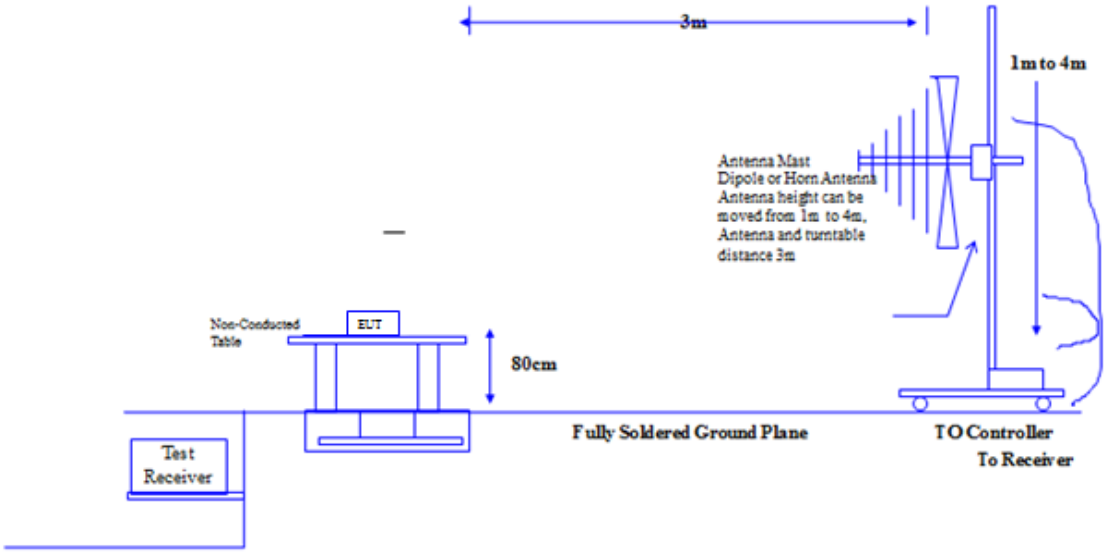
The EUT has been associated with peripherals pursuant to ANSI C63.4-2003 and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: conducted emission (150 kHz to 30 MHz), radiated emission (30MHz to the 10th harmonic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

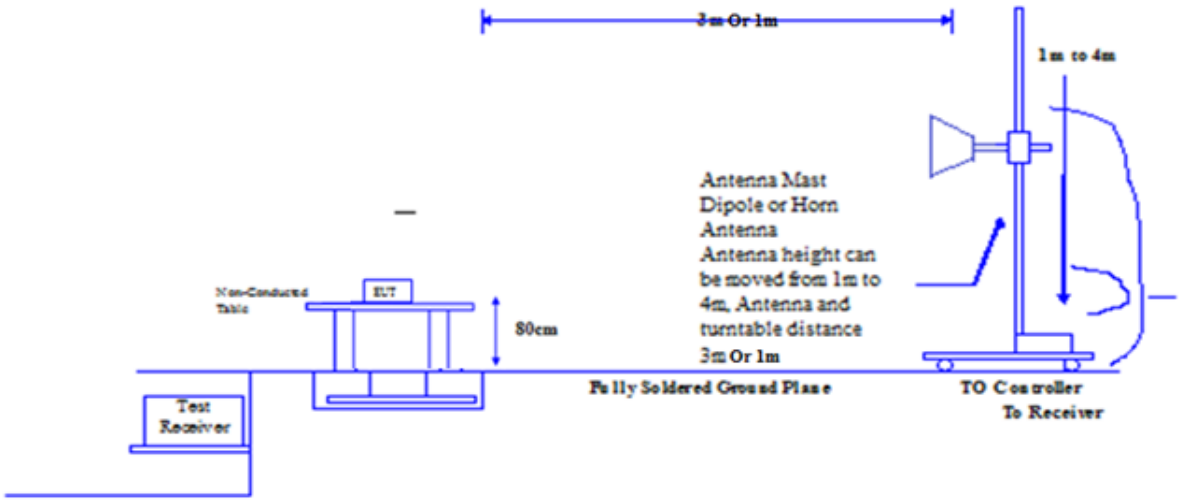
Test Cases			
	Data Rate / Modulation		
Test Item	**Bluetooth 1Mbps GFSK**	**Bluetooth EDR 2Mbps π /4-DQPSK**	**Bluetooth EDR 3Mbps 8-DPSK**
Conducted TCs	Mode 1: CH00_2402 MHz Mode 2: CH39_2441 MHz Mode 3: CH78_2480 MHz	Mode 4: CH00_2402 MHz Mode 5: CH39_2441 MHz Mode 6: CH78_2480 MHz	Mode 7: CH00_2402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

2.3 Connection Diagram of Test System

30MHz~1GHz



Above 1GHz



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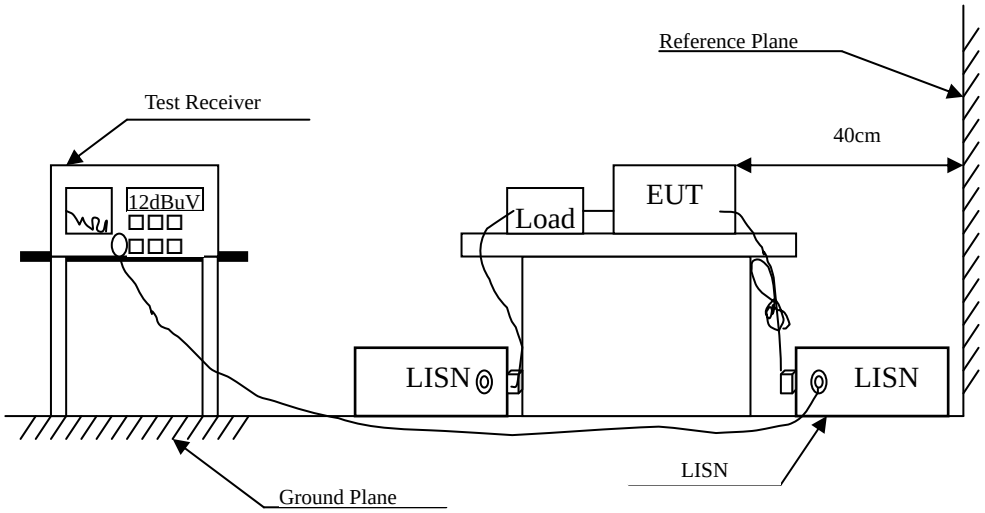


3. Test Result

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.

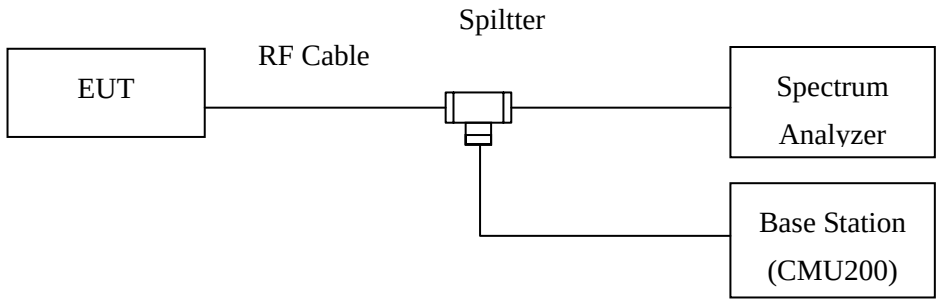
3.1.2 Measuring Instruments

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 ≥ 1% of the span; VBW ≥ 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

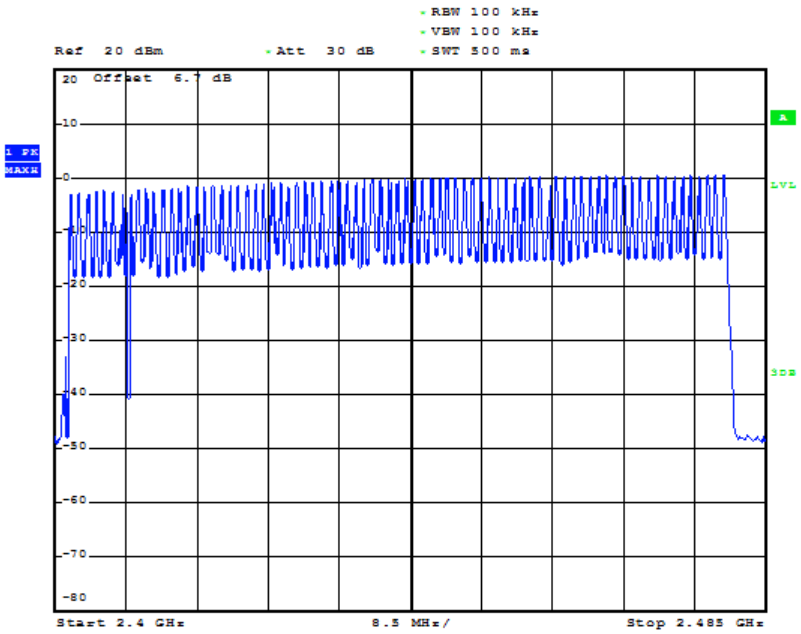


3.1.5 Test Result of Number of Hopping Frequency

Test Mode :	Mode 1~3	Temperature :	23℃~26℃
Test Engineer :	Hogan He	Relative Humidity :	35%~60%

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

Number of Hopping Channel Plot on Channel 00 - 78

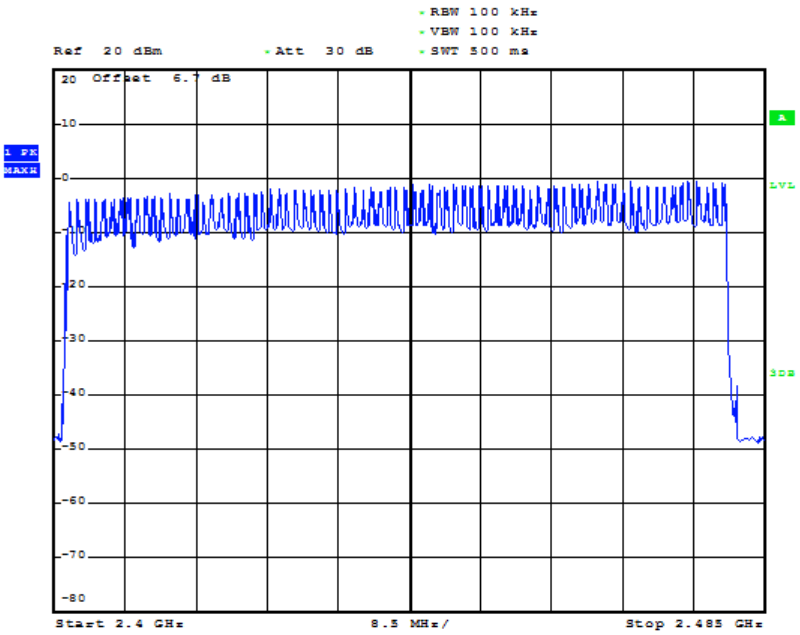


Date: 2.JUL.2012 08:12:59

Test Mode :	Mode 4~6	Temperature :	23℃~26℃
Test Engineer :	Hogan He	Relative Humidity :	35%~60%

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

Number of Hopping Channel Plot on Channel 00 - 78



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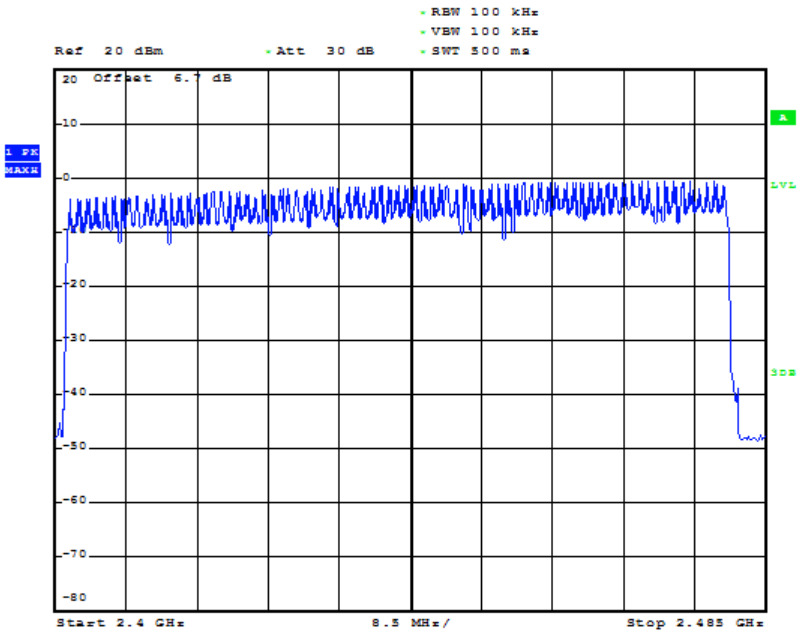
Test Mode :	Mode 7~9	Temperature :	23℃~26℃
Test Engineer :	Hogan He	Relative Humidity :	35%~60%

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

Number of Hopping Channel Plot on Channel 00 - 78



3.2 20dB and 99% Bandwidth Measurement

3.2.1 Limit of 20dB Bandwidth

N/A

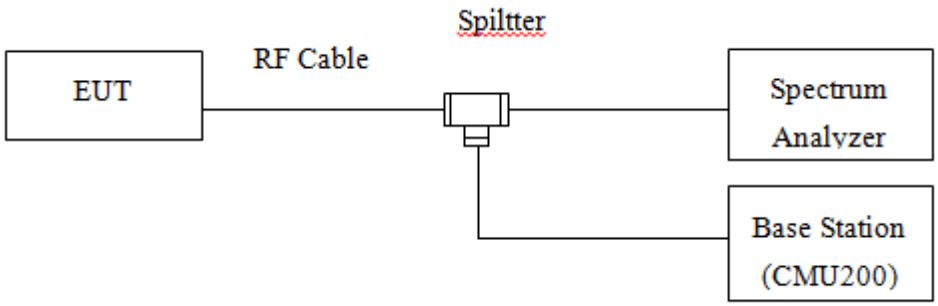
3.2.2 Measuring Instruments

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 ≥ 1% of the 20 dB bandwidth; VBW ≥ 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

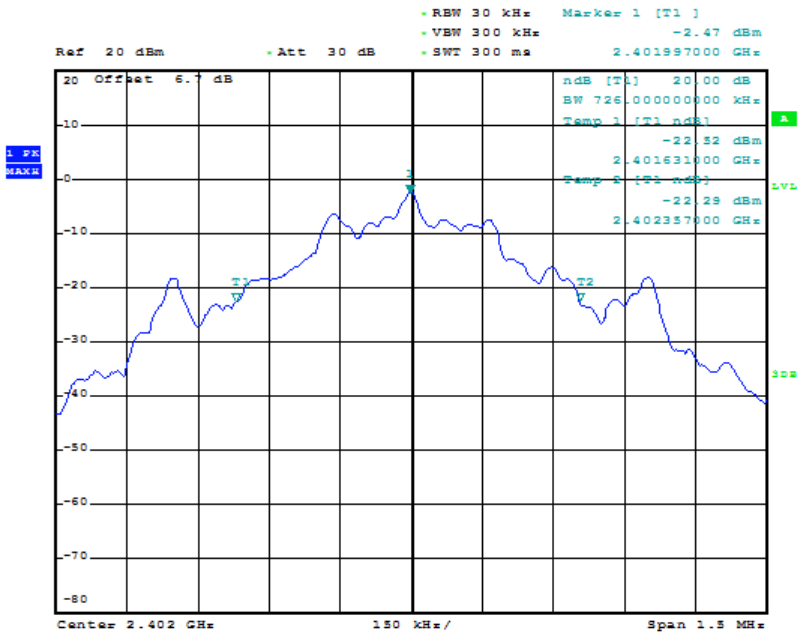


3.2.5 Test Result of 20dB Bandwidth

Test Mode :	Mode 1,2,3	Temperature :	23℃~26℃
Test Engineer :	Hogan He	Relative Humidity :	35%~60%

Channel	Frequency (MHz)	20dB Bandwidth (MHz)
00	2402	0.726
39	2441	0.723
78	2480	0.735

20 dB Bandwidth Plot on Channel 00



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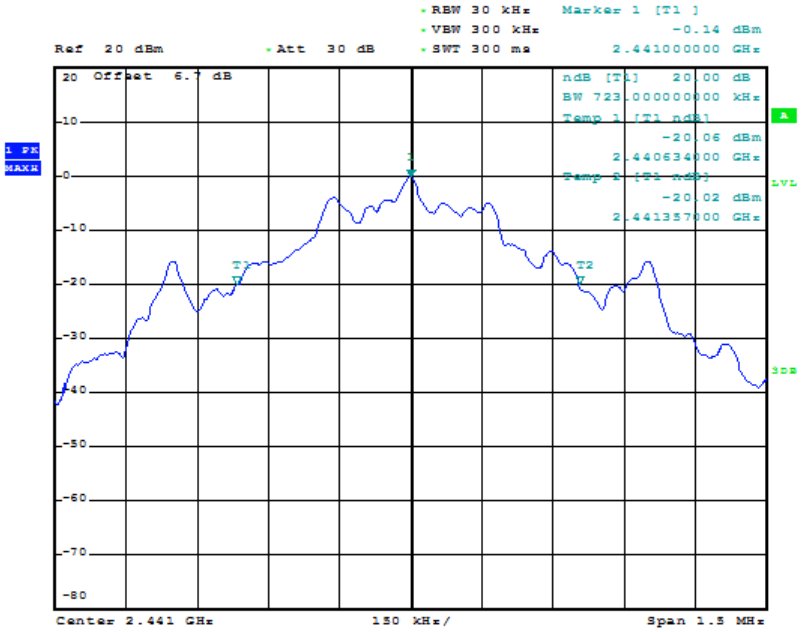
20 dB Bandwidth Plot on Channel 39



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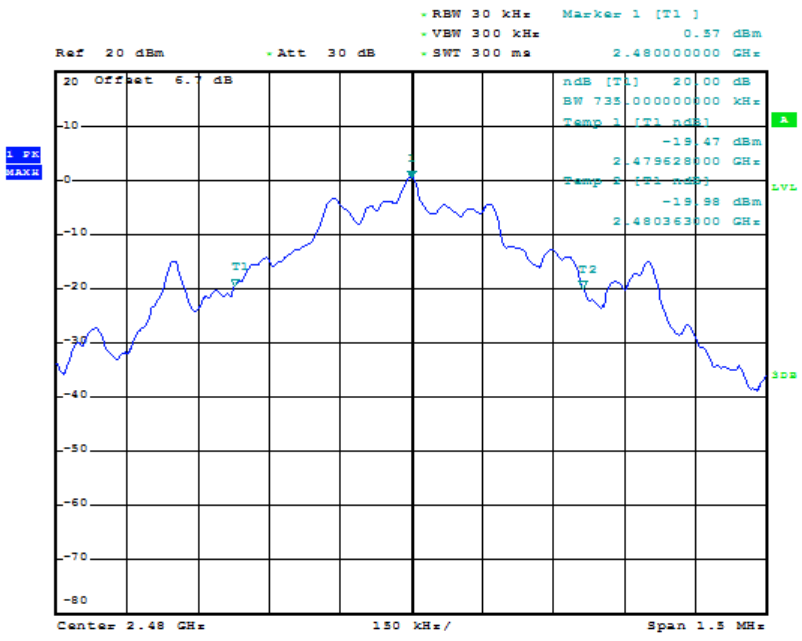
20 dB Bandwidth Plot on Channel 78



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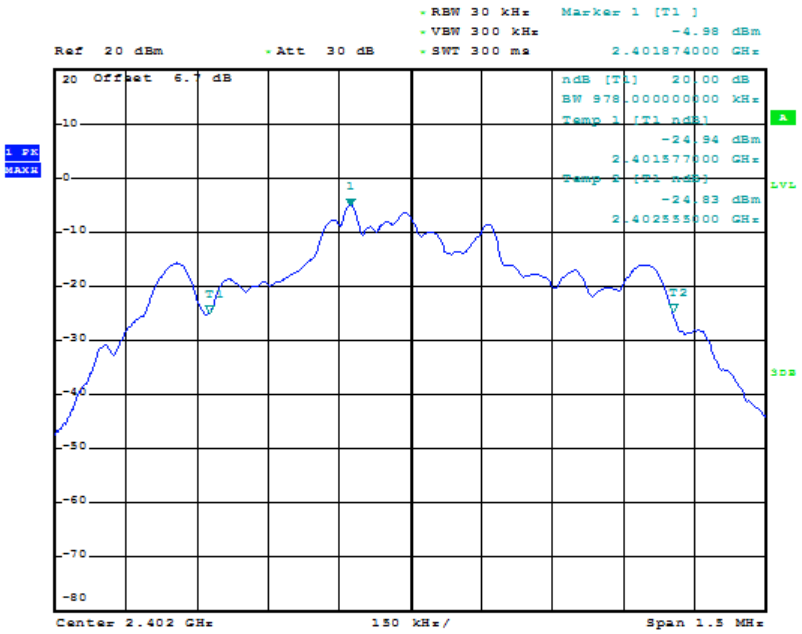
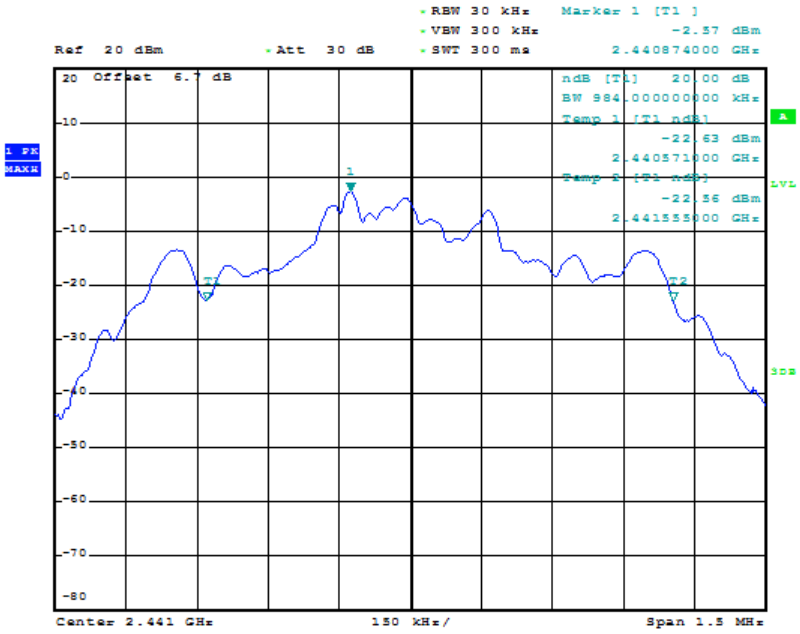
Test Mode :	Mode 4,5,6	Temperature :	23℃~26℃
Test Engineer :	Hogan He	Relative Humidity :	35%~60%

Channel	Frequency (MHz)	20dB Bandwidth (MHz)
00	2402	0.978
39	2441	0.984
78	2480	0.975

20 dB Bandwidth Plot on Channel 00

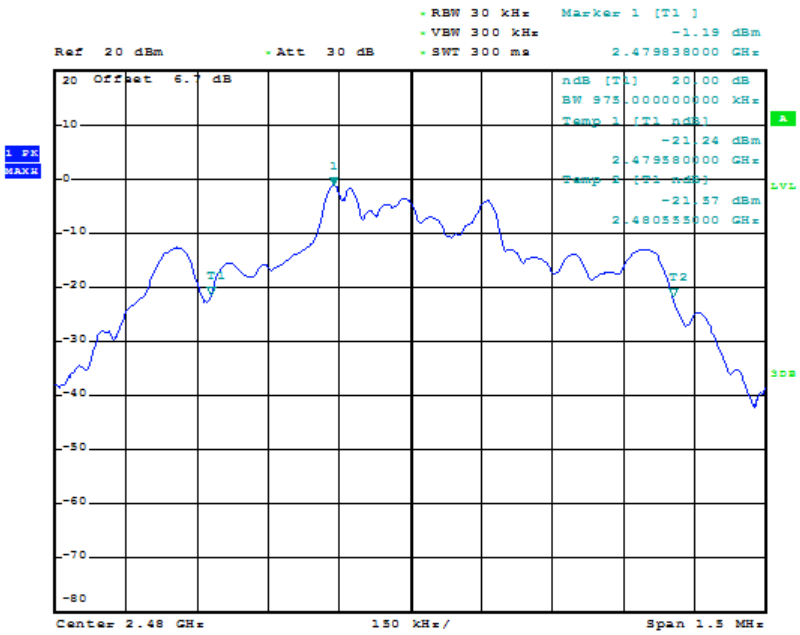


20 dB Bandwidth Plot on Channel 39



Date: 2.JUL.2012 08:48:59

20 dB Bandwidth Plot on Channel 78

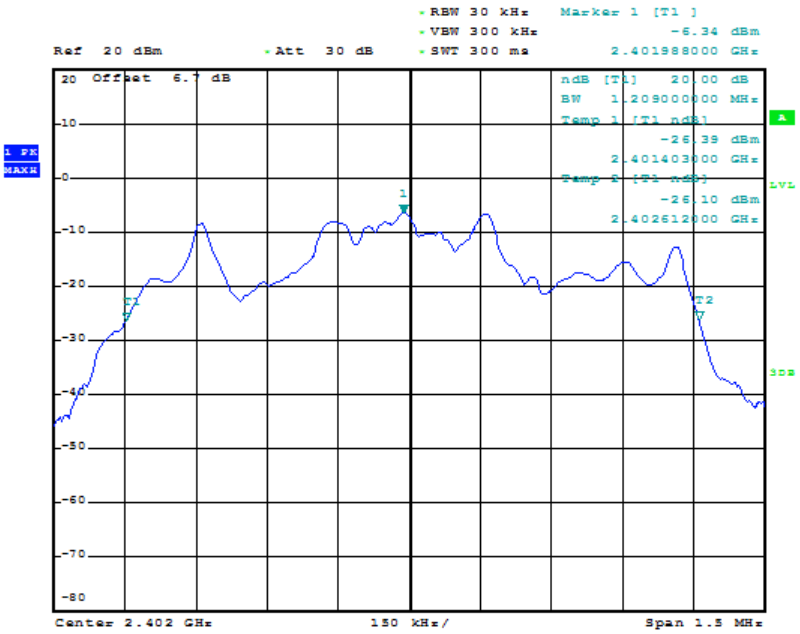


Date: 2.JUL.2012 08:48:30

Test Mode :	Mode 7,8,9	Temperature :	23℃~26℃
Test Engineer :	Hogan He	Relative Humidity :	35%~60%

Channel	Frequency (MHz)	20dB Bandwidth (MHz)
00	2402	1.209
39	2441	1.212
78	2480	1.215

20 dB Bandwidth Plot on Channel 00



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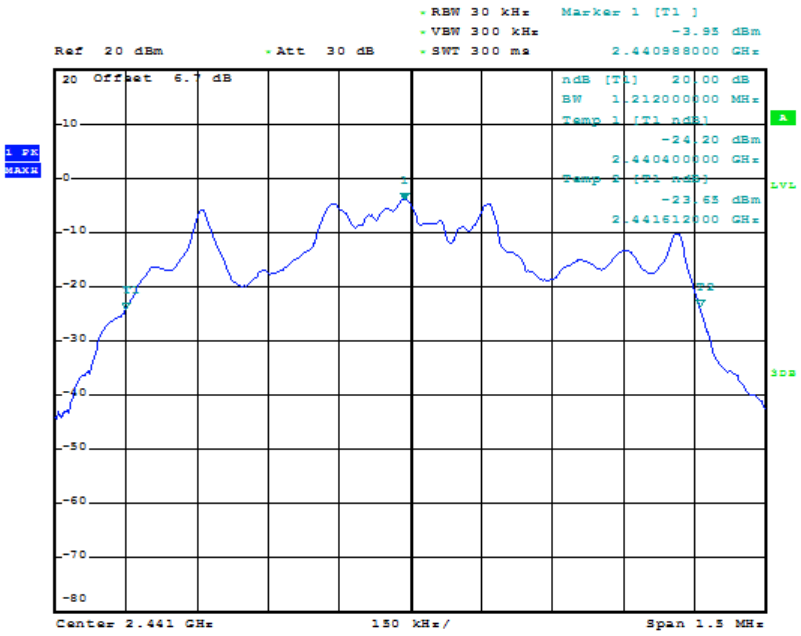
20 dB Bandwidth Plot on Channel 39



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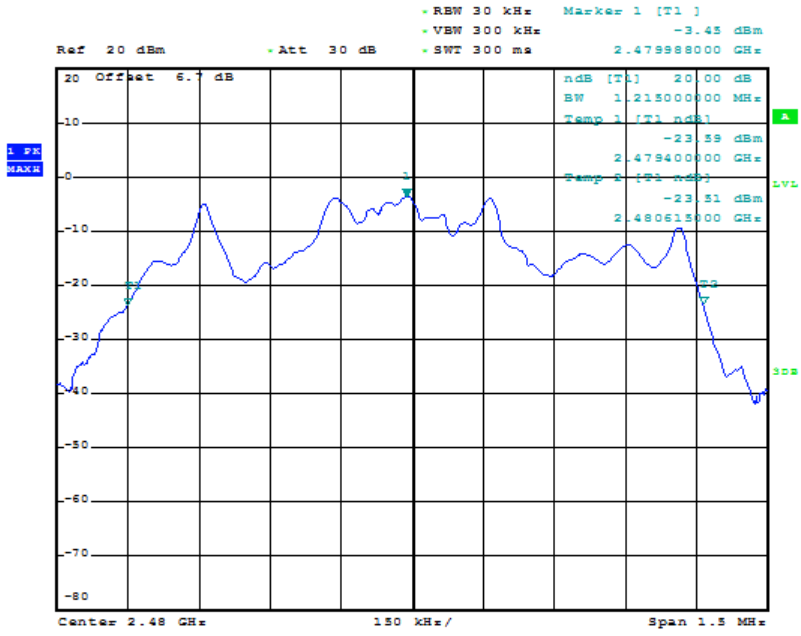
20 dB Bandwidth Plot on Channel 78



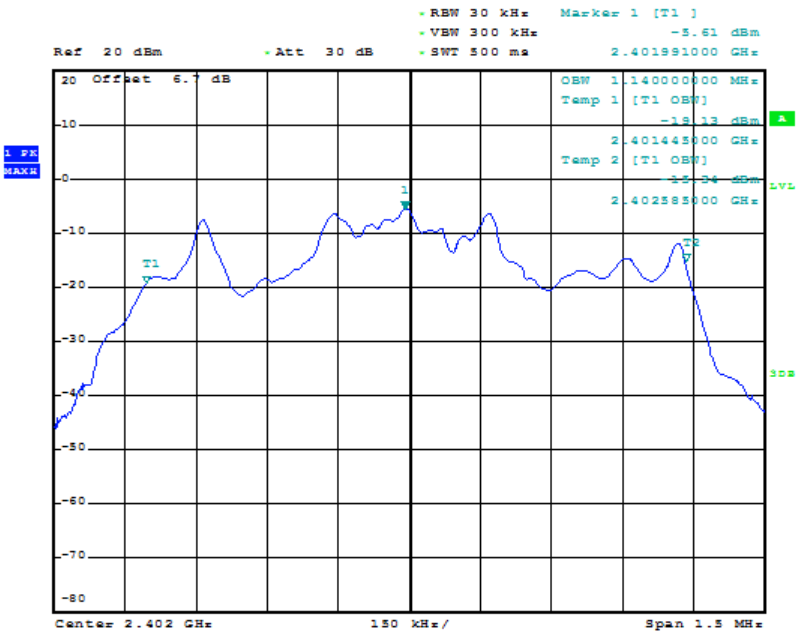
Date: 2.JUL.2012 08:51:02

3.2.6 Test Result of 99% Occupied Bandwidth

Test Mode :	Mode 1,2,3	Temperature :	23℃~26℃
Test Engineer :	Hogan He	Relative Humidity :	35%~60%

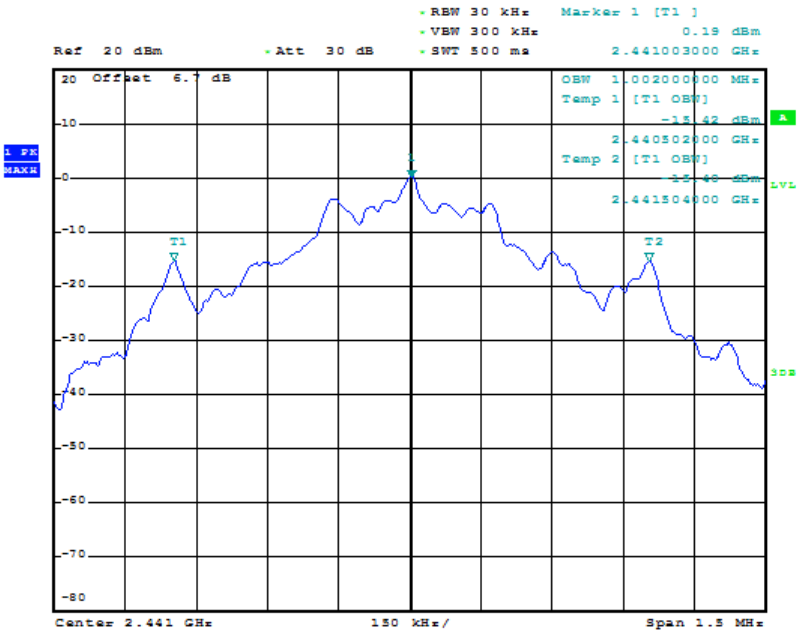
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
00	2402	1.140
39	2441	1.002
78	2480	1.002

99% Bandwidth Plot on Channel 00



Date: 3.JUL.2012 02:14:42

99% Occupied Bandwidth Plot on Channel 39



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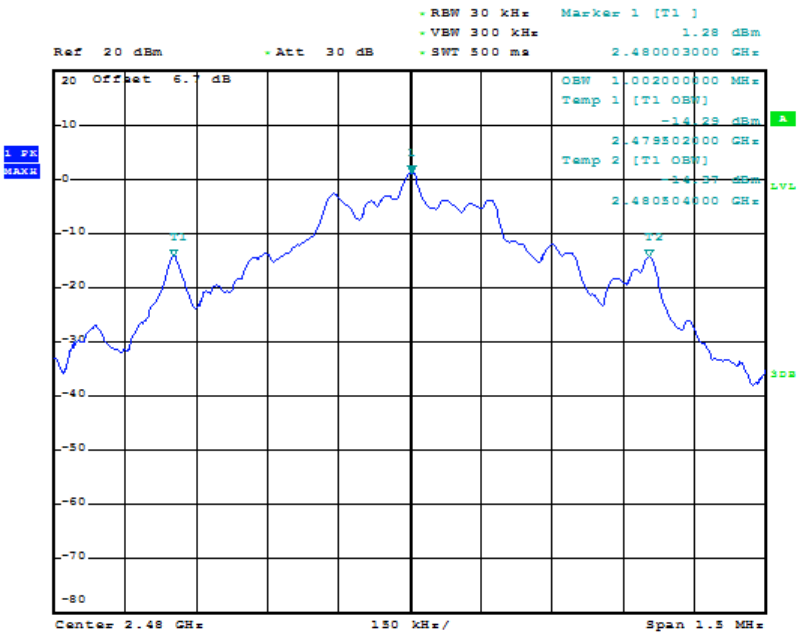
99% Occupied Bandwidth Plot on Channel 78

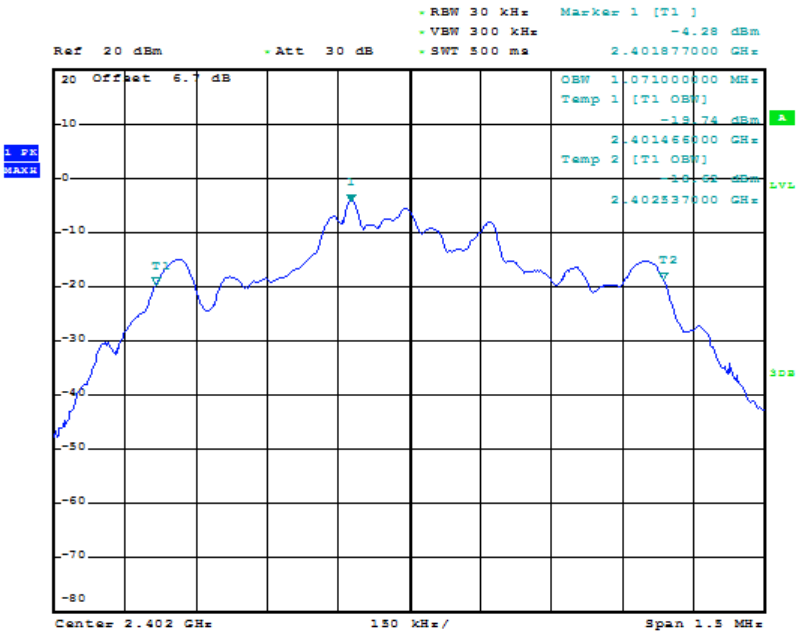


Date: 3.JUL.2012 02:16:05

Test Mode :	Mode 4,5,6	Temperature :	23℃~26℃
Test Engineer :	Hogan He	Relative Humidity :	35%~60%

Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
00	2402	1.071
39	2441	1.071
78	2480	1.065

99% Bandwidth Plot on Channel 00



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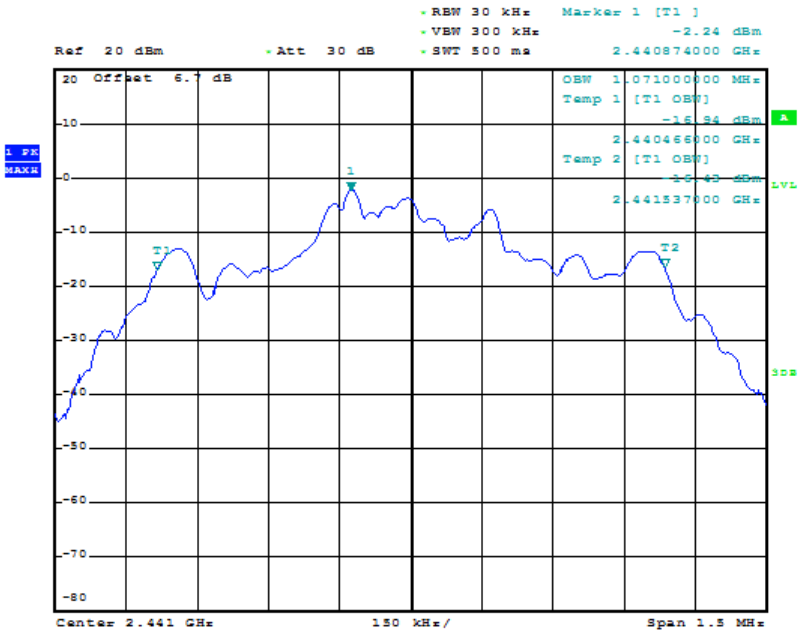
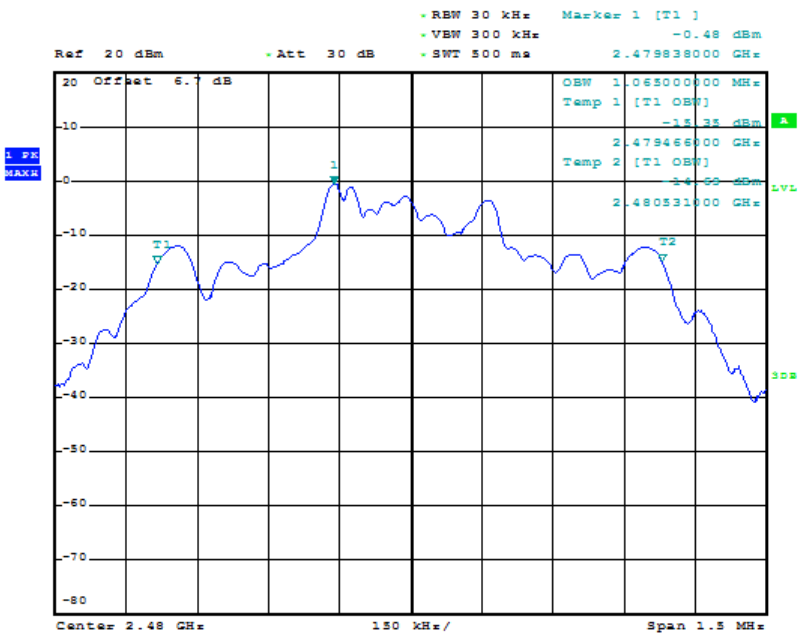
99% Occupied Bandwidth Plot on Channel 39



Date: 3.JUL.2012 02:17:36

99% Occupied Bandwidth Plot on Channel 78

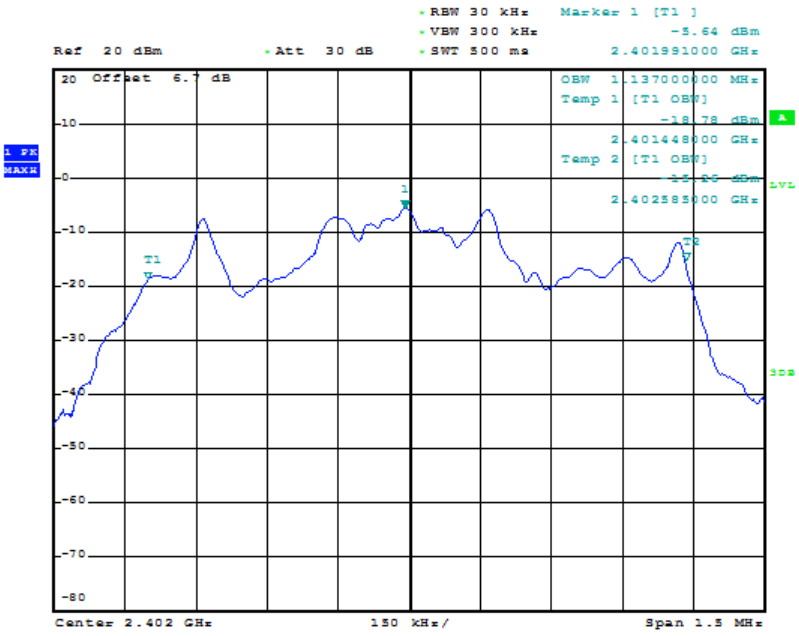


Date: 3.JUL.2012 02:17:04

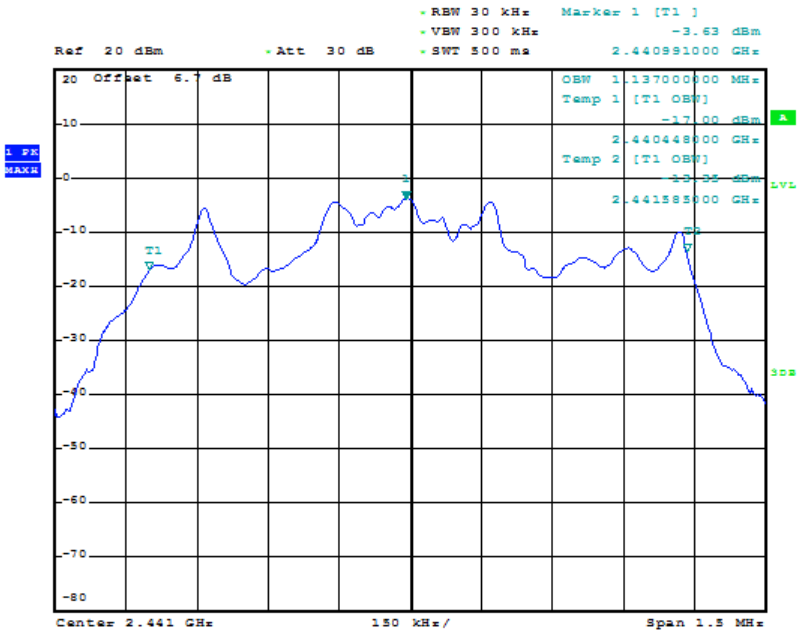
Test Mode :	Mode 7,8,9	Temperature :	23℃~26℃
Test Engineer :	Hogan He	Relative Humidity :	35%~60%

Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
00	2402	1.137
39	2441	1.137
78	2480	1.137

99% Bandwidth Plot on Channel 00

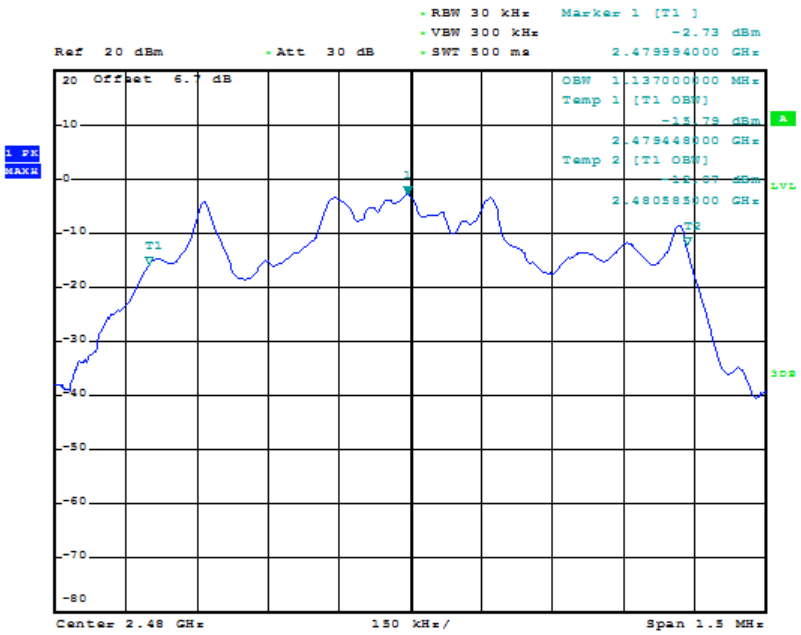


99% Occupied Bandwidth Plot on Channel 39



Date: 3.JUL.2012 02:20:35

99% Occupied Bandwidth Plot on Channel 78



Date: 3.JUL.2012 02:21:02

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.

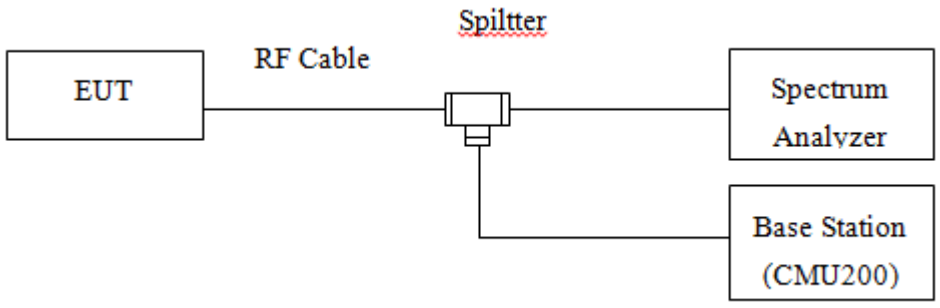
3.3.2 Measuring Instruments

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 ≥ 1% of the span;
   VBW ≥ 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

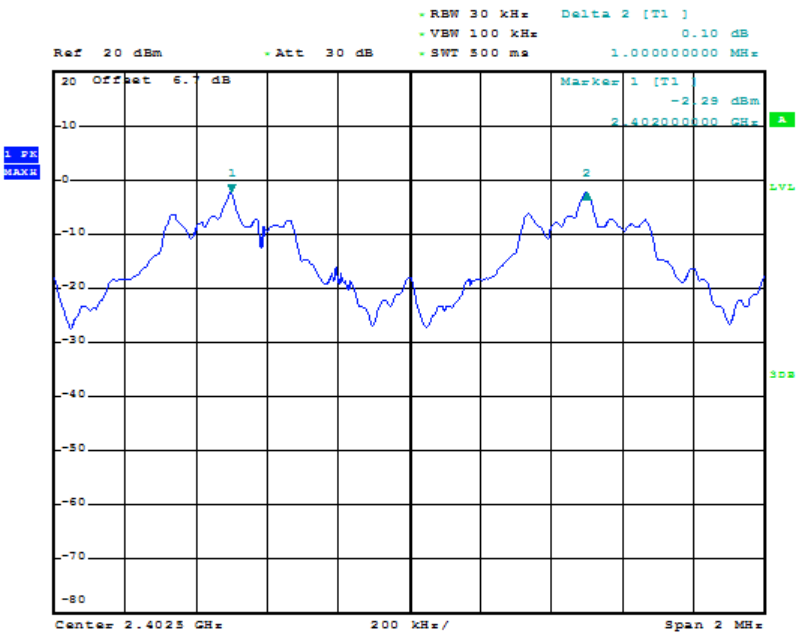


3.3.5 Test Result of Hopping Channel Separation

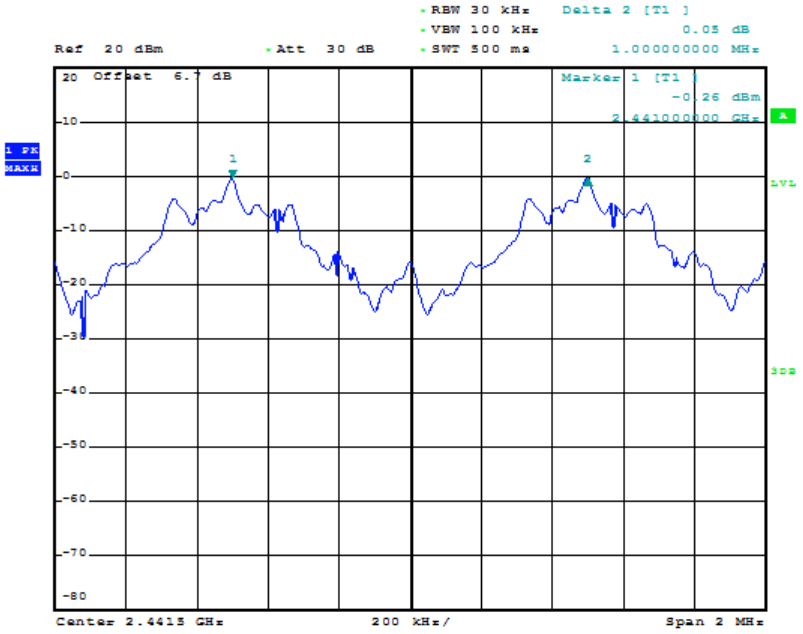
Test Mode :	Mode 1,2,3	Temperature :	23℃~26℃
Test Engineer :	Hogan He	Relative Humidity :	35%~60%

Channel	Frequency (MHz)	Frequency Separation (MHz)	(2/3 of 20dB BW) Limits (MHz)	Pass/Fail
00	2402	1.000	0.48	Pass
39	2441	1.000	0.48	Pass
78	2480	1.004	0.48	Pass

Channel Separation Plot on Channel 00 - 01



Channel Separation Plot on Channel 39 - 40



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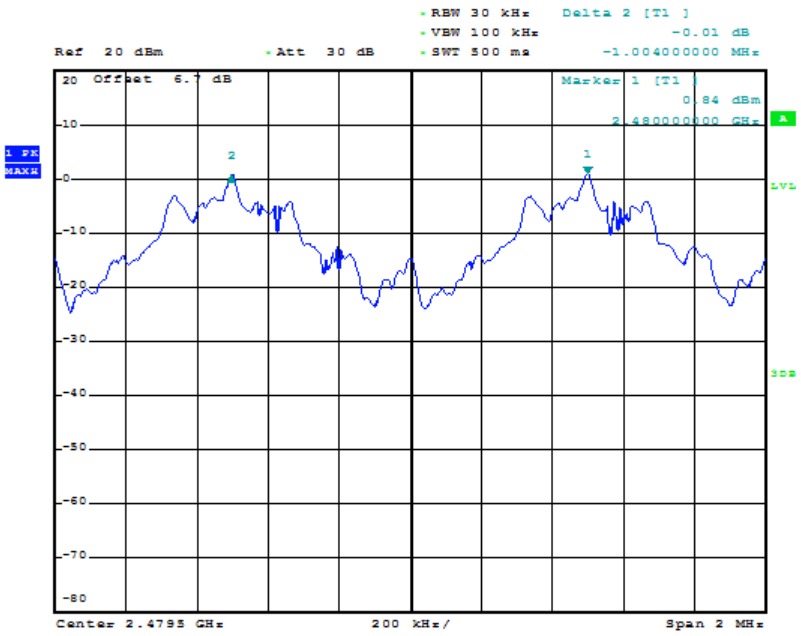
Channel Separation Plot on Channel 77 - 78

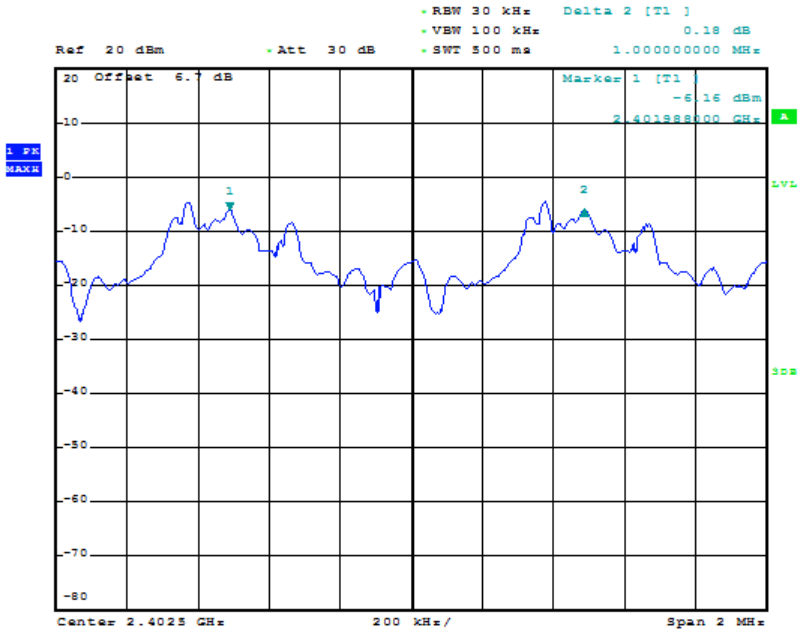


Date: 2.JUL.2012 09:19:47

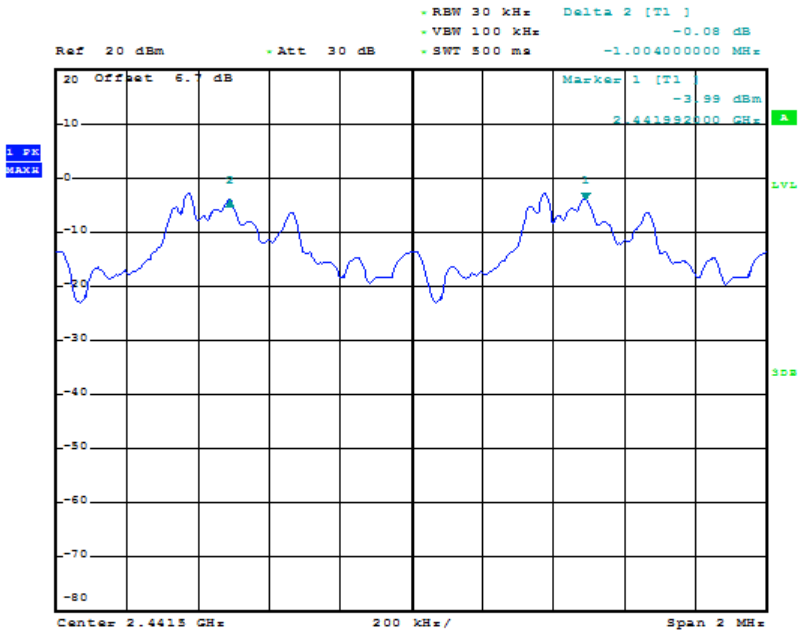
Test Mode :	Mode 4,5,6	Temperature :	23℃~26℃
Test Engineer :	Hogan He	Relative Humidity :	35%~60%

Channel	Frequency (MHz)	Frequency Separation (MHz)	(2/3 of 20dB BW) Limits (MHz)	Pass/Fail
00	2402	1.000	0.65	Pass
39	2441	1.004	0.65	Pass
78	2480	1.008	0.65	Pass

Channel Separation Plot on Channel 00 - 01

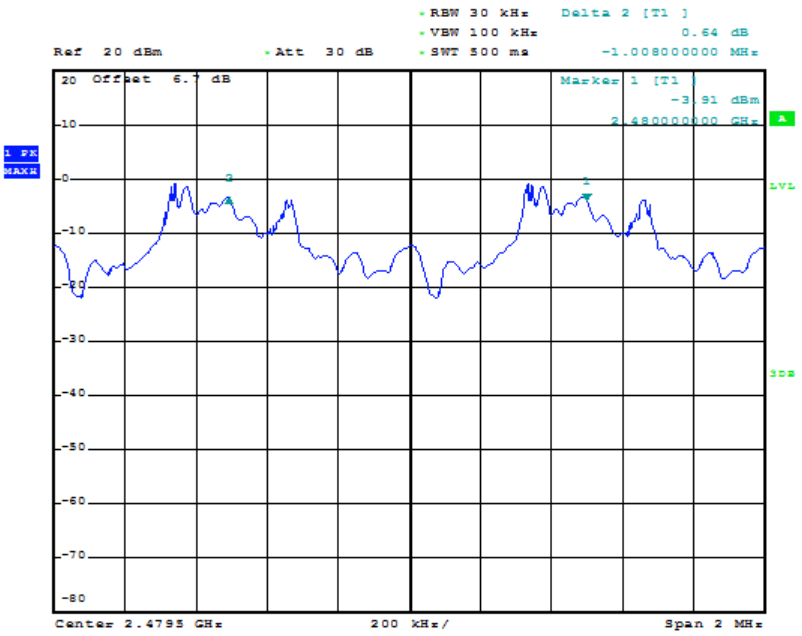


Channel Separation Plot on Channel 39 - 40



Date: 2.JUL.2012 09:32:56

Channel Separation Plot on Channel 77 - 78

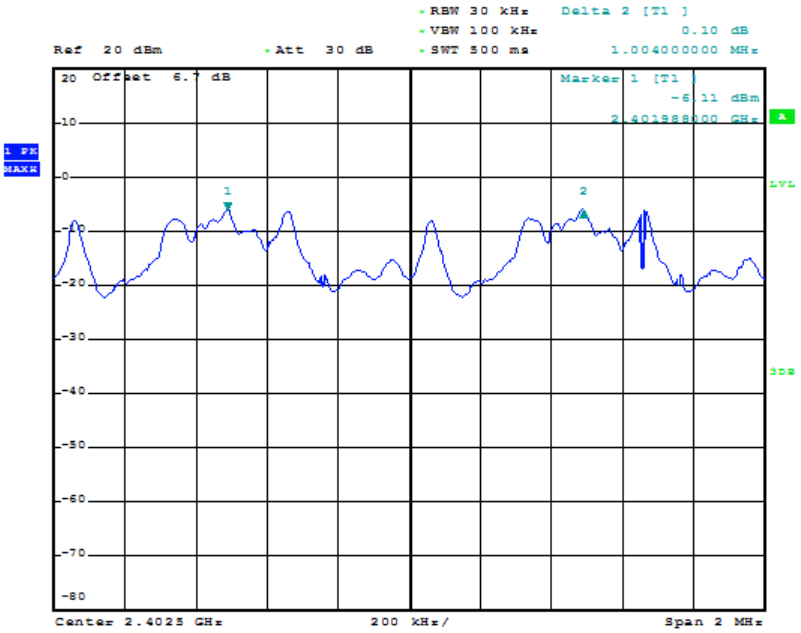


Date: 2.JUL.2012 09:26:25

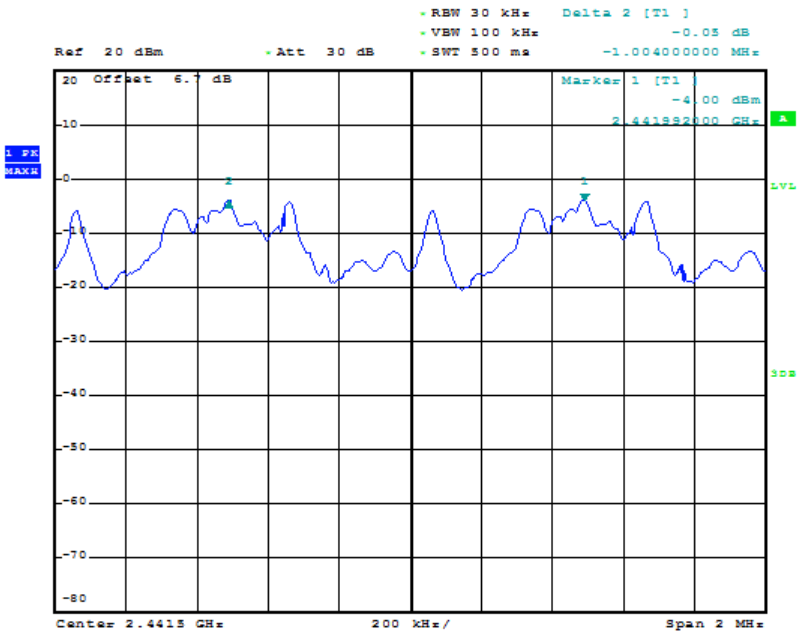
Test Mode :	Mode 7,8,9	Temperature :	23℃~26℃
Test Engineer :	Hogan He	Relative Humidity :	35%~60%

Channel	Frequency (MHz)	Frequency Separation (MHz)	(2/3 of 20dB BW) Limits (MHz)	Pass/Fail
00	2402	1.004	0.81	Pass
39	2441	1.004	0.81	Pass
78	2480	1.012	0.81	Pass

Channel Separation Plot on Channel 00 - 01

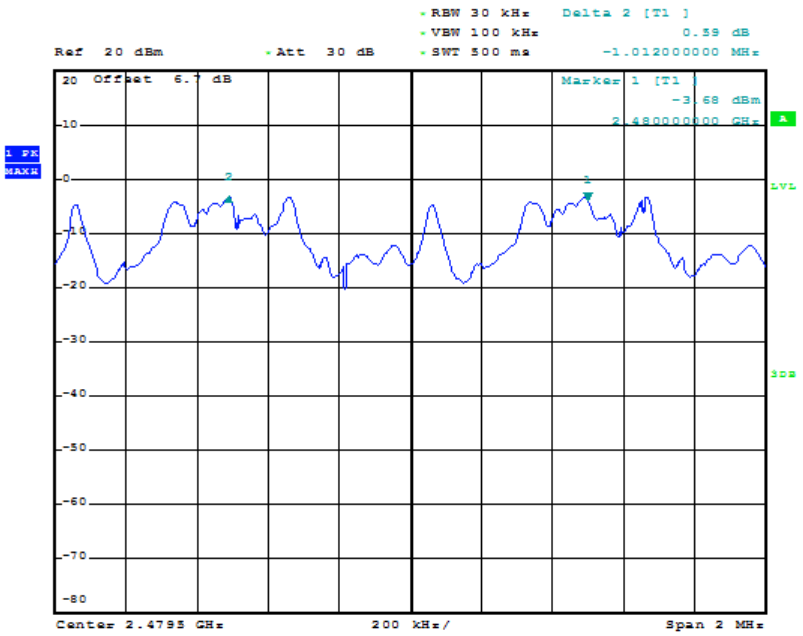


Channel Separation Plot on Channel 39 - 40



Date: 2.JUL.2012 09:58:48

Channel Separation Plot on Channel 77 - 78



Date: 2.JUL.2012 10:04:40

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.

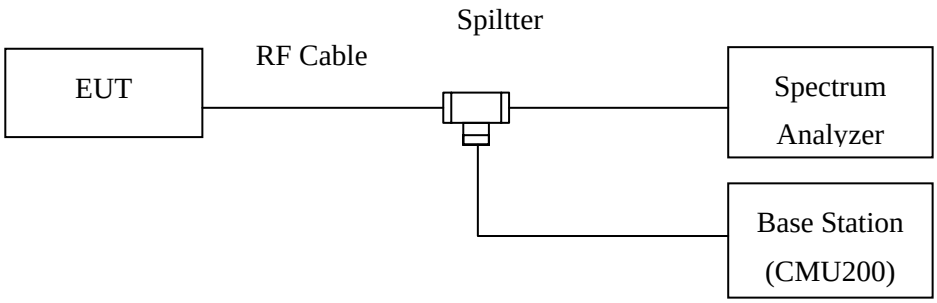
3.4.2 Measuring Instruments

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 ≥ 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 :	35%~60%

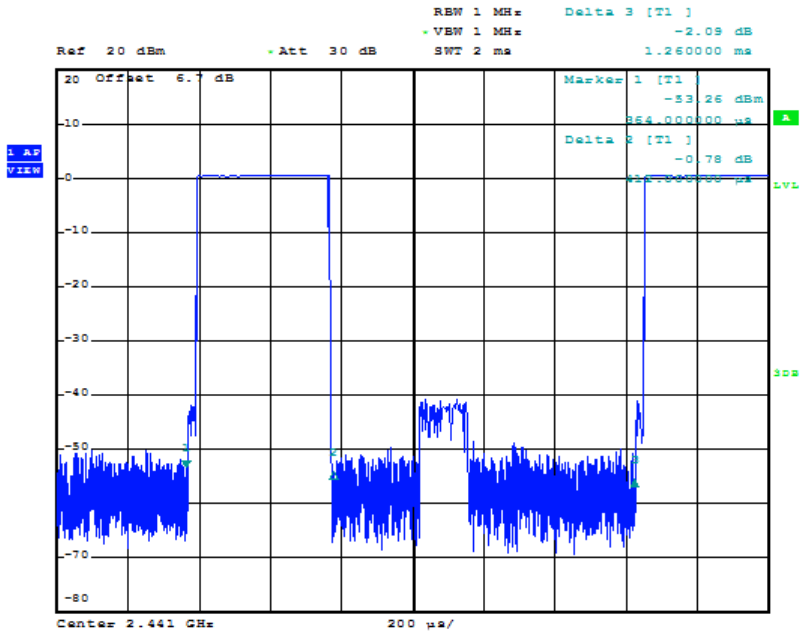
Package Mode	Average Hopping Channel	Package Transfer Time (usec)	Dwell Time (sec)	Limits (sec)	Pass/Fail
DH1	10.1	412	0.131	0.4	Pass
DH3	5.1	1674	0.269	0.4	Pass
DH5	3.4	2940	0.316	0.4	Pass

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)

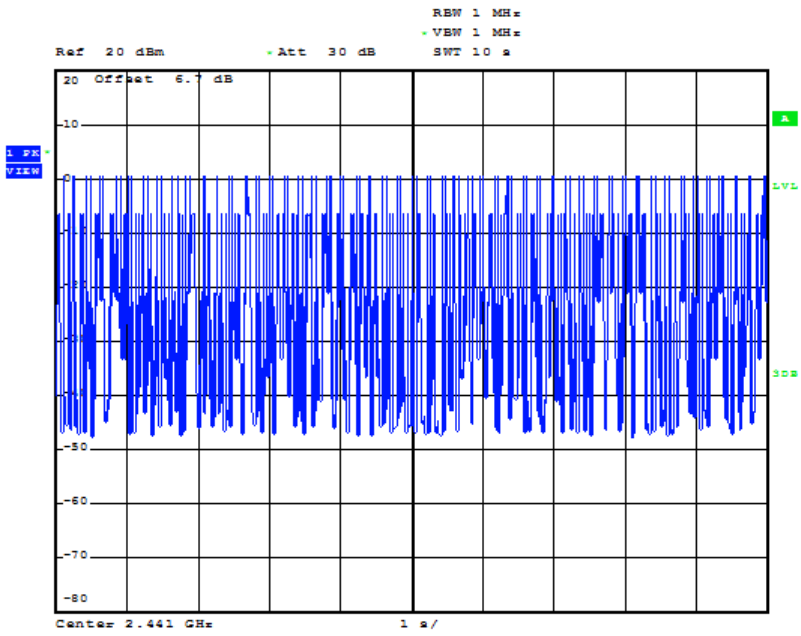
GFSK：

DH1 Dwell Time (One Pulse) Plot on Channel 39



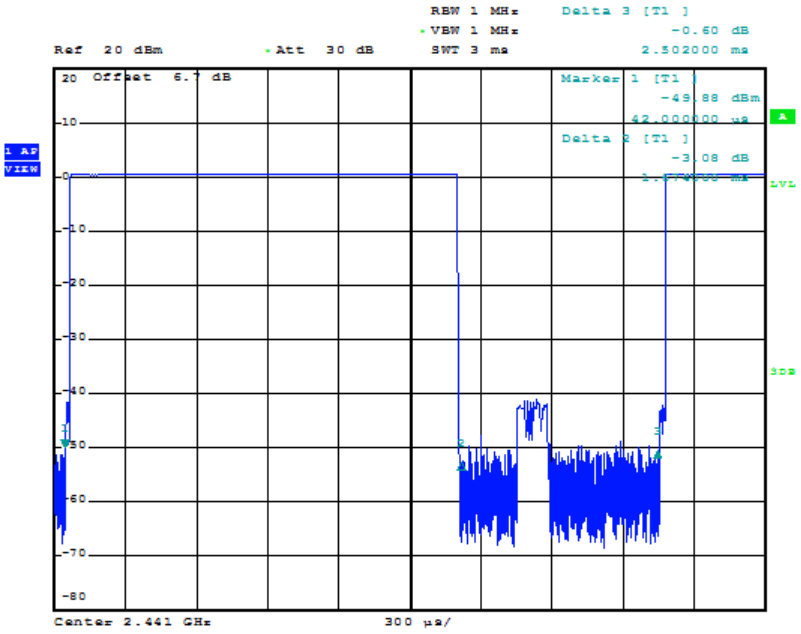
Date: 3.JUL.2012 02:25:10

DH1 Dwell Time (Count Pulses) Plot on Channel 39



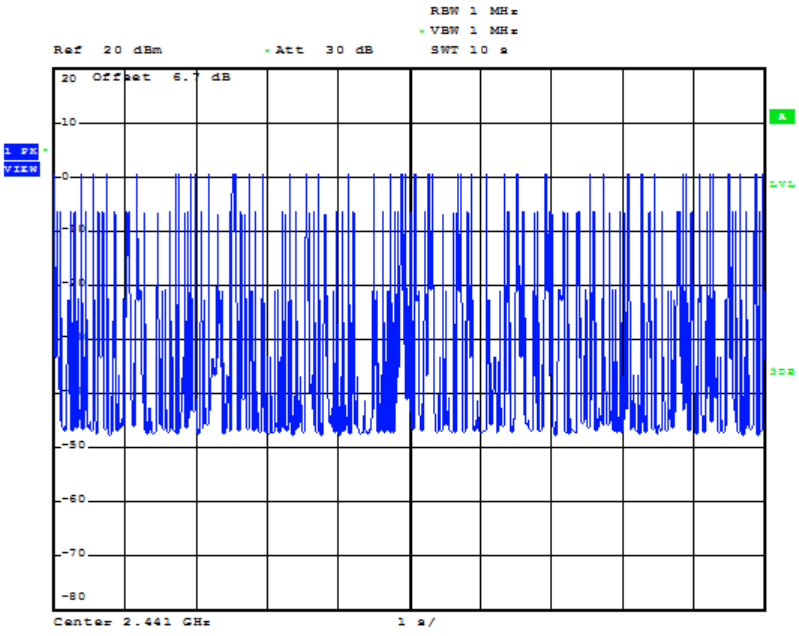
Date: 3.JUL.2012 02:37:16

DH3 Dwell Time (One Pulse) Plot on Channel 39



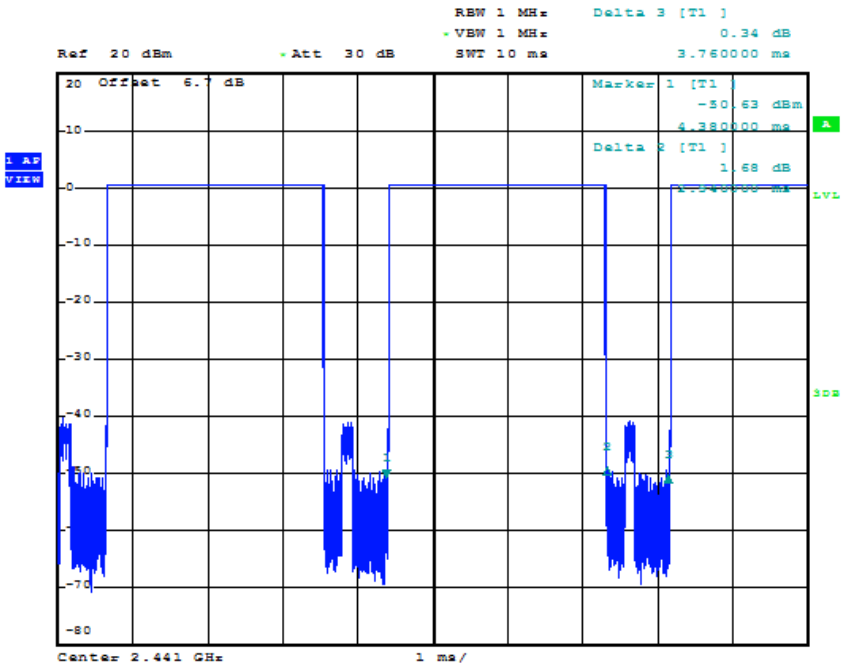
Date: 3.JUL.2012 02:29:44

DH3 Dwell Time (Count Pulses) Plot on Channel 39



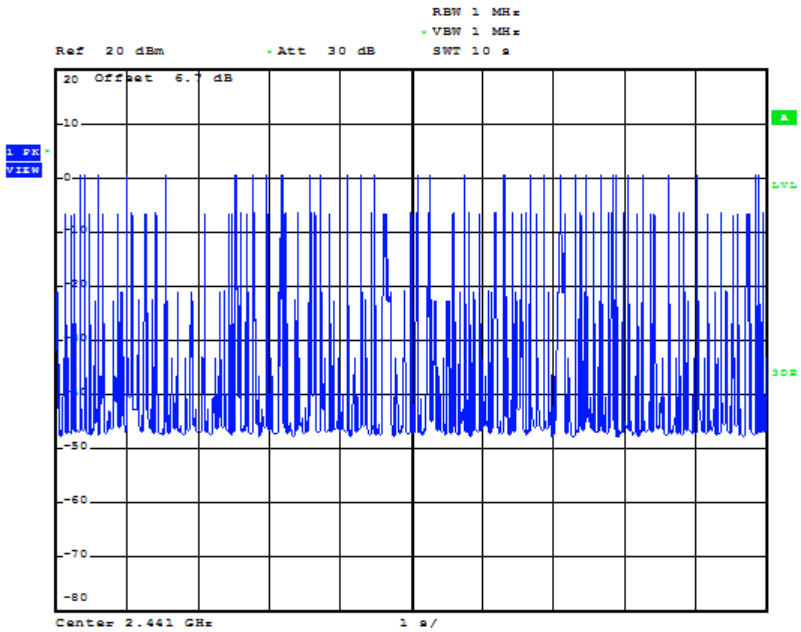
Date: 3.JUL.2012 02:36:55

DH5 Dwell Time (One Pulse) Plot on Channel 39



Date: 3.JUL.2012 02:30:51

DH5 Dwell Time (Count Pulses) Plot on Channel 39



Date: 3.JUL.2012 02:36:25

Test Mode :	Mode 5	Temperature :	23℃~26℃
Test Engineer :	Hogan He	Relative Humidity :	35%~60%

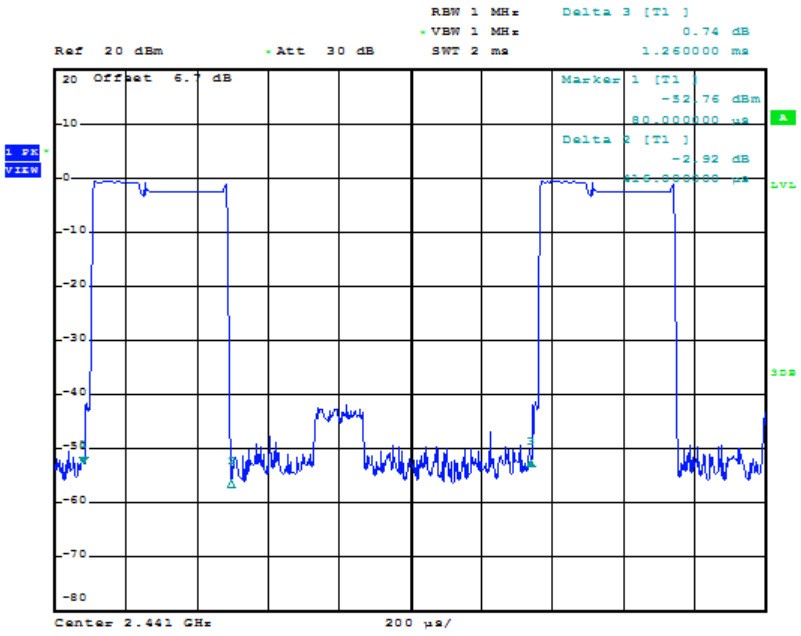
Package Mode	Average Hopping Channel	Package Transfer Time (usec)	Dwell Time (sec)	Limits (sec)	Pass/Fail
2DH1	10.1	416	0.133	0.4	Pass
2DH3	5.1	1690	0.272	0.4	Pass
2DH5	3.4	2960	0.318	0.4	Pass

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)

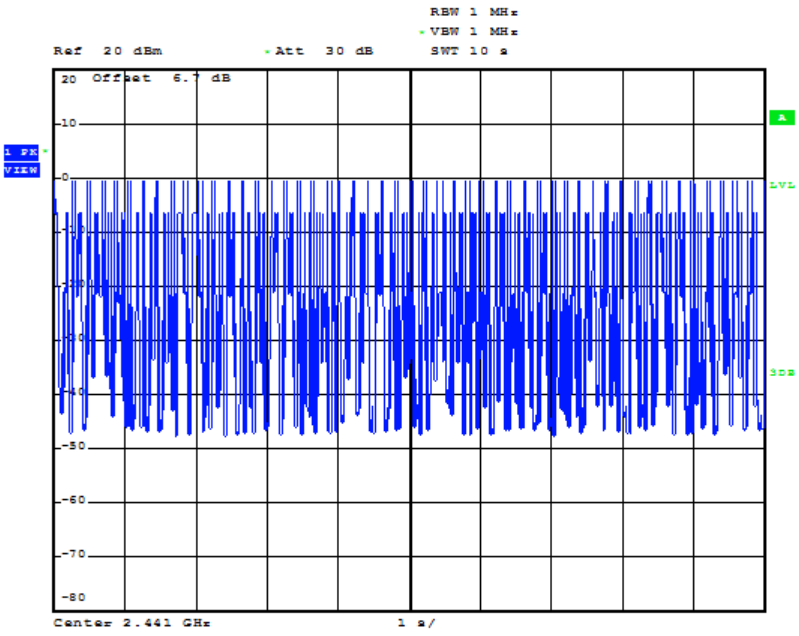
π /4-DQPSK

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



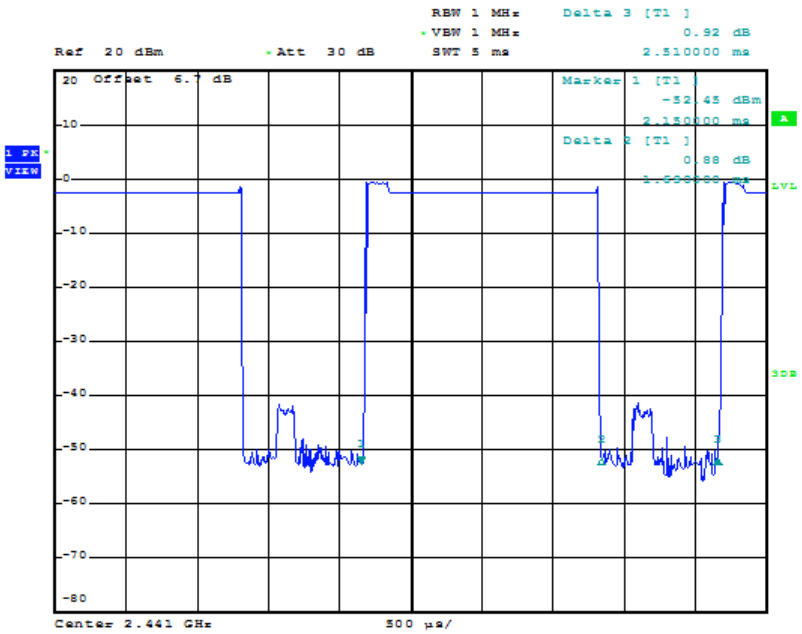
Date: 3.JUL.2012 03:09:31

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



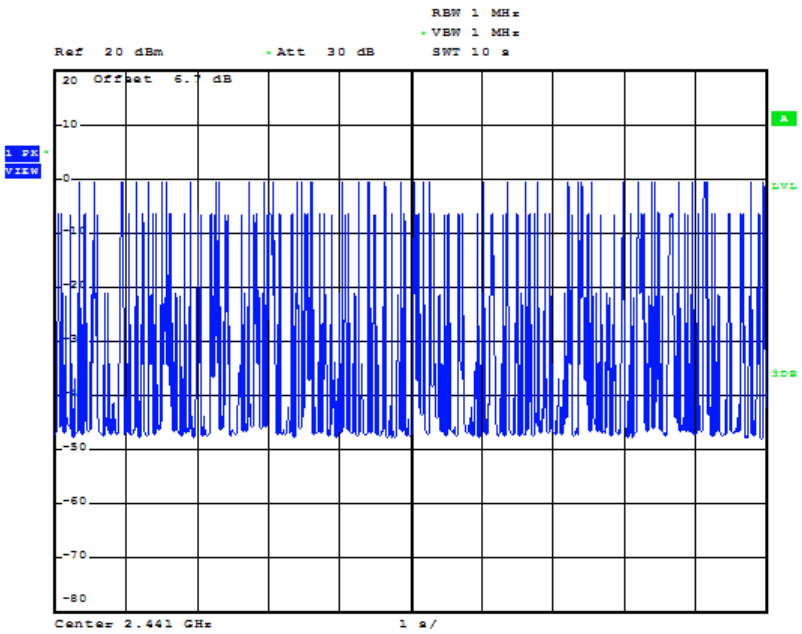
Date: 3.JUL.2012 03:16:06

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



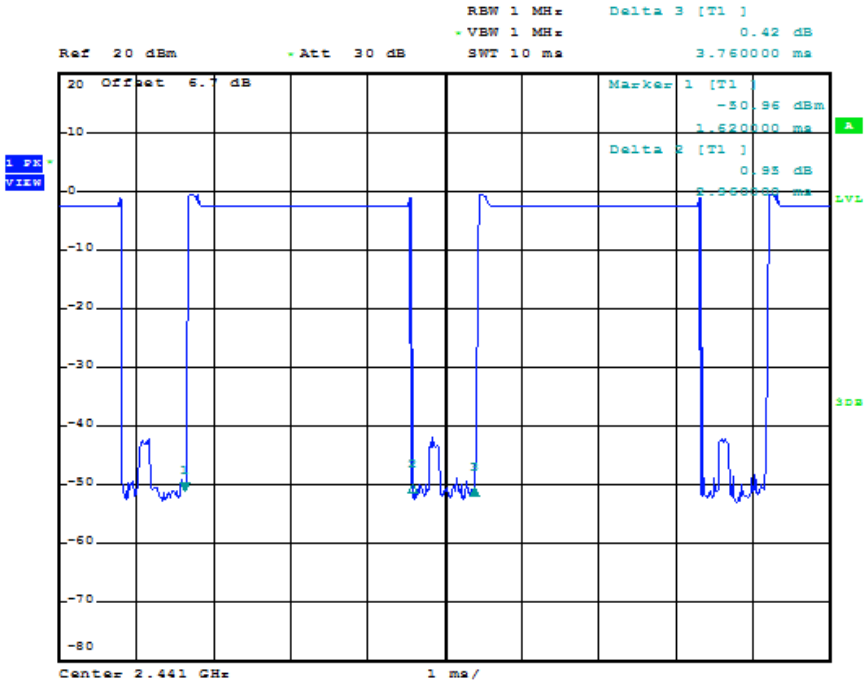
Date: 3.JUL.2012 03:10:16

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



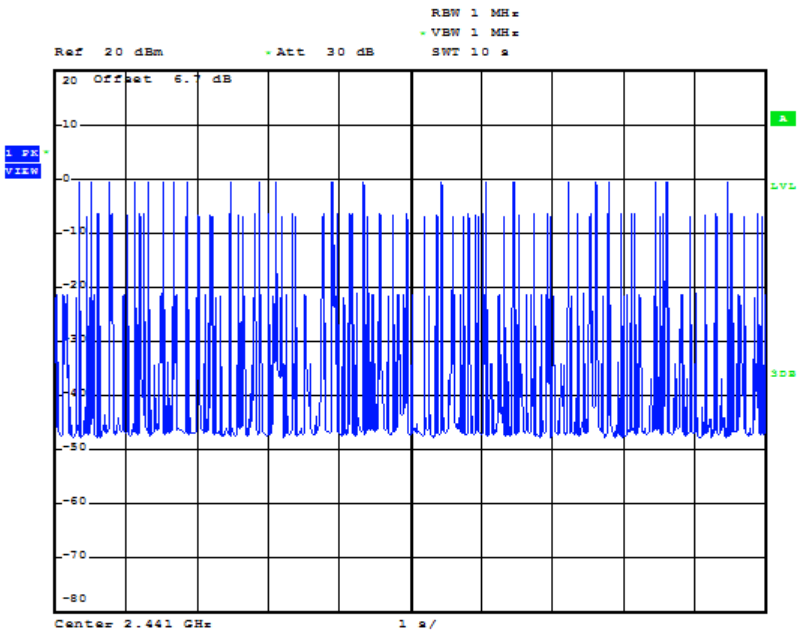
Date: 3.JUL.2012 03:16:55

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



Date: 3.JUL.2012 03:10:59

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



Date: 3.JUL.2012 03:18:44

Test Mode :	Mode 8	Temperature :	23℃~26℃
Test Engineer :	Hogan He	Relative Humidity :	35%~60%

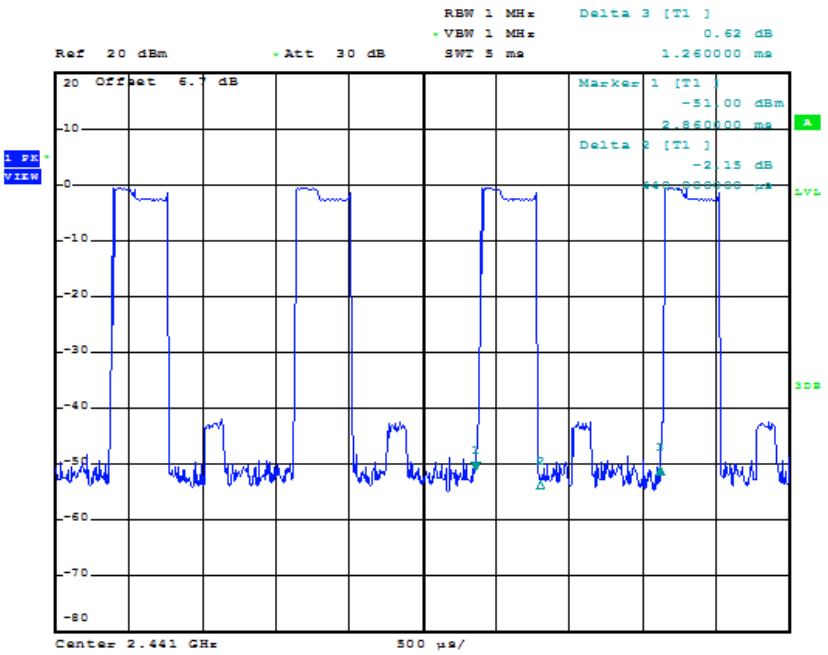
Package Mode	Average Hopping Channel	Package Transfer Time (usec)	Dwell Time (sec)	Limits (sec)	Pass/Fail
3DH1	10.1	440	0.140	0.4	Pass
3DH3	5.1	1690	0.272	0.4	Pass
3DH5	3.4	2960	0.318	0.4	Pass

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)

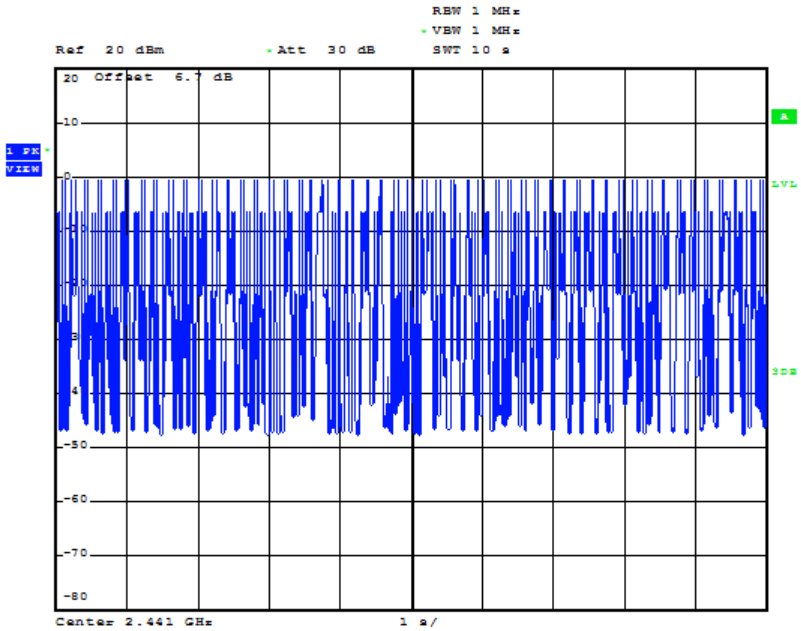
8-DPSK

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



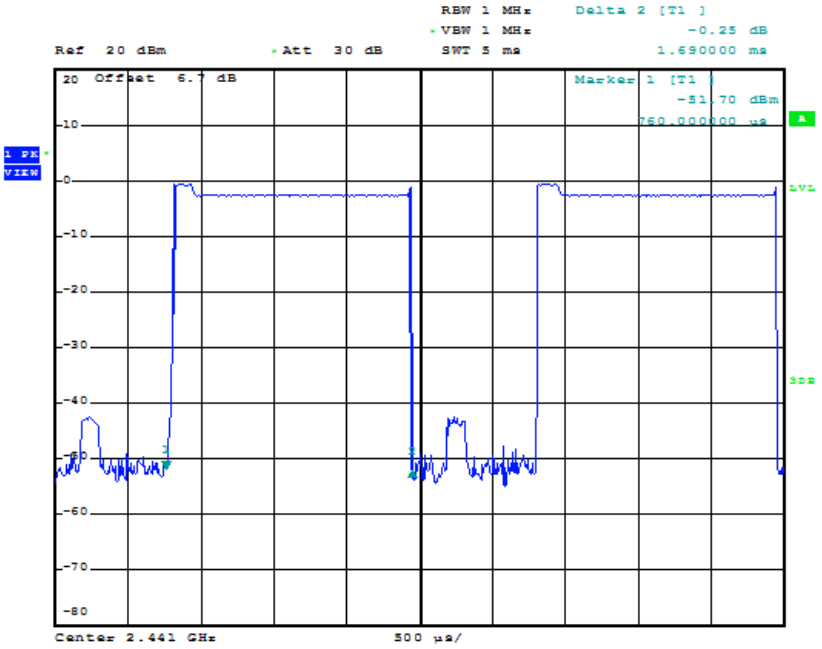
Date: 3.JUL.2012 03:13:58

3DH1 Dwell Time (Count Pulses) Plot on Channel 39



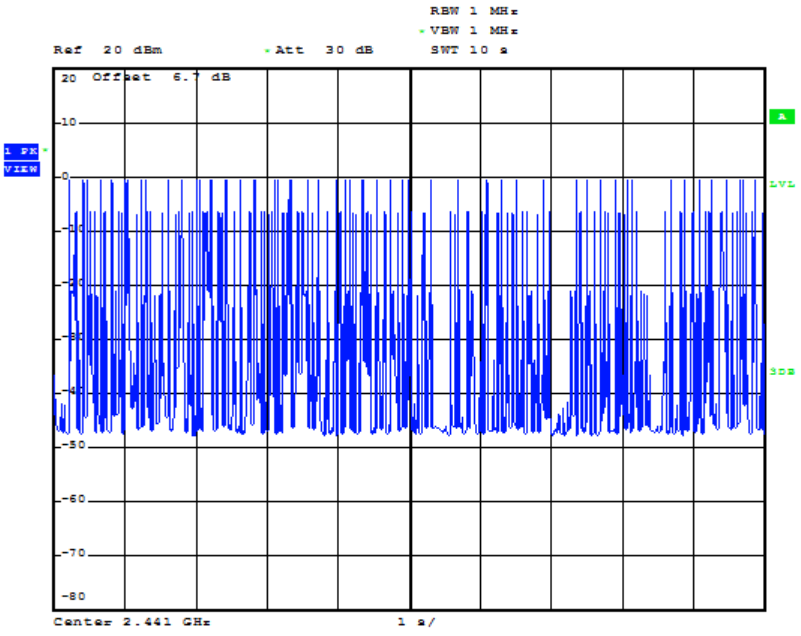
Date: 3.JUL.2012 03:15:32

3DH3 Dwell Time (One Pulse) Plot on Channel 39



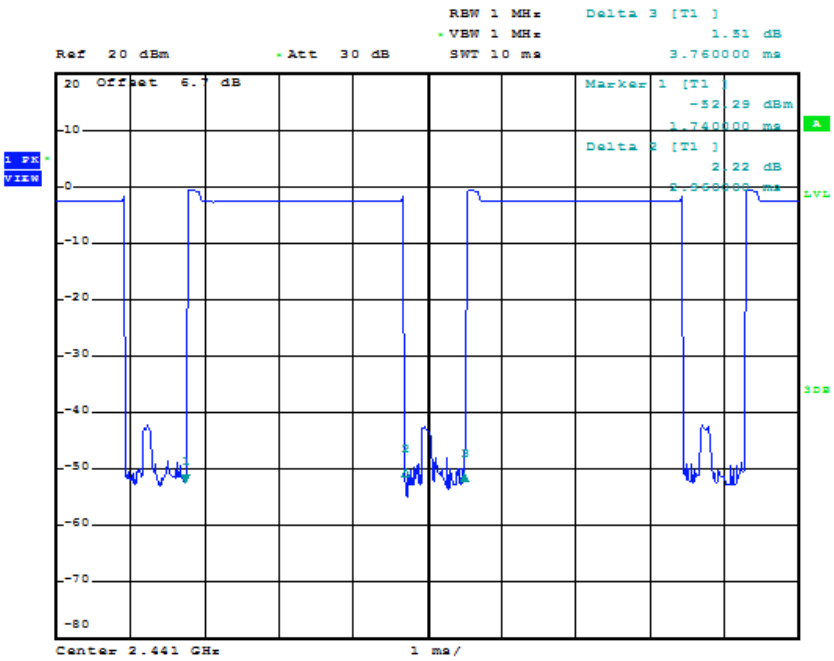
Date: 3.JUL.2012 03:13:06

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



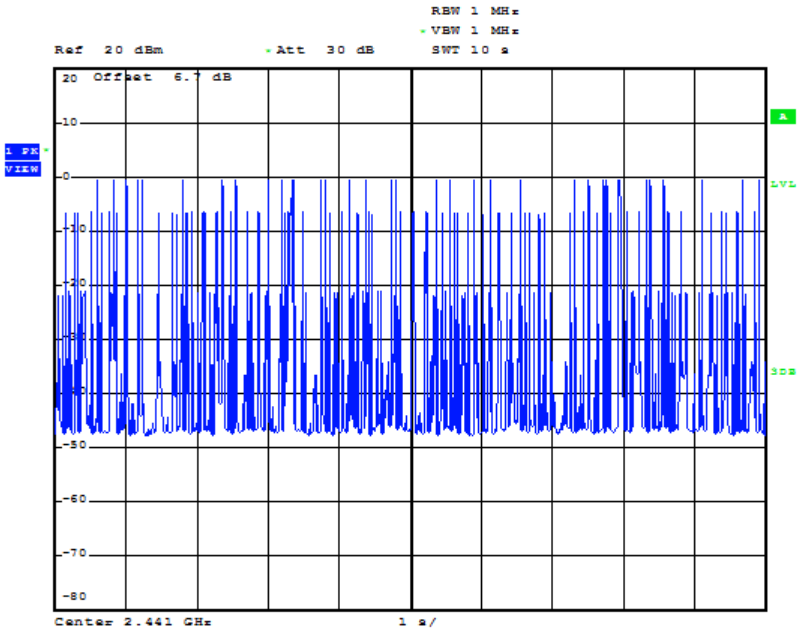
Date: 3.JUL.2012 03:17:33

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



Date: 3.JUL.2012 03:12:18

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



Date: 3.JUL.2012 03:17:58

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).

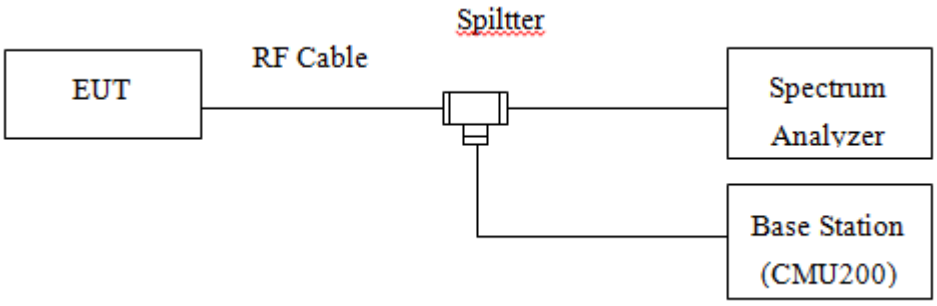
3.5.2 Measuring Instruments

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

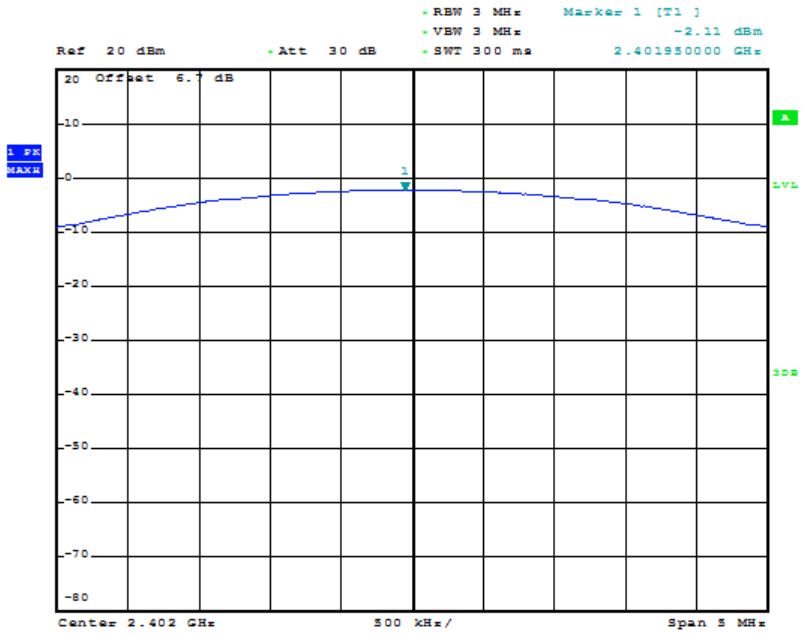


3.5.5 Test Result of Peak Output Power

Test Mode :	Mode 1, 2, 3	Temperature :	23℃~26℃
Test Engineer :	Hogan He	Relative Humidity :	35%~60%

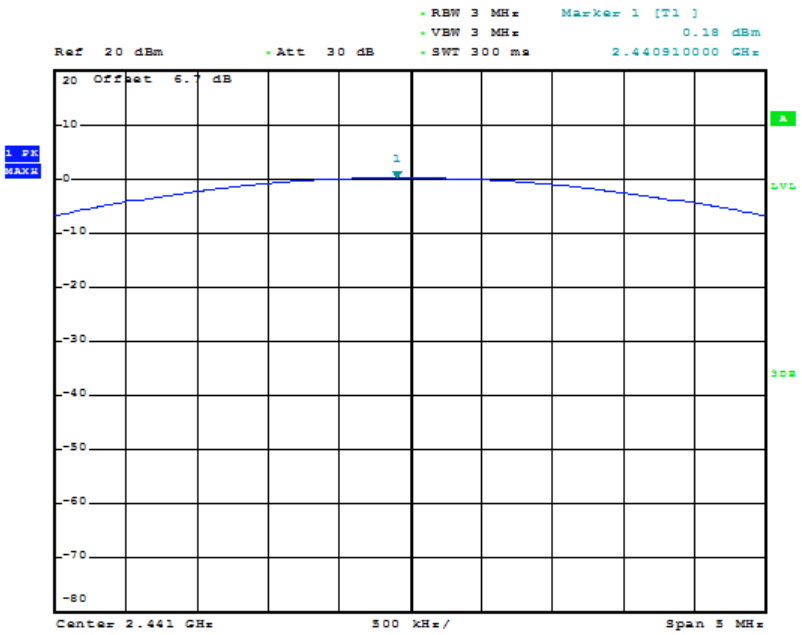
Channel	Frequency (MHz)	RF Power (dBm)		
		GFSK	Max. Limits (dBm)	Pass/Fail
		1 Mbps		
00	2402	-2.11	30	Pass
39	2441	0.18	30	Pass
78	2480	0.77	30	Pass

Peak Output Power Plot on Channel 00



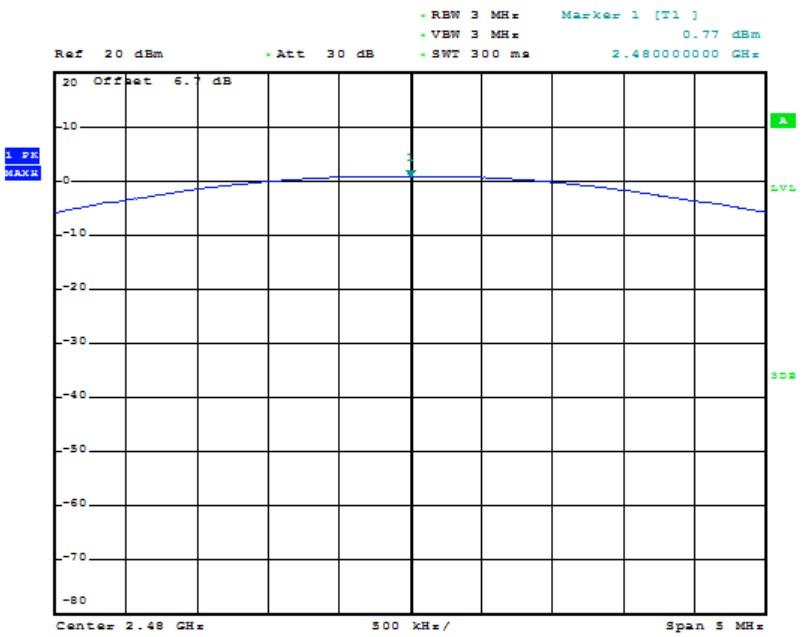
Date: 2.JUL.2012 08:26:51

Peak Output Power Plot on Channel 39



Date: 2.JUL.2012 08:28:04

Peak Output Power Plot on Channel 78

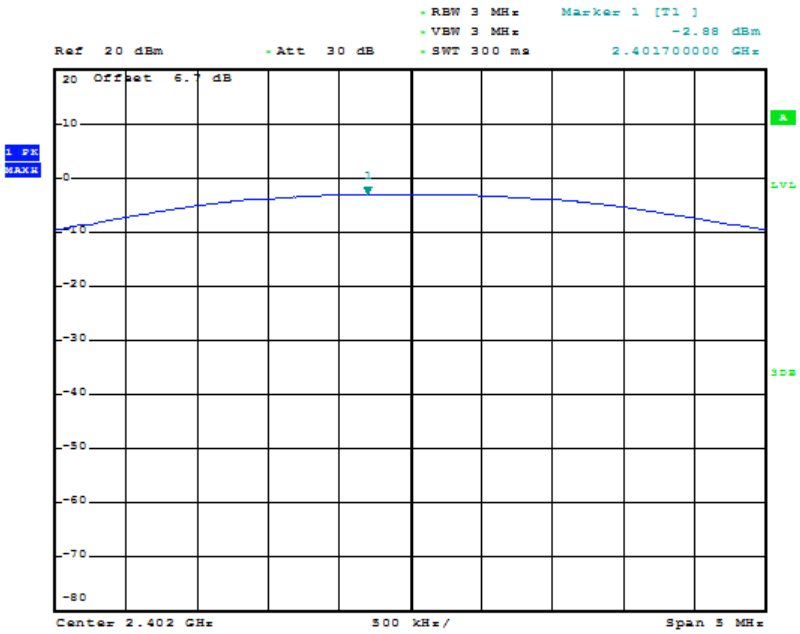


Date: 2.JUL.2012 08:28:42

Test Mode :	Mode 4, 5, 6	Temperature :	23℃~26℃
Test Engineer :	Hogan He	Relative Humidity :	35%~60%

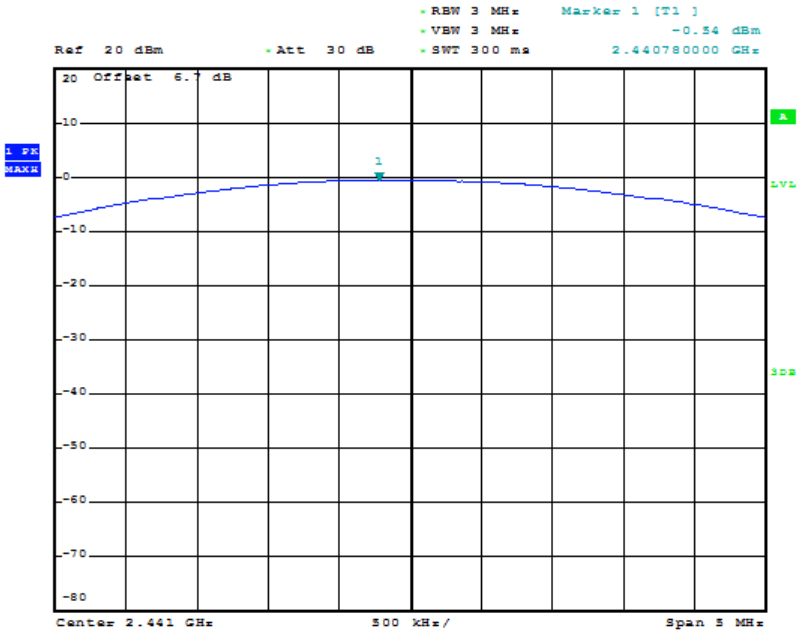
Channel	Frequency (MHz)	RF Power (dBm)		
		π /4-DQPSK	Max. Limits (dBm)	Pass/Fail
		2 Mbps		
00	2402	-2.88	30	Pass
39	2441	-0.54	30	Pass
78	2480	0.08	30	Pass

Peak Output Power Plot on Channel 00



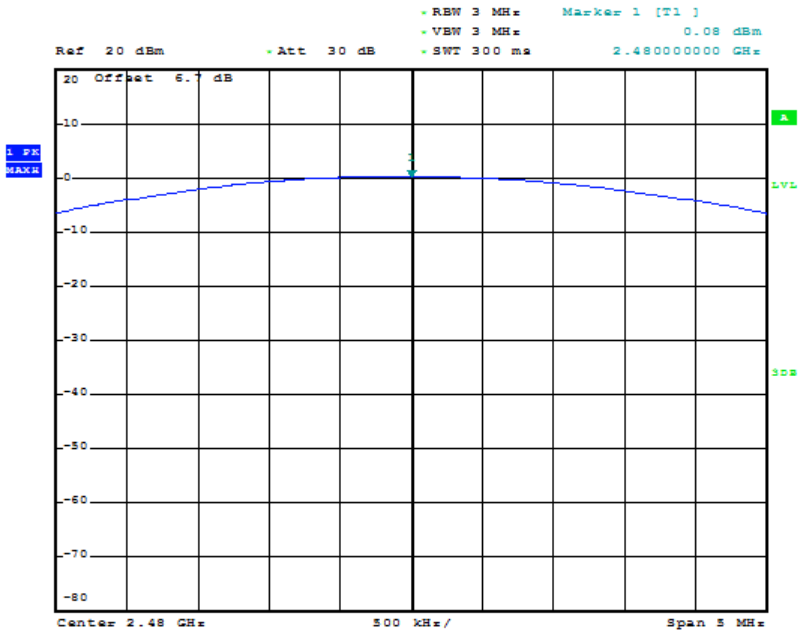
Date: 2.JUL.2012 08:31:02

Peak Output Power Plot on Channel 39



Date: 2.JUL.2012 08:30:10

Peak Output Power Plot on Channel 78

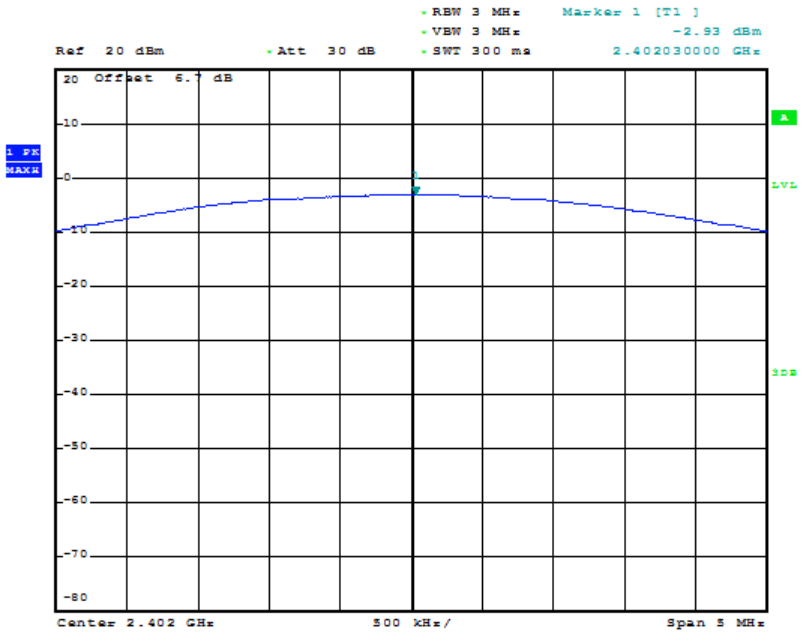


Date: 2.JUL.2012 08:29:31

Test Mode :	Mode 7, 8, 9	Temperature :	23℃~26℃
Test Engineer :	Hogan He	Relative Humidity :	35%~60%

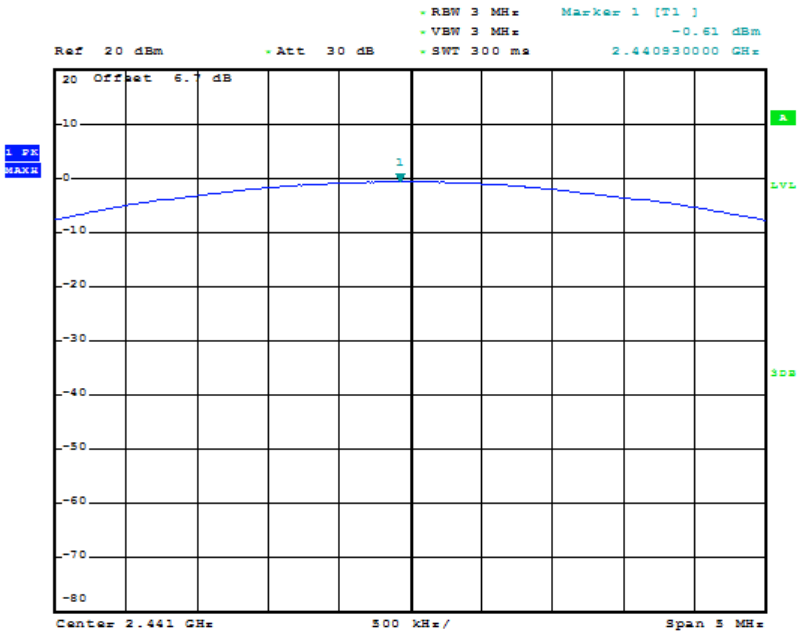
Channel	Frequency (MHz)	RF Power (dBm)		
		8-DPSK	Max. Limits (dBm)	Pass/Fail
		1 Mbps		
00	2402	-2.93	30	Pass
39	2441	-0.61	30	Pass
78	2480	0.10	30	Pass

Peak Output Power Plot on Channel 00



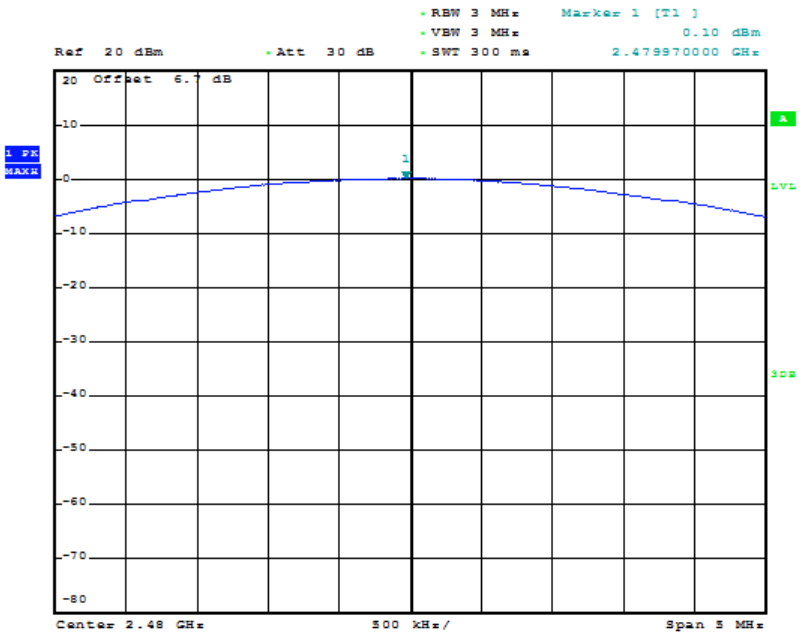
Date: 2.JUL.2012 08:31:33

Peak Output Power Plot on Channel 39



Date: 2.JUL.2012 08:32:01

Peak Output Power Plot on Channel 78



Date: 2.JUL.2012 08:32:27

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

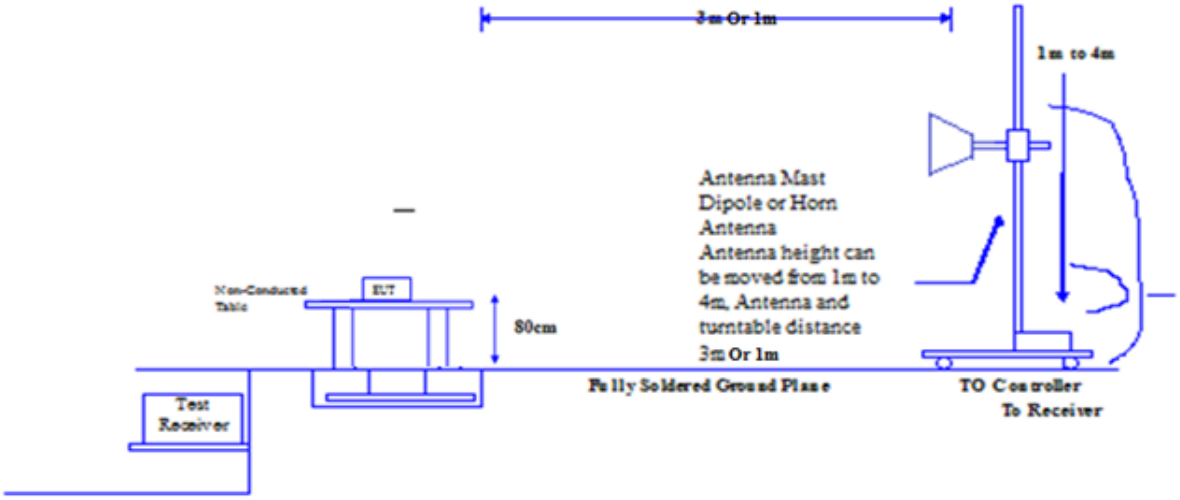
See list of measuring instruments of this test report.

3.6.3 Test Procedures

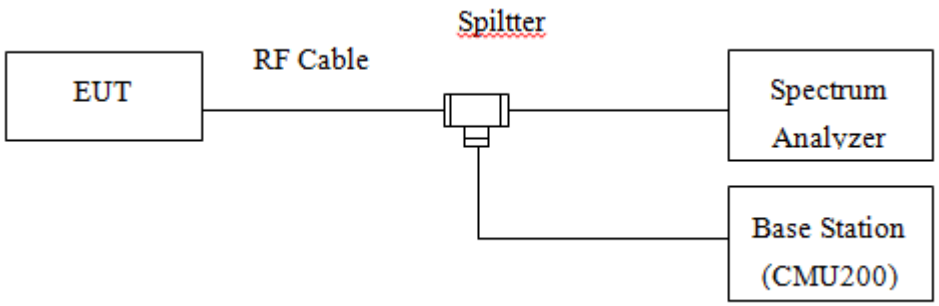
1. The testing follows the guidelines in ANSI C63.4-2003 and FCC Public Notice DA 00-705 Measurement Guidelines.
2. RF antenna conducted test: Set RBW = 300kHz, Video bandwidth (VBW) ≥ RBW. Band edge emissions must be at least 20 dB down from the highest emission level within the authorized band as measured 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
2.375	56.26	-17.74	74	45.77	27.5	6.99	24	Peak	Vertical
2.375	46.86	-7.14	54	36.37	27.5	6.99	24	Average	Vertical
2.375	57.38	-16.62	74	46.89	27.5	6.99	24	Peak	Horizontal
2.375	47.61	-6.39	54	37.12	27.5	6.99	24	Average	Horizontal

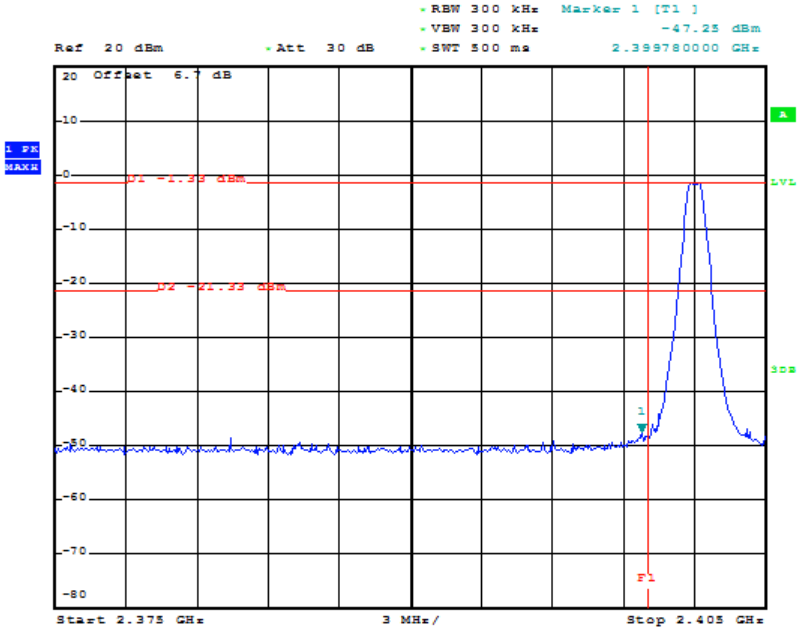
Test Band :	Mode 2
Test Channel	78

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	58.84	-15.16	74	47.56	27.6	7.68	24	Peak	Vertical
2.4835	47.18	-6.82	54	35.9	27.6	7.68	24	Average	Vertical
2.4835	58.42	-15.58	74	47.14	27.6	7.68	24	Peak	Horizontal
2.4835	47.57	-6.43	54	36.29	27.6	7.68	24	Average	Horizontal

3.6.6 Test Result of Conducted Band Edges

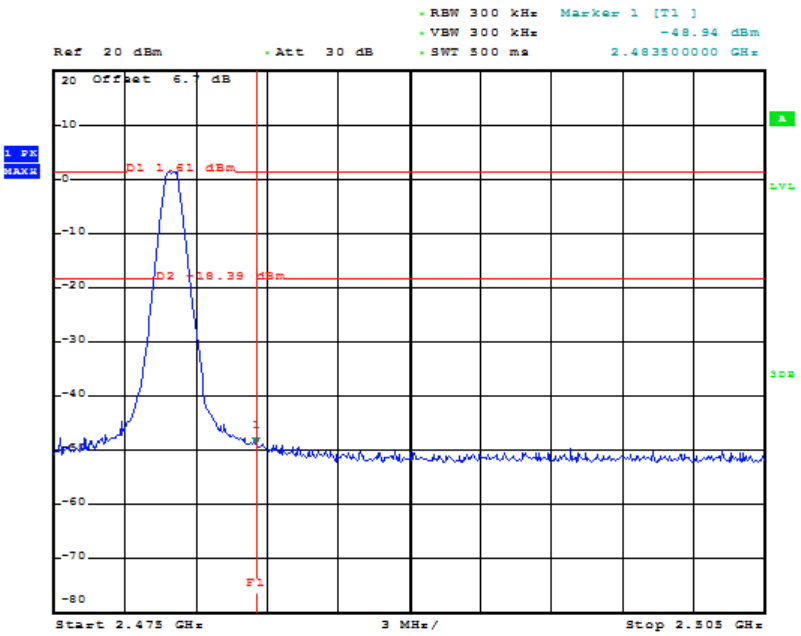
Test Mode :	Mode 1 and 3	**Temperature :**	23℃~26℃
Test Channel :	00 and 78	**Relative Humidity :**	35%~60%
		Test Engineer :	Hogan He

Low Band Edge Plot on Channel 00



Date: 3.JUL.2012 02:46:18

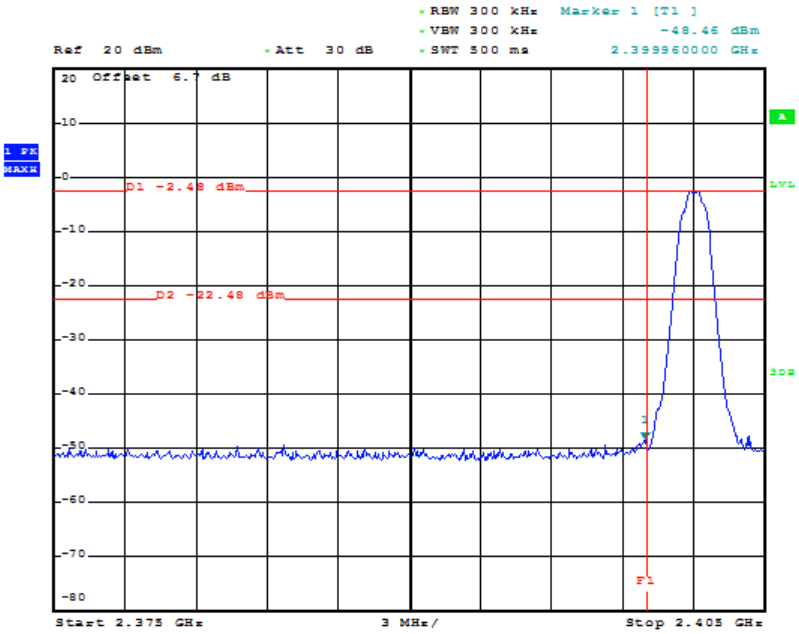
High Band Edge Plot on Channel 78



Date: 3.JUL.2012 02:53:20

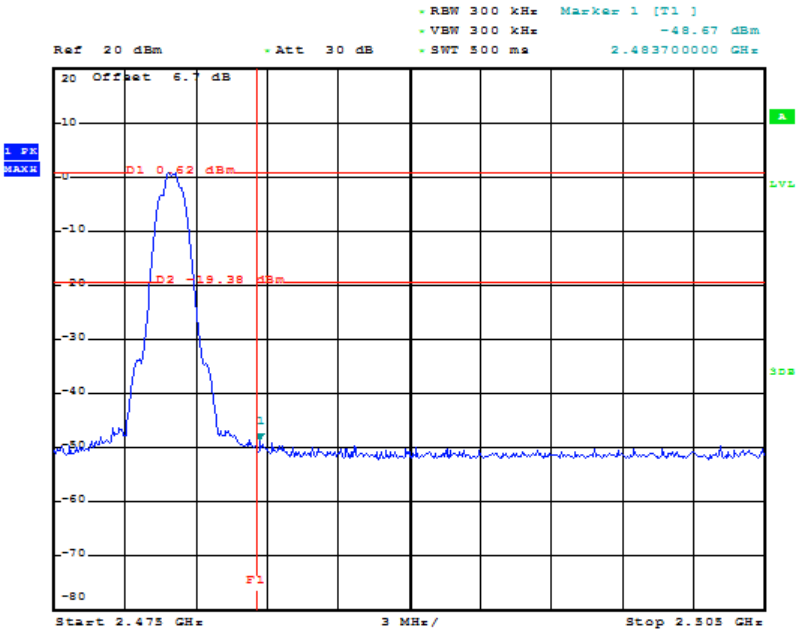
Test Mode :	Mode 4 and 6	Temperature :	23℃~26℃
Test Channel :	00 and 78	Relative Humidity :	35%~60%
		Test Engineer :	Hogan He

Low Band Edge Plot on Channel 00



Date: 3.JUL.2012 02:47:26

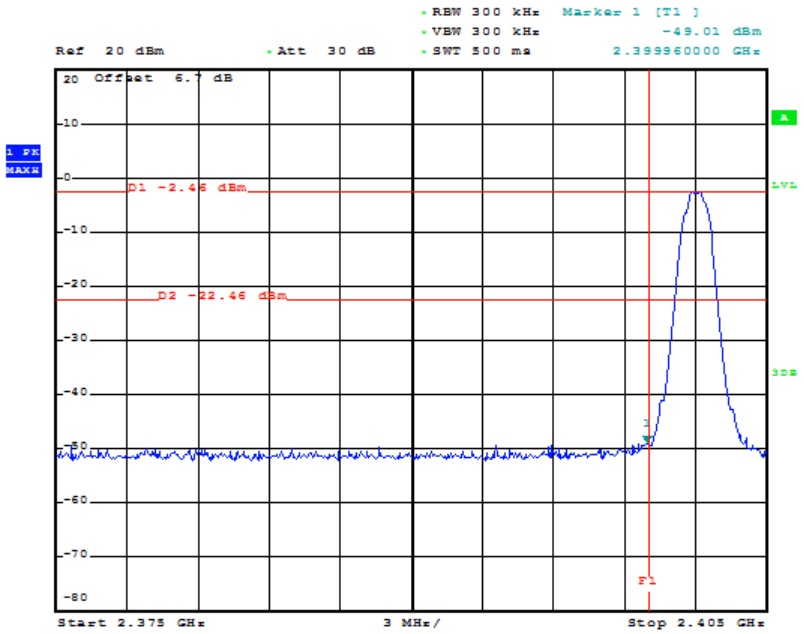
High Band Edge Plot on Channel 78



Date: 3.JUL.2012 02:51:12

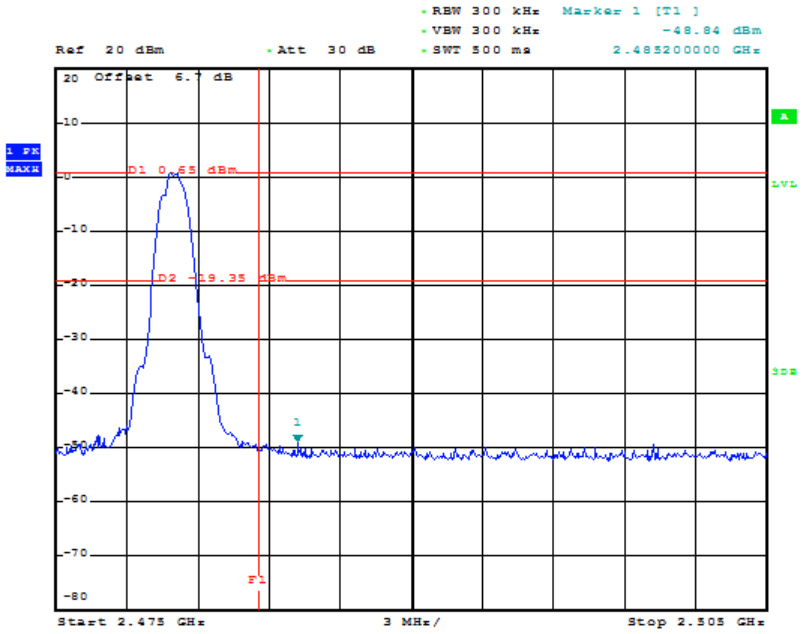
Test Mode :	Mode 7 and 9	Temperature :	23℃~26℃
Test Channel :	00 and 78	Relative Humidity :	35%~60%
		Test Engineer :	Hogan He

Low Band Edge Plot on Channel 00



Date: 3.JUL.2012 02:48:11

High Band Edge Plot on Channel 78



Date: 3.JUL.2012 02:52:21

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.

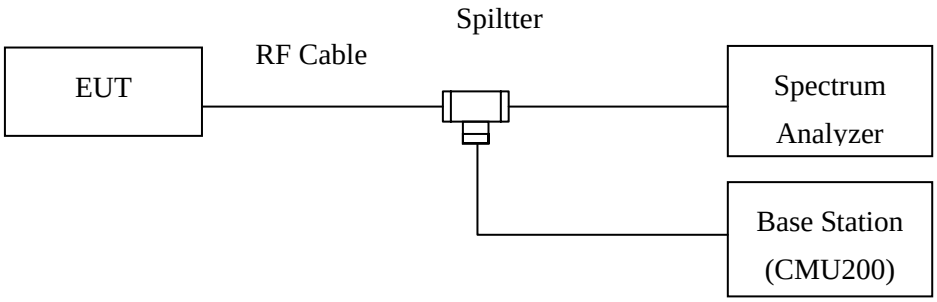
3.7.2 Measuring Instruments

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.

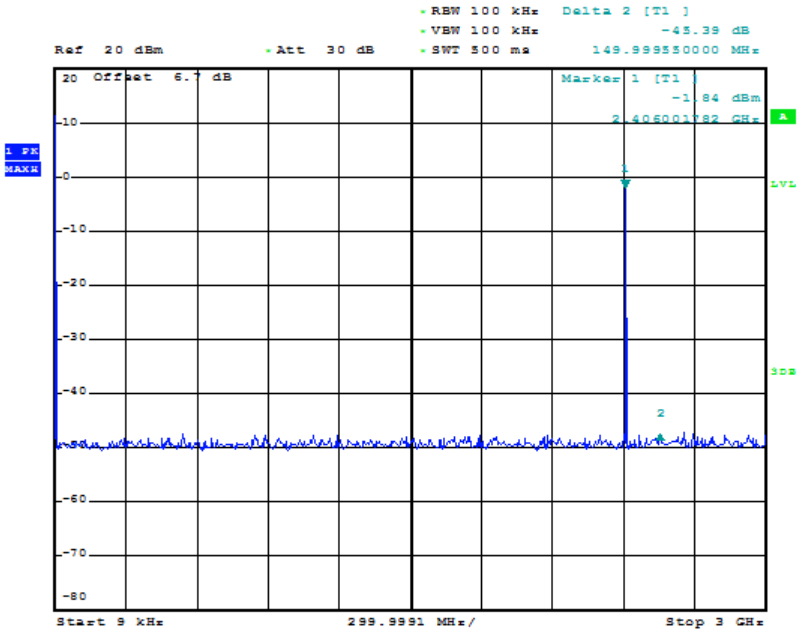
3.7.4 Test Setup



3.7.5 Test Result of Output Power

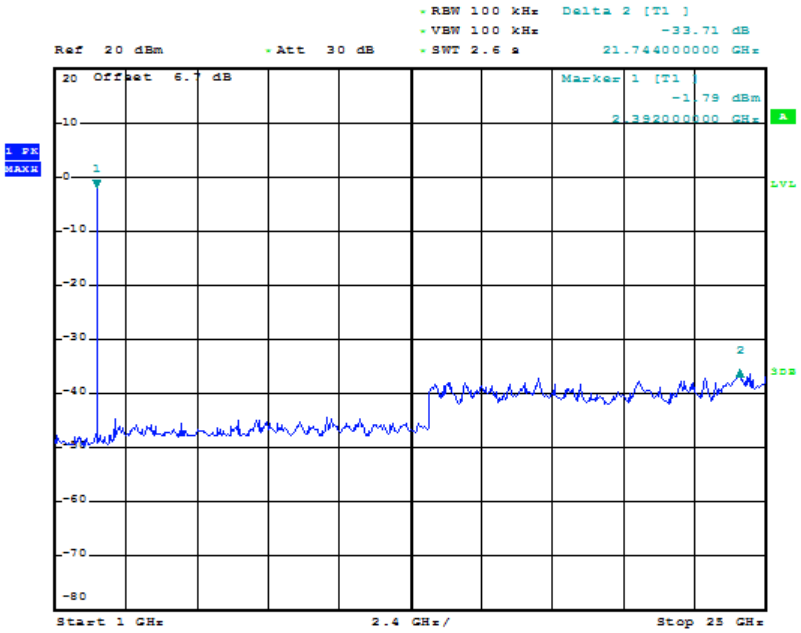
Test Mode :	Mode 1	Temperature :	23℃~26℃
Test Channel :	00	Relative Humidity :	35%~60%
		Test Engineer :	Hogan He

Conducted Spurious Emission Plot between 9 kHz ~ 3 GHz



Date: 3.JUL.2012 03:02:48

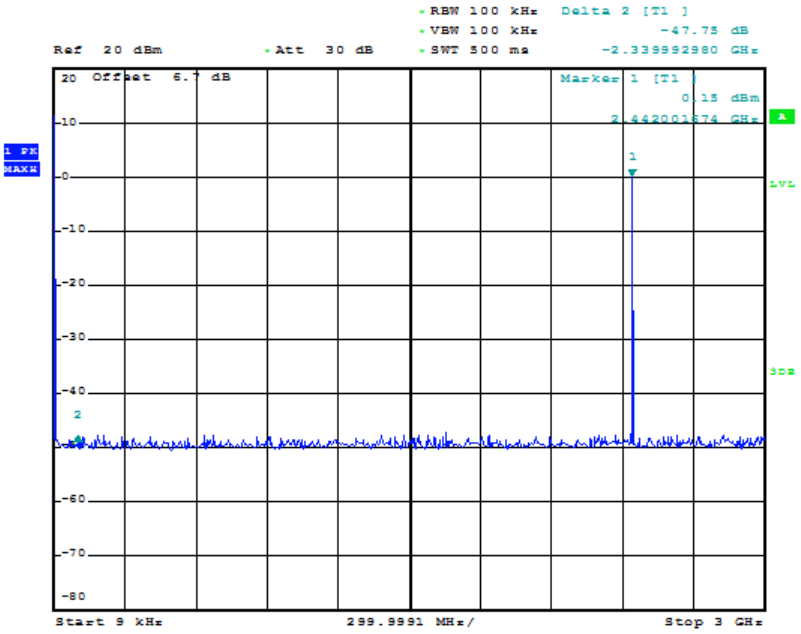
Conducted Spurious Emission Plot between 1 GHz ~ 25 GHz



Date: 3.JUL.2012 02:58:27

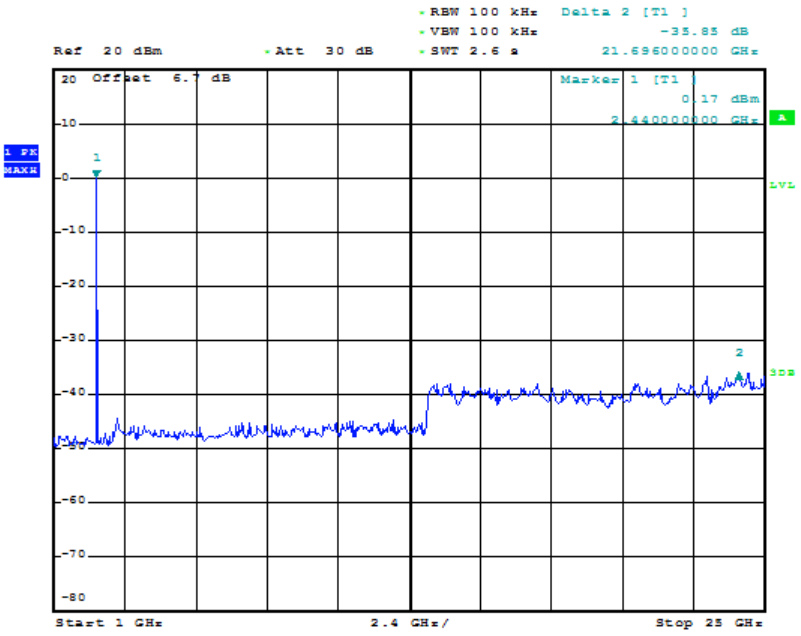
Test Mode :	Mode 2	Temperature :	23℃~26℃
Test Channel :	39	Relative Humidity :	35%~60%
		Test Engineer :	Hogan He

Conducted Spurious Emission Plot between 9 kHz ~ 3 GHz



Date: 3.JUL.2012 03:02:22

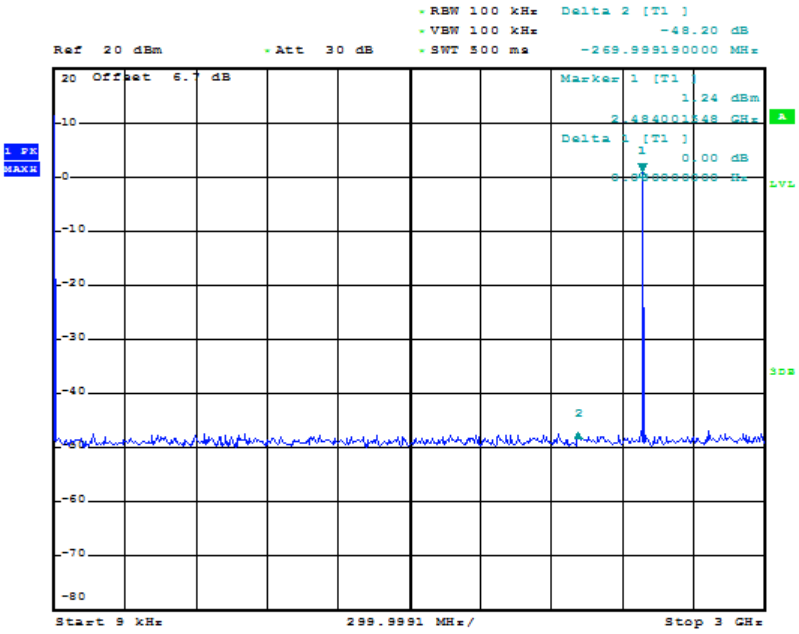
Conducted Spurious Emission Plot between 1 GHz ~ 25 GHz



Date: 3.JUL.2012 02:59:12

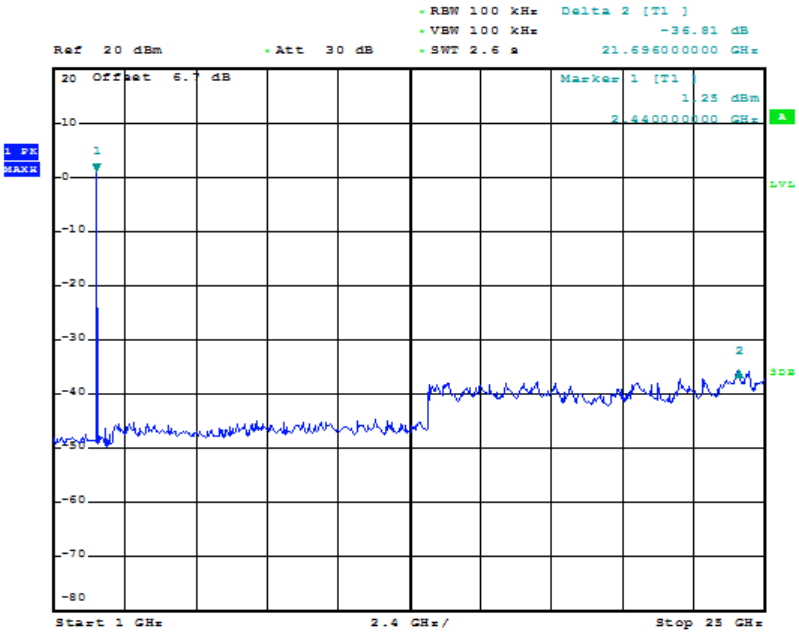
Test Mode :	Mode 3	Temperature :	23℃~26℃
Test Channel :	78	Relative Humidity :	35%~60%
		Test Engineer :	Hogan He

Conducted Spurious Emission Plot between 9 kHz ~ 3 GHz



Date: 3.JUL.2012 03:01:51

Conducted Spurious Emission Plot between 1 GHz ~ 25 GHz



Date: 3.JUL.2012 03:00:30

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.

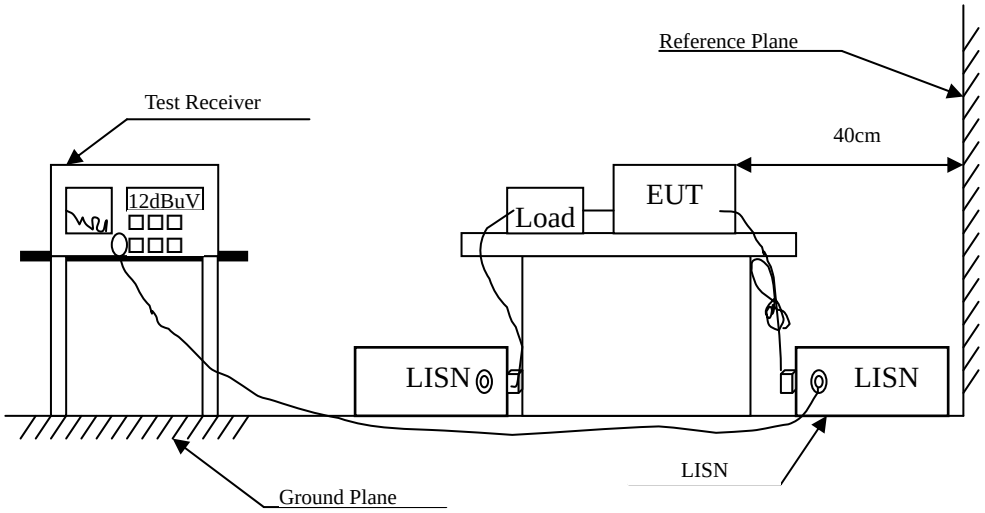
3.8.2 Measuring Instruments

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 (RBW=9kHz and VBW=30kHz) with Maximum Hold Mode for QP limit measurement.
10. Set the test-receiver system to Average Detect Function and specified bandwidth (RBW=9kHz and VBW=30kHz) with Maximum Hold Mode for QP limit measurement.

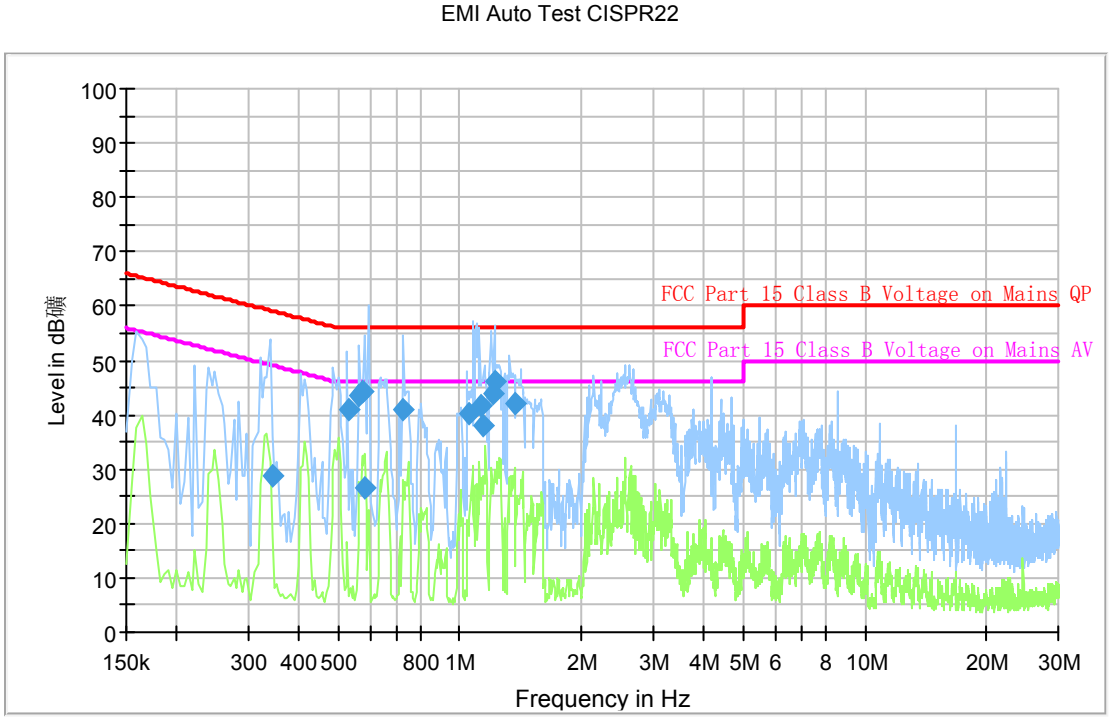
3.8.4 Test Setup



3.8.5 Test Result of AC Conducted Emission

Test Voltage:120V/60Hz

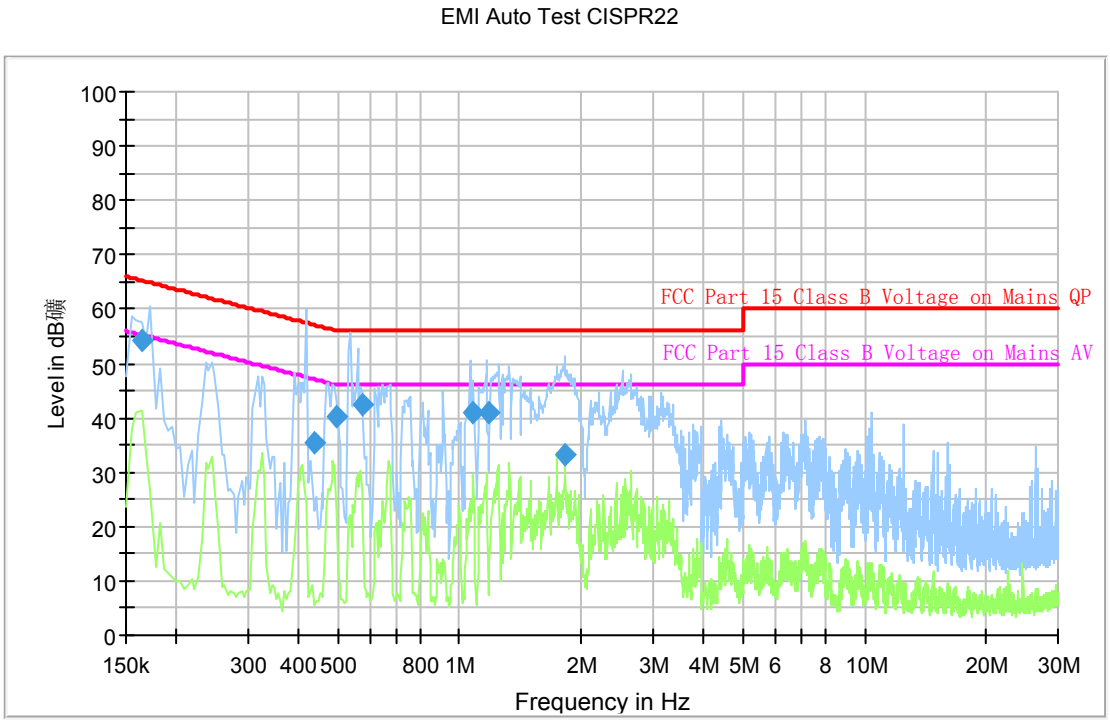
Test mode: GSM850 Idle + Bluetooth Link + WIFI Link+ Adapter+ Battery +Earphone +Neutral



Final Result 1

Frequency (MHz)	QuasiPeak (dBuV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.343500	28.9	10.0	9.000	On	N	10.0	30.2	59.1
0.532500	41.1	10.0	9.000	On	N	9.8	14.9	56.0
0.564000	43.5	10.0	9.000	On	N	9.8	12.5	56.0
0.573000	44.1	10.0	9.000	On	N	9.8	11.9	56.0
0.582000	26.6	10.0	9.000	On	N	9.8	29.4	56.0
0.721500	40.8	10.0	9.000	On	N	9.8	15.2	56.0
1.054500	40.3	10.0	9.000	On	N	9.7	15.7	56.0
1.122000	41.8	10.0	9.000	On	N	9.7	14.2	56.0
1.140000	38.0	10.0	9.000	On	N	9.7	18.0	56.0
1.207500	44.1	10.0	9.000	On	N	9.7	11.9	56.0
1.221000	46.1	10.0	9.000	On	N	9.7	9.9	56.0
1.365000	42.0	10.0	9.000	On	N	9.6	14.0	56.0

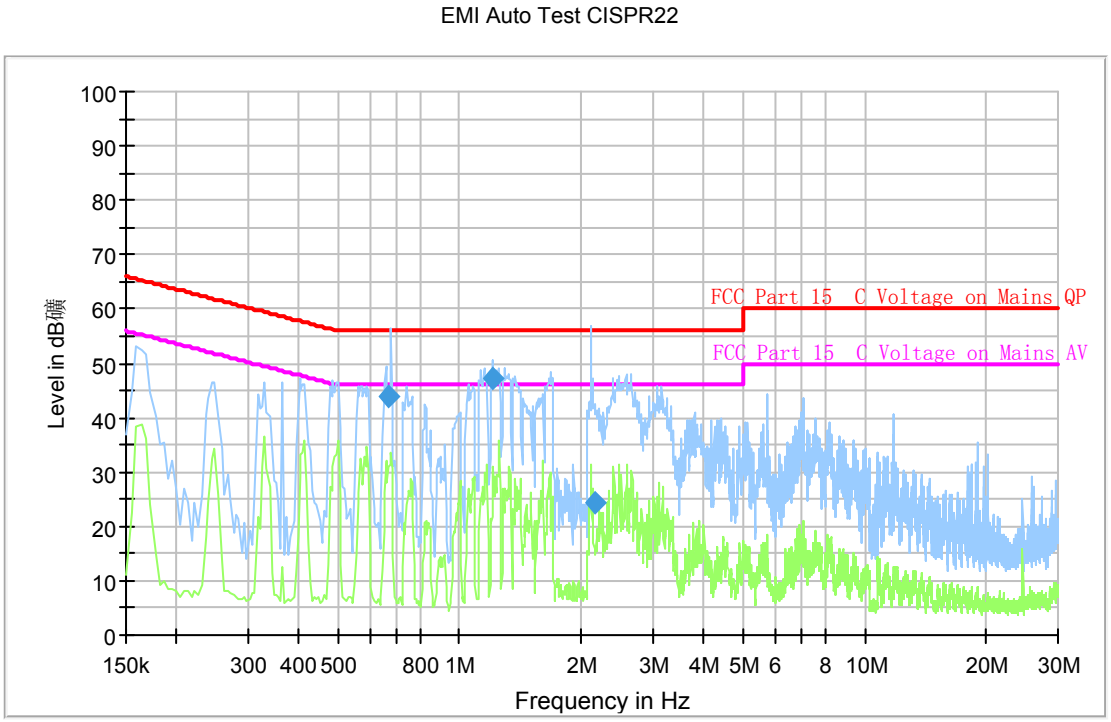
Test mode: GSM850 Idle + Bluetooth Link + WIFI Link+ Adapter+ Battery +Earphone +Line



Final Result 1

Frequency (MHz)	QuasiPeak (dBuV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.163500	54.4	10.0	9.000	On	L1	9.4	10.9	65.3
0.438000	35.5	10.0	9.000	On	L1	9.7	21.6	57.1
0.496500	40.1	10.0	9.000	On	L1	9.7	16.0	56.1
0.577500	42.3	10.0	9.000	On	L1	9.7	13.7	56.0
1.072500	41.0	10.0	9.000	On	L1	9.7	15.0	56.0
1.176000	40.9	10.0	9.000	On	L1	9.7	15.1	56.0
1.828500	33.1	10.0	9.000	On	L1	9.7	22.9	56.0

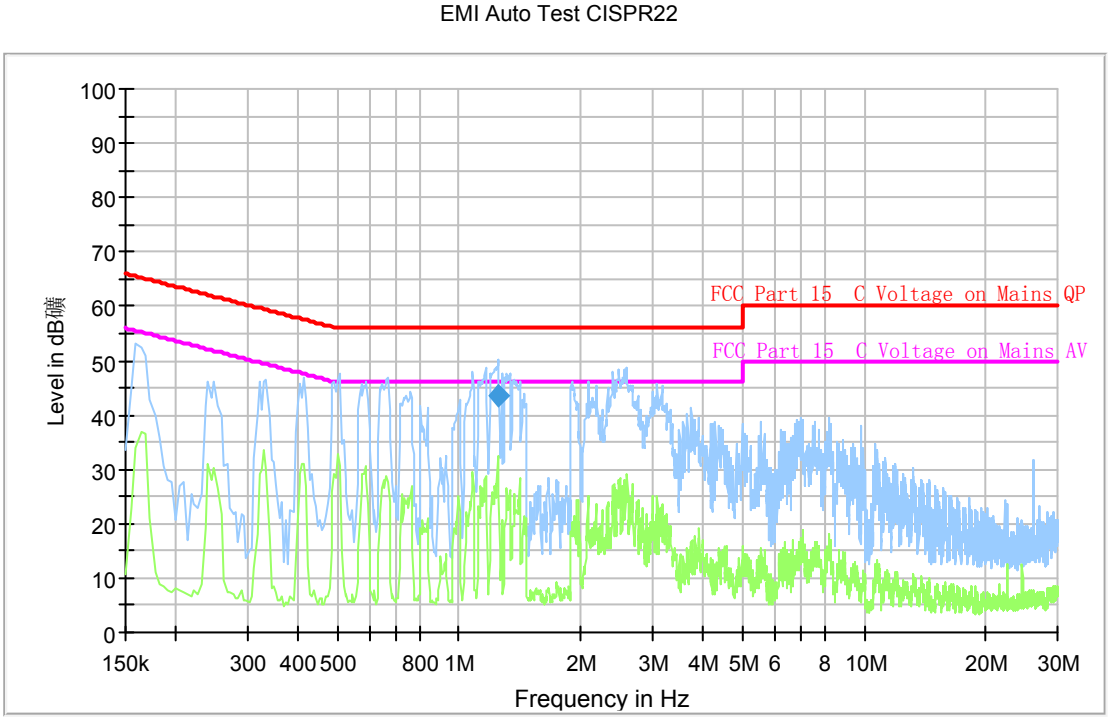
Test mode: GSM1900 Idle + Bluetooth Link + WIFI Link+ Adapter+ Battery +Earphone +Neutral



Final Result 1

Frequency (MHz)	QuasiPeak (dBuV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.667500	43.9	10.0	9.000	On	N	9.8	12.1	56.0
1.212000	47.2	10.0	9.000	On	N	9.7	8.8	56.0
2.148000	24.4	10.0	9.000	On	N	9.5	31.6	56.0

Test mode: GSM1900 Idle + Bluetooth Link + WIFI Link+ Adapter+ Battery +Earphone + Line



Final Result 1

Frequency (MHz)	QuasiPeak (dBuV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
1.248000	43.5	10.0	9.000	On	L1	9.7	12.5	56.0

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

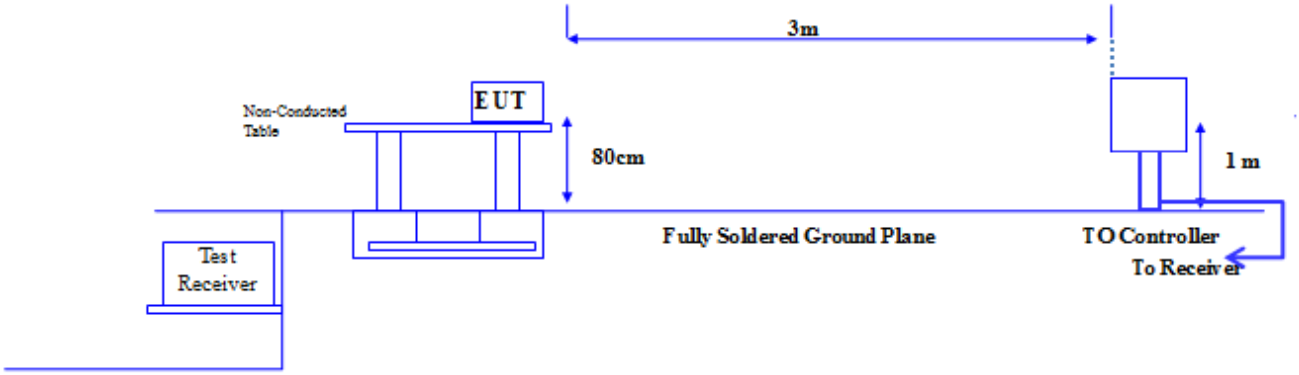
See list of measuring instruments of this test report.

3.9.3 Test Procedures

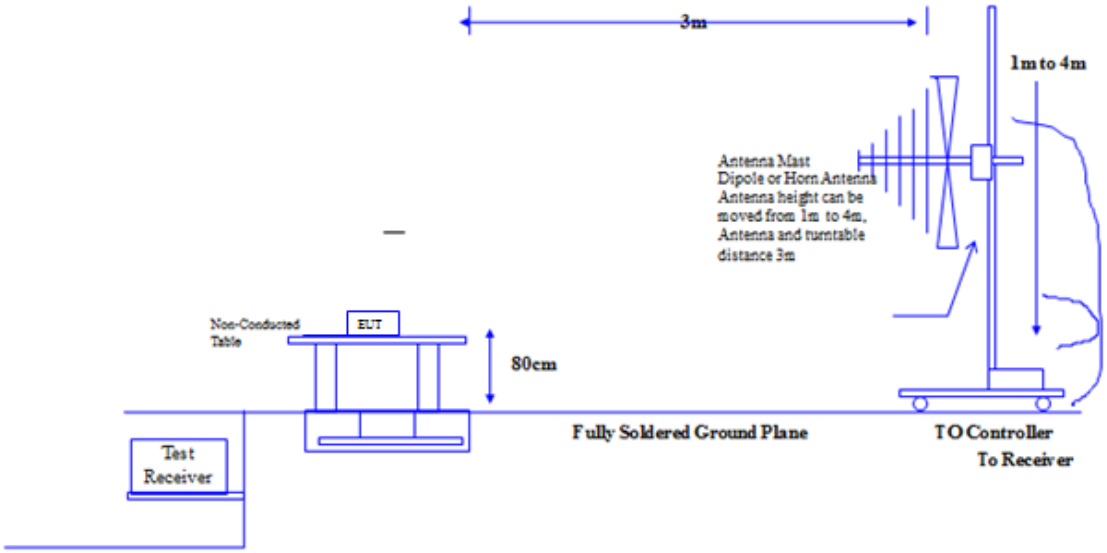
1. The testing follows the guidelines in FCC KDB Publication No. 558074 (Measurement Guidelines of DTS).
2. Use the following spectrum analyzer settings:
   (1) Span = wide enough to fully capture the emission being measured; RBW = 1 MHz for f ≥ 1 GHz, 100 kHz for f < 1 GHz; VBW ≥ RBW; Sweep = auto; 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

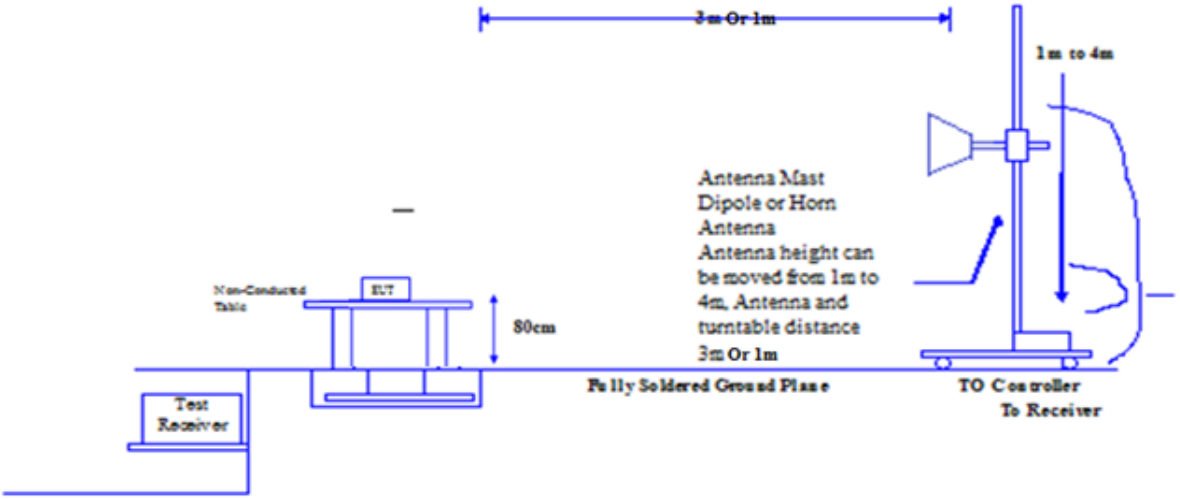
9kHz~30MHz



30MHz~1GHz



Above 1GHz


3m Or 1m
1m to 4m
Antenna Mast
Dipole or Horn
Antenna
Antenna height can
be moved from 1m to
4m, Antenna and
turntable distance
3m Or 1m
Non-Conductive
Table
EUT
80cm
Test
Receiver
Fully Soldered Ground Plane
TO Controller
To Receiver

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

Test Engineer :	Hogan. He	**Temperature :**	23℃~26℃
		Relative Humidity :	35%~60%

Frequency (MHz)	Reading (dBu V/m)	Factor(dB) Corr.	Result (dBu V/m)	Limit (dBu V/m)	Margin (dB)	Polarization
1.075	26.67	14.89	41.56	62.97	-21.41	Horizontal
1.075	27.41	14.89	42.30	62.97	-20.67	Vertical

Notes:

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

2，Laboratory's Information：

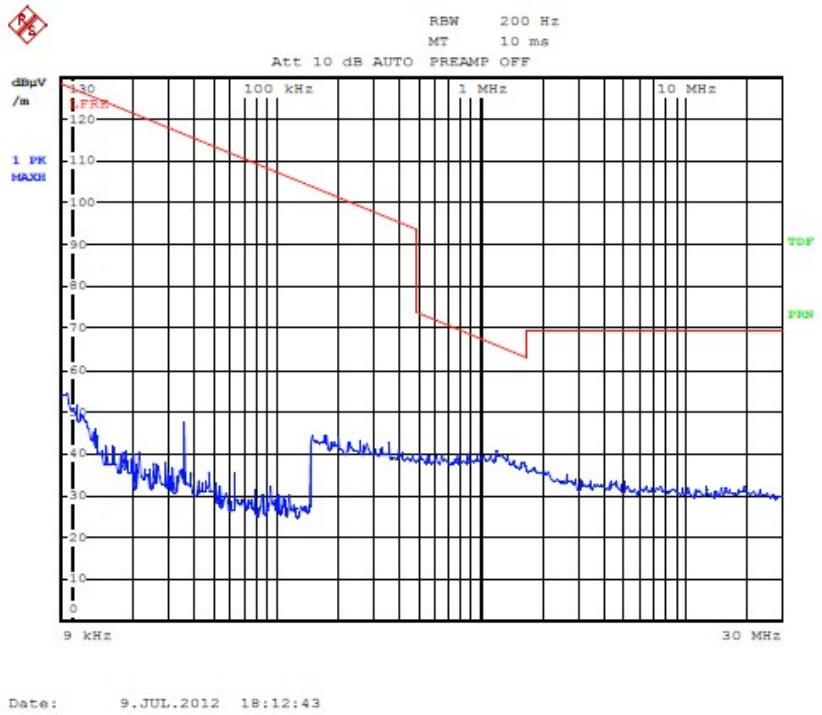
Prepared By：Accurate Technology Co., Ltd

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

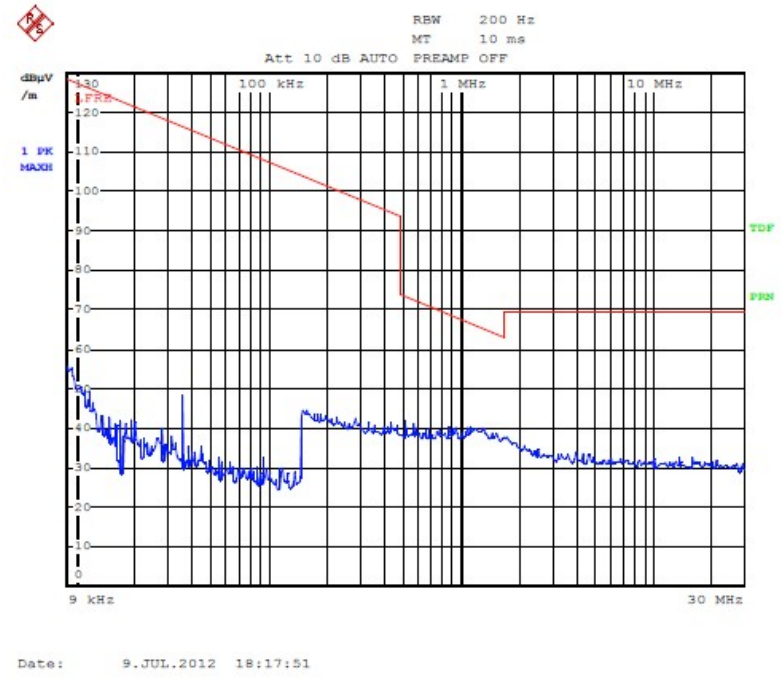
Company Registration Number：752051

Date of Receipt：2012.07.09

Radiated Emission Plot between 9 kHz ~ 30MHz（Horizontal）



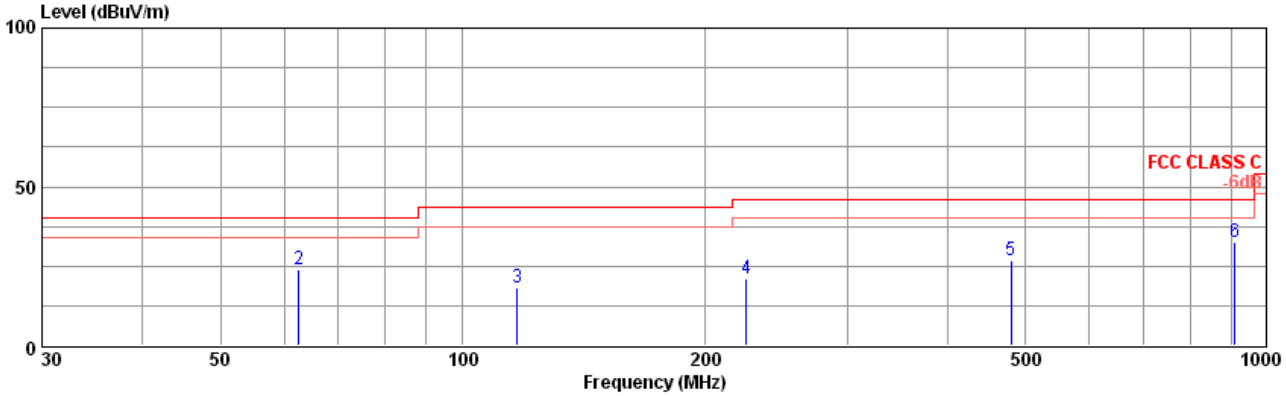
Radiated Emission Plot between 9 kHz ~ 30MHz（Vertical）



3.9.6 Radiated Emission Measurement Results (30MHz-18GHz)

Test Channel :	00
Remark:	2402MHz is Fundamental signal which can be ignored

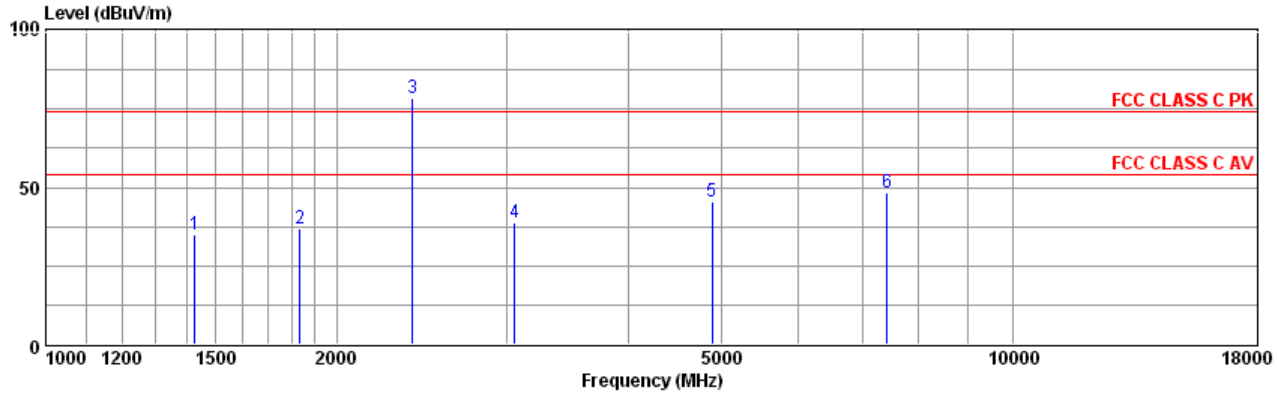
Radiated Emission 30MHz-1GHz Vertical



Condition : FCC CLASS C 3m HL562 HORIZONTAL
: RBW:120.000KHz VBW:300.000KHz SWT:Auto
eut : GSM MOBILE PHONE

	Freq	Remark	Level	Over Limit	Limit Line	Antenna Factor	Cable Loss	Read Level	Factor
	MHz		dBuV/m	dB	dBuV/m	dB/m	dB	dBuV	dB/m
1	30.01	Peak	31.56	-8.44	40.00	19.18	1.12	11.26	20.30
2	62.50	Peak	24.15	-15.85	40.00	4.13	1.46	18.56	5.59
3	116.82	Peak	18.26	-25.24	43.50	9.46	1.68	7.12	11.14
4	224.97	Peak	20.96	-25.04	46.00	8.48	2.37	10.11	10.85
5	480.08	Peak	26.85	-19.15	46.00	15.12	3.48	8.25	18.60
6	910.76	Peak	32.60	-13.40	46.00	20.65	4.96	6.99	25.61

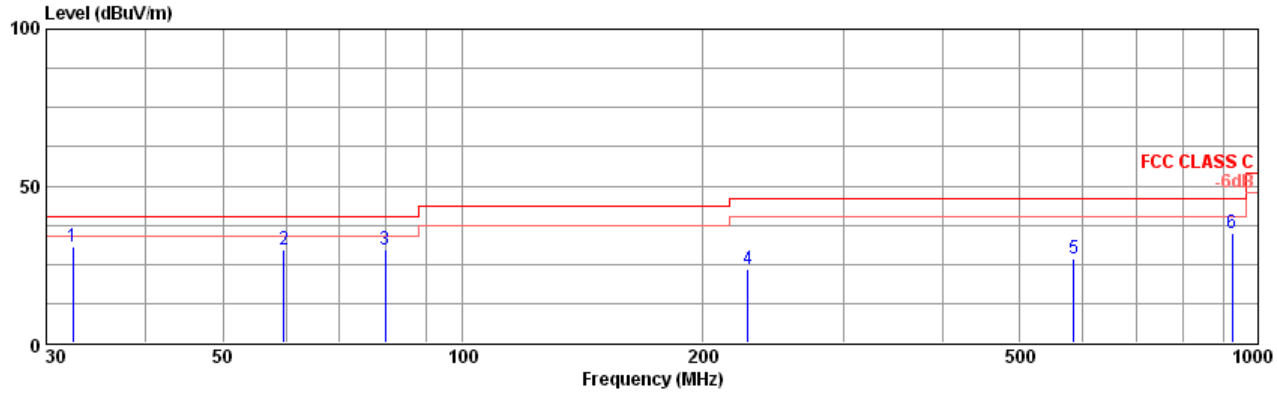
Radiated Emission 1GHz-18GHz Vertical



Condition : FCC CLASS C PK 3m HF906 VERTICAL
: RBW:1000.000KHz VBW:1000.000KHz SWT:Auto
eut : GSM MOBILE PHONE

	Freq	Remark	Level	Over Limit	Limit Line	Antenna Factor	Cable Loss	Preamp Factor	Read Level	Factor
	MHz		dBuV/m	dB	dBuV/m	dB/m	dB	dB	dBuV	dB/m
1	1425.00	Peak	35.02	-38.98	74.00	24.71	3.52	27.12	33.91	1.11
2	1833.00	Peak	36.77	-37.23	74.00	26.38	3.85	26.41	32.95	3.82
3	2402.00	Peak	78.50	4.50	74.00	27.58	4.41	25.27	71.78	6.72
4	3057.00	Peak	38.94	-35.06	74.00	29.26	4.77	27.24	32.15	6.79
5	4893.00	Peak	45.54	-28.46	74.00	32.47	6.44	26.99	33.62	11.92
6	7426.00	Peak	48.17	-25.83	74.00	35.53	7.88	27.03	31.79	16.38

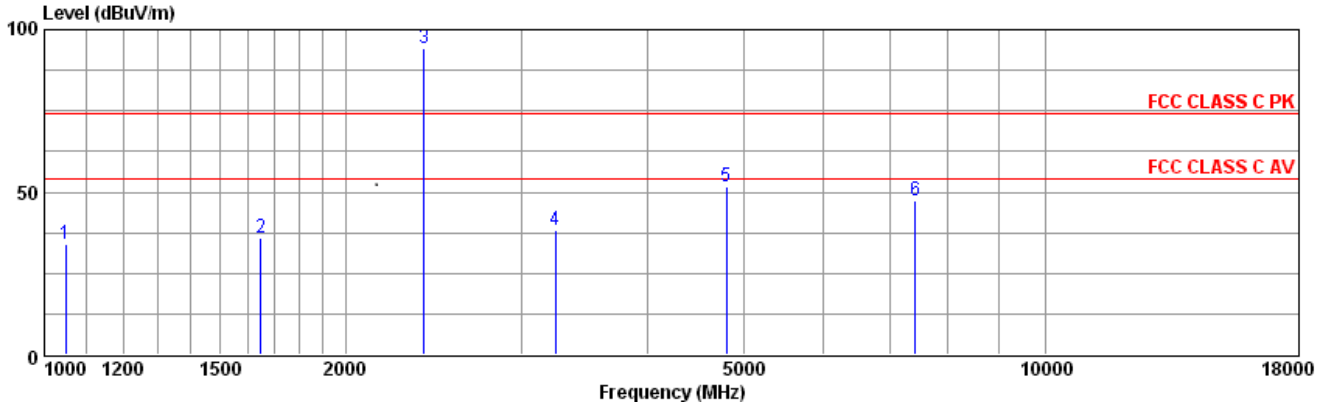
Radiated Emission 30MHz-1GHz Horizontal



Condition : FCC CLASS C 3m HL562 VERTICAL
: RBW:120.000KHz VBW:300.000KHz SWT:Auto
eut : GSM MOBILE PHONE

	Freq	Remark	Level	Over Limit	Limit Line	Antenna Factor	Cable Loss	Read Level	Factor
	MHz		dBuV/m	dB	dBuV/m	dB/m	dB	dBuV	dB/m
1	32.43	Peak	30.45	-9.55	40.00	17.84	1.36	11.25	19.20
2	59.58	Peak	29.56	-10.44	40.00	3.72	1.38	24.46	5.10
3	79.96	Peak	29.66	-10.34	40.00	8.18	1.44	20.04	9.62
4	227.88	Peak	23.47	-22.53	46.00	8.58	2.38	12.51	10.96
5	584.84	Peak	27.02	-18.98	46.00	16.76	3.97	6.29	20.73
6	923.37	Peak	35.05	-10.95	46.00	20.76	5.02	9.27	25.78

Radiated Emission 1GHz-18GHz Horizontal

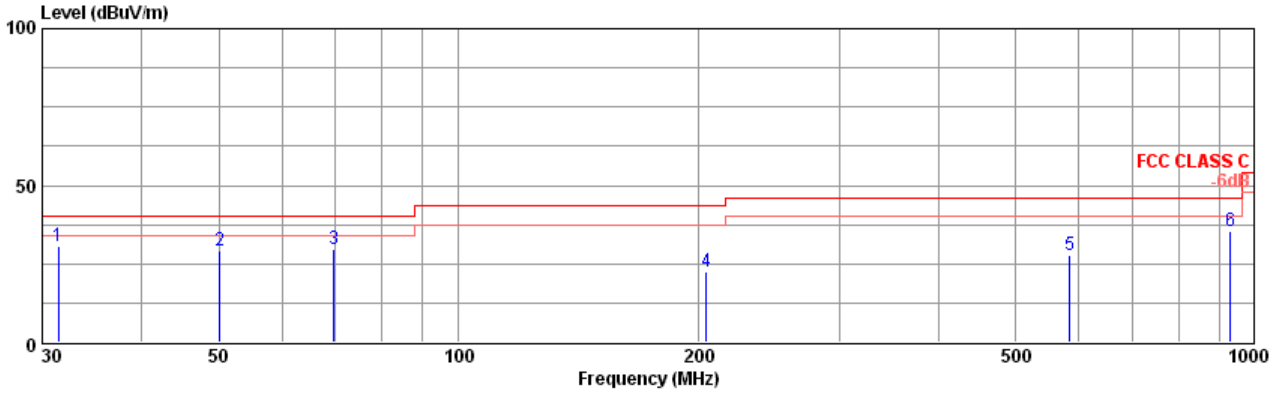


Condition : FCC CLASS C PK 3m HF906 HORIZONTAL
: RBW:1000.000KHz VBW:1000.000KHz SWT:Auto
eut : GSM MOBILE PHONE

	Freq	Remark	Level	Over Limit	Limit Line	Antenna Factor	Cable Loss	Preamp Factor	Read Level	Factor
	MHz		dBuV/m	dB	dBuV/m	dB/m	dB	dB	dBuV	dB/m
1	1051.00	Peak	33.97	-40.03	74.00	23.55	2.88	27.16	34.70	-0.73
2	1646.00	Peak	35.92	-38.08	74.00	25.54	3.67	27.05	33.76	2.16
3	2402.00	Peak	94.27	20.27	74.00	27.58	4.41	25.27	87.55	6.72
4	3244.00	Peak	38.48	-35.52	74.00	29.90	5.20	26.67	30.05	8.43
5	4808.00	Peak	51.69	-22.31	74.00	32.27	6.88	27.19	39.73	11.96
6	7426.00	Peak	47.33	-26.67	74.00	35.53	7.88	27.03	30.95	16.38

Test Channel :	39
Remark:	2402MHz is Fundamental signal which can be ignored

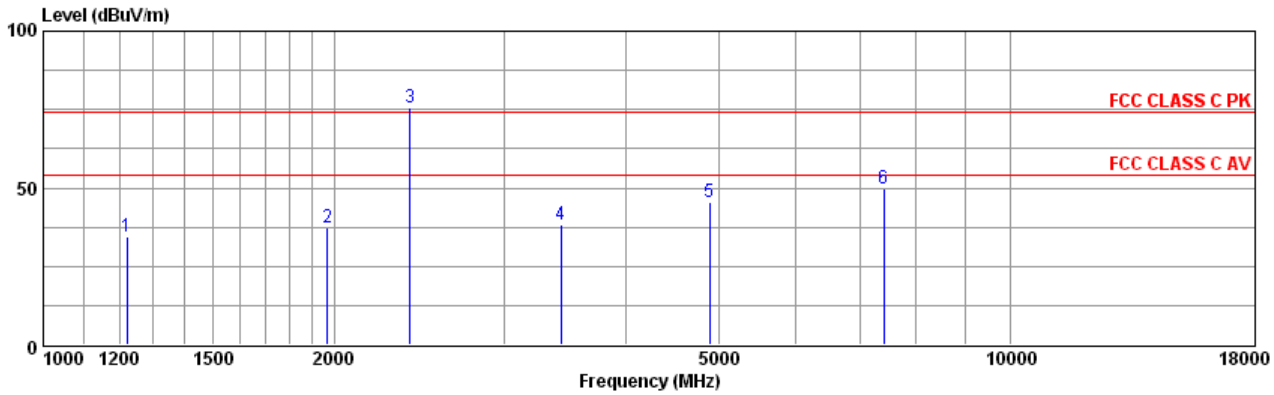
Radiated Emission 30MHz-1GHz Vertical



Condition : FCC CLASS C 3m HL562 VERTICAL
: RBW:120.000KHz VBW:300.000KHz SWT:Auto
eut : GSM MOBILE PHONE

	Freq	Remark	Level	Over Limit	Limit Line	Antenna Factor	Cable Loss	Read Level	Factor
	MHz		dBuV/m	dB	dBuV/m	dB/m	dB	dBuV	dB/m
1	31.46	Peak	30.84	-9.16	40.00	18.41	1.20	11.23	19.61
2	50.07	Peak	29.16	-10.84	40.00	7.79	1.16	20.21	8.95
3	69.77	Peak	29.50	-10.50	40.00	6.45	1.35	21.70	7.80
4	204.60	Peak	22.60	-20.90	43.50	7.48	2.28	12.84	9.76
5	583.87	Peak	27.54	-18.46	46.00	16.76	3.97	6.81	20.73
6	930.65	Peak	35.51	-10.49	46.00	20.84	5.07	9.60	25.91

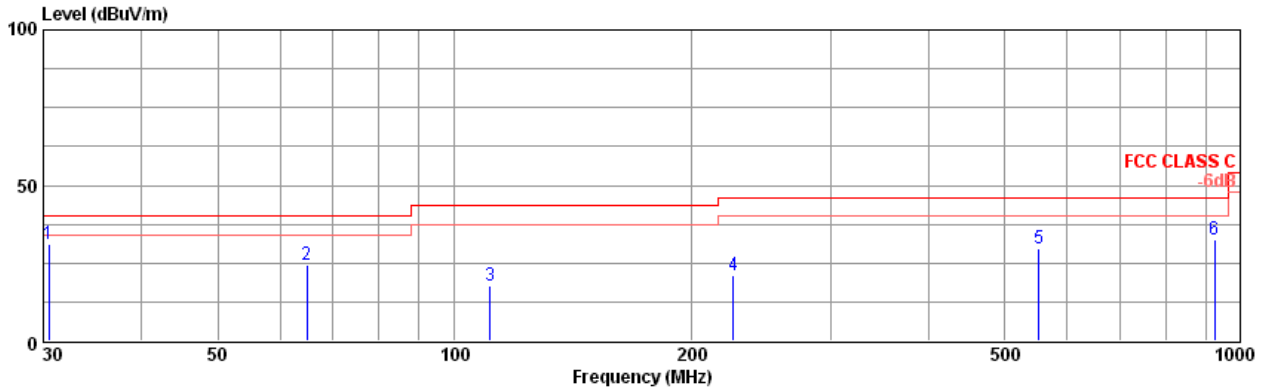
Radiated Emission 1GHz-18GHz Vertical



Condition : FCC CLASS C PK 3m HF906 VERTICAL
: RBW:1000.000KHz VBW:1000.000KHz SWT:Auto
eut : GSM MOBILE PHONE

	Freq	Remark	Level	Over Limit	Limit Line	Antenna Factor	Cable Loss	Preamp Factor	Read Level	Factor
	MHz		dBuV/m	dB	dBuV/m	dB/m	dB	dB	dBuV	dB/m
1	1221.00	Peak	34.22	-39.78	74.00	24.09	3.24	27.36	34.25	-0.03
2	1969.00	Peak	37.45	-36.55	74.00	26.96	4.20	26.15	32.44	5.01
3	2441.00	Peak	75.82	1.82	74.00	27.58	4.41	25.27	69.10	6.72
4	3431.00	Peak	38.51	-35.49	74.00	30.50	5.87	27.17	29.31	9.20
5	4893.00	Peak	45.23	-28.77	74.00	32.47	6.44	26.99	33.31	11.92
6	7409.00	Peak	49.75	-24.25	74.00	35.51	7.89	27.02	33.37	16.38

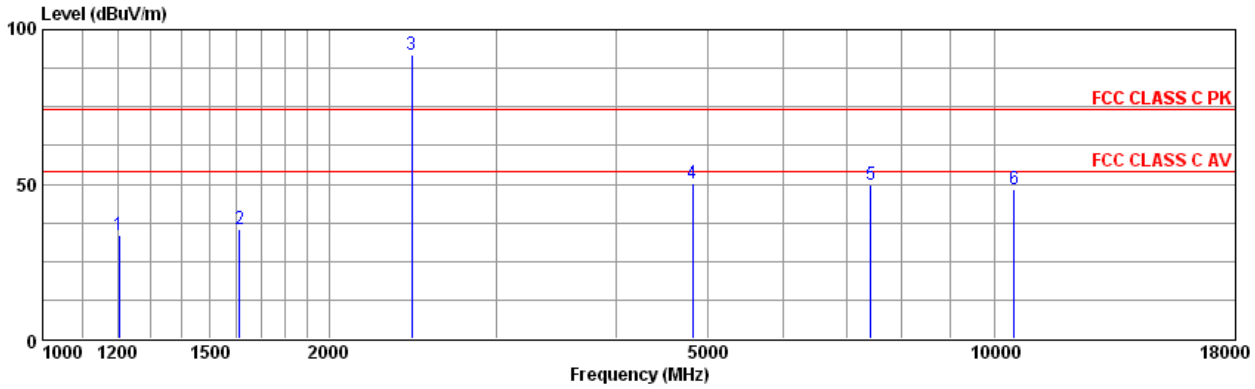
Radiated Emission 30MHz-1GHz Horizontal



Condition : FCC CLASS C 3m HL562 HORIZONTAL
: RBW:120.000KHz VBW:300.000KHz SWT:Auto
eut : GSM MOBILE PHONE

	Freq	Remark	Level	Over Limit	Limit Line	Antenna Factor	Cable Loss	Read Level	Factor
	MHz		dBuV/m	dB	dBuV/m	dB/m	dB	dBuV	dB/m
1	30.49	Peak	31.00	-9.00	40.00	18.88	1.09	11.03	19.97
2	64.92	Peak	24.32	-15.68	40.00	4.79	1.40	18.13	6.19
3	110.97	Peak	17.69	-25.81	43.50	9.16	1.62	6.91	10.78
4	225.94	Peak	20.91	-25.09	46.00	8.48	2.37	10.06	10.85
5	552.35	Peak	29.47	-16.53	46.00	16.24	3.90	9.33	20.14
6	923.85	Peak	32.54	-13.46	46.00	20.76	5.03	6.75	25.79

Radiated Emission 1GHz-18GHz Horizontal

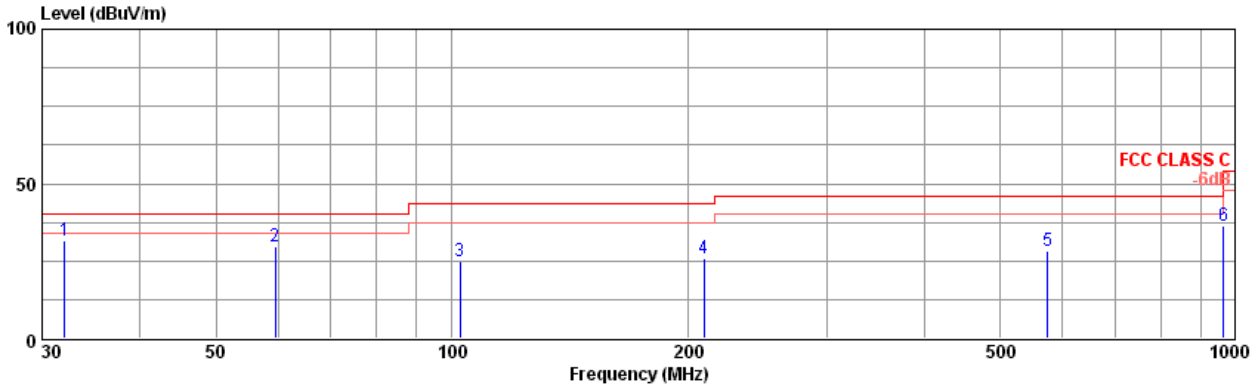


Condition : FCC CLASS C PK 3m HF906 HORIZONTAL
: RBW:1000.000KHz VBW:1000.000KHz SWT:Auto
eut : GSM MOBILE PHONE

	Freq	Remark	Level	Over Limit	Limit Line	Antenna Factor	Cable Loss	Preamp Factor	Read Level	Factor
	MHz		dBuV/m	dB	dBuV/m	dB/m	dB	dB	dBuV	dB/m
1	1204.00	Peak	33.47	-40.53	74.00	24.04	3.14	27.40	33.69	-0.22
2	1612.00	Peak	35.49	-38.51	74.00	25.39	3.56	27.10	33.64	1.85
3	2441.00	Peak	91.74	17.74	74.00	27.64	4.46	25.35	84.99	6.75
4	4825.00	Peak	50.15	-23.85	74.00	32.31	6.73	26.97	38.08	12.07
5	7426.00	Peak	49.68	-24.32	74.00	35.53	7.88	27.03	33.30	16.38
6	10503.00	Peak	48.32	-25.68	74.00	37.10	10.14	26.45	27.53	20.79

Test Channel :	78
Remark:	2402MHz is Fundamental signal which can be ignored

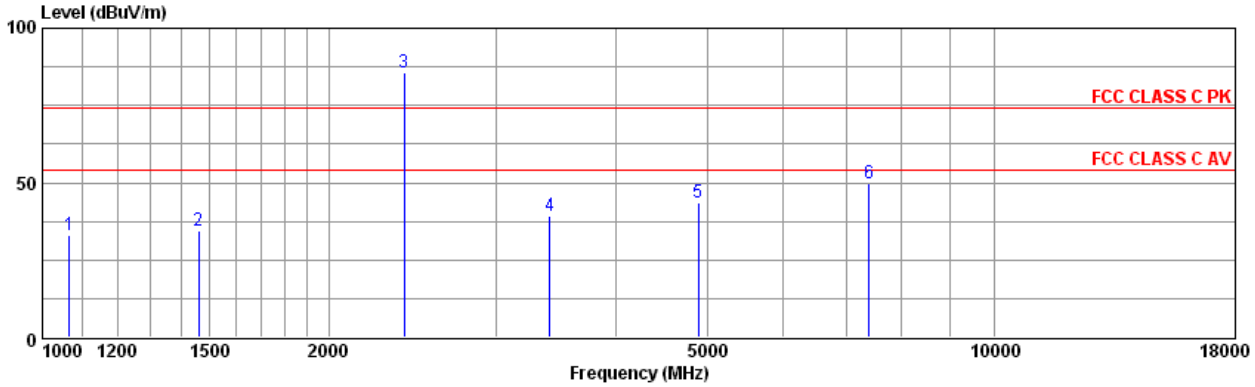
Radiated Emission 30MHz-1GHz Vertical



Condition : FCC CLASS C 3m HL562 VERTICAL
: RBW:120.000KHz VBW:300.000KHz SWT:Auto
eut : GSM MOBILE PHONE

	Freq	Remark	Level	Over Limit	Limit Line	Antenna Factor	Cable Loss	Read Level	Factor
	MHz		dBuV/m	dB	dBuV/m	dB/m	dB	dBuV	dB/m
1	32.04	Peak	31.58	-8.42	40.00	18.09	1.36	12.13	19.45
2	59.46	Peak	29.47	-10.53	40.00	3.72	1.38	24.37	5.10
3	102.40	Peak	24.91	-18.59	43.50	8.92	1.66	14.33	10.58
4	209.50	Peak	25.73	-17.77	43.50	7.74	2.27	15.72	10.01
5	574.31	Peak	28.46	-17.54	46.00	16.58	3.95	7.93	20.53
6	962.47	Peak	36.52	-17.38	53.90	21.13	5.30	10.09	26.43

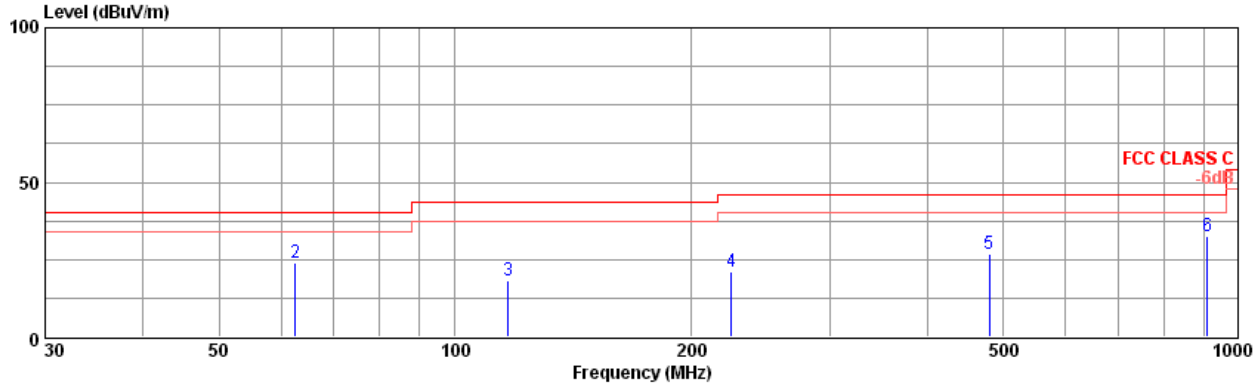
Radiated Emission 1GHz-18GHz Vertical



Condition : FCC CLASS C PK 3m HF906 VERTICAL
: RBW:1000.000KHz VBW:1000.000KHz SWT:Auto
eut : GSM MOBILE PHONE

	Freq	Remark	Level	Over Limit	Limit Line	Antenna Factor	Cable Loss	Preamp Factor	Read Level	Factor
	MHz		dBuV/m	dB	dBuV/m	dB/m	dB	dB	dBuV	dB/m
1	1068.00	Peak	32.87	-41.13	74.00	23.60	2.96	27.17	33.48	-0.61
2	1459.00	Peak	34.43	-39.57	74.00	24.81	3.44	27.09	33.27	1.16
3	2480.59	Peak	85.42	11.42	74.00	27.58	4.42	25.28	78.70	6.72
4	3414.00	Peak	39.02	-34.98	74.00	30.45	5.91	27.28	29.94	9.08
5	4893.00	Peak	43.36	-30.64	74.00	32.47	6.44	26.99	31.44	11.92
6	7392.00	Peak	49.88	-24.12	74.00	35.50	7.91	27.00	33.47	16.41

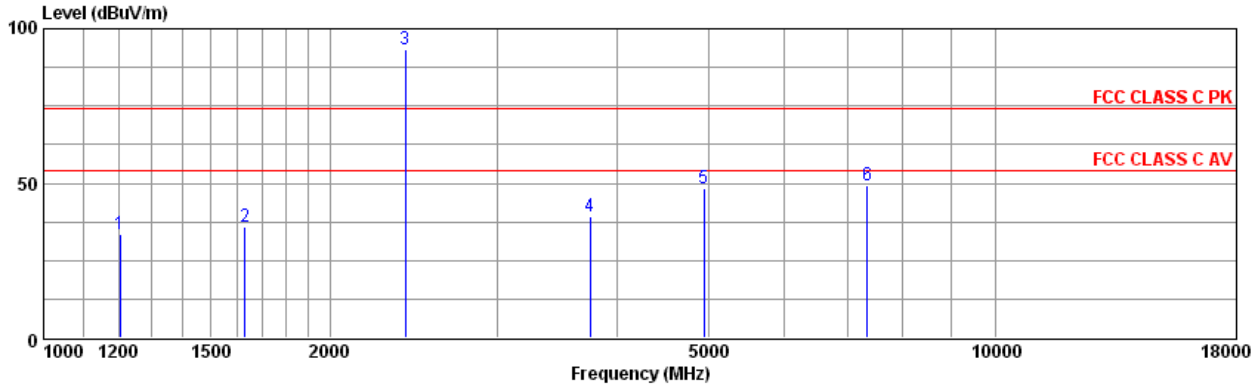
Radiated Emission 30MHz-1GHz Horizontal



Condition : FCC CLASS C 3m HL562 HORIZONTAL
: RBW:120.000KHz VBW:300.000KHz SWT:Auto
eut : GSM MOBILE PHONE

	Freq	Remark	Level	Over Limit	Limit Line	Antenna Factor	Cable Loss	Read Level	Factor
	MHz		dBuV/m	dB	dBuV/m	dB/m	dB	dBuV	dB/m
1	30.00	Peak	31.56	-8.44	40.00	19.18	1.12	11.26	20.30
2	62.50	Peak	24.15	-15.85	40.00	4.13	1.46	18.56	5.59
3	116.82	Peak	18.26	-25.24	43.50	9.46	1.68	7.12	11.14
4	224.97	Peak	20.96	-25.04	46.00	8.48	2.37	10.11	10.85
5	480.08	Peak	26.85	-19.15	46.00	15.12	3.48	8.25	18.60
6	910.76	Peak	32.60	-13.40	46.00	20.65	4.96	6.99	25.61

Radiated Emission 1GHz-18GHz Horizontal



Condition : FCC CLASS C PK 3m HF906 HORIZONTAL
: RBW:1000.000KHz VBW:1000.000KHz SWT:Auto
eut : GSM MOBILE PHONE

	Freq	Remark	Level	Over Limit	Limit Line	Antenna Factor	Cable Loss	Preamp Factor	Read Level	Factor
	MHz		dBuV/m	dB	dBuV/m	dB/m	dB	dB	dBuV	dB/m
1	1204.00	Peak	33.60	-40.40	74.00	24.04	3.14	27.40	33.82	-0.22
2	1629.00	Peak	35.87	-38.13	74.00	25.47	3.58	27.07	33.89	1.98
3	2480.59	Peak	93.42	19.42	74.00	27.58	4.42	25.28	86.70	6.72
4	3754.00	Peak	39.42	-34.58	74.00	31.15	6.02	27.12	29.37	10.05
5	4944.00	Peak	48.47	-25.53	74.00	32.59	6.48	27.24	36.64	11.83
6	7340.00	Peak	49.29	-24.71	74.00	35.44	8.02	26.98	32.81	16.48

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

Test Engineer :	Hogan. He	**Temperature :**	23℃~26℃
		Relative Humidity :	35%~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	Antenna	Schwarzbeck	VULB9165(30M-1G)	2011.11.09
04	Antenna	R&S	HF906(1G-18G)	2011.08.10
05	Antenna	Schwarzbeck	BBHA 9170 (15G-26.5G)	2011.11.09
06	Loop Antenna	Schwarzbeck	FMZB1516(9KHz~30MHz)	2012.01.07
07	High Pass Filter	R&S	System Integrated	2011.11.14
08	Thermal chamber	Hitachi	EC- 85MHP	2011.12.25
09	Pre-Amplifier	Agilent	83006A(0.01GHz-26.5GHz)	2011.8.16
10	Pre-Amplifier	Agilent	83006A(0.01GHz-26.5GHz)	2011.8.16
11	Helical Antenna	ETS	3102 (1G-10G)	NCR
12	Power Meter	R&S	NRP(10MHz~8GHz)	2011.12.05
13	Relay Switch	R&S	TS-REMI	NCR
14	LISN	ROHDE&SCHWARZ	ENV216 TWO-LINE V-NETWORK	2011.11.13
15	Power Meter	Agilent	E4418B (EPM Series)	2011.12.14
16	Power Sensor	Agilent	E4412A (E-series CW)	2011.12.14

5 Ancillary Equipment List

Product	Manufacturer	Model No.	Serial No.	FCC approval	Power Cord
Wlan AP	D-Link	DWL-2000 AP+A	B2D3161002856	KA2DWLG700A PB1	AC: I/P: Unshielded 1.8m DC:O/P: Unshielded 1.8m
Bluetooth headset	Jabra	BT2080	N/A	FCC DOC	Unshielded 1.8m

6 Uncertainty Evaluation

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

Contribution		Probability Distribution	Partition Coefficient	Ucertainty (ui)	
				Horizontal 30MHz-1GHz	Vertical 30MHz-1GHz
Cable Loss Calibration	U01	Standard deviation	2.00	0.04	0.04
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	Standard deviation	2.00	0.25	0.25
Measurement of the signal path mismatch	U06	U-Shape	1.41	0.69	0.69
Free-space antenna factor	U07	Standard deviation	2.00	0.50	0.50
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
Measurementantennaand theabsorbingmaterialintheimageof themutualcoupling effect	U10	Rectangular	1.73	0.58	0.58
Antenna phase center variation	U11	Rectangular	1.73	0.42	0.42
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	Triangle	2.45	0.46	0.56
Test distance error	U15	Rectangular	1.73	0.17	0.17
Desktop terrain clearance variation	U16	Standard deviation	2.00	0.05	0.05
Random uncertainty	U17	Standard deviation	1.00	0.18	0.03
Combined Standard Uncertainty Uc(y)	Uc	Standard deviation	1.00	1.89	1.91
Measuring Uncertainty for a level of Confidence of 95%(U= 2Uc(y))	U=kUc	Standard deviation	k	3.79	3.82

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

Contribution		Probability Distribution	Partition Coefficient	Ucertainty (ui)	
				Horizontal 30MHz-1GHz	Vertical 30MHz-1GHz
Cable Loss Calibration	U01	Standard deviation	2	0.04	0.04
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	Standard deviation	2.00	0.25	0.25
Measurement of the signal path mismatch	U06	U-Shape	1.41	0.69	0.69
Free-space antenna factor	U07	Standard deviation	2.00	0.50	0.50
Antenna Factor Interpolation for Frequency	U08	Rectangular	1.73	0.173	0.173
Antenna factor with height in the correlation	U09	Rectangular	1.73	NA	NA
Measurementantennaand theabsorbingmaterialintheimageof themutualcoupling effect	U10	Rectangular	1.73	0.58	0.58
Antenna phase center variation	U11	Rectangular	1.73	0.13	0.13
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	Triangle	2.45	1.48	1.55
Test distance error	U15	Rectangular	1.73	0.17	0.17
Desktop terrain clearance variation	U16	Standard deviation	2.00	0.05	0.05
Random uncertainty	U17	Standard deviation	1.00	0.01	0.08
Combined Standard Uncertainty Uc(y)	Uc	Standard deviation	1.00	2.31	2.36
Measuring Uncertainty for a level of Confidence of 95%(U= 2Uc(y))	U= kUc	Standard deviation	K	4.63	4.71