



Variant FCC/IC RF Test Report

APPLICANT : Qualcomm Atheros, Inc.
EQUIPMENT : 1X1 802.11b/g/n – BT4.0 Combo PCIe minicard
BRAND NAME : Qualcomm Atheros
MODEL NAME : QCWB335
FCC ID : PPD-QCWB335
IC : 4104A-QCWB335
STANDARD : FCC Part 15 Subpart C §15.247
IC RSS-210 Issue 8
CLASSIFICATION : (DTS) Digital Transmission System

This is a variant report which is only valid together with the original test report.

The WiFi + Bluetooth module was tested on extended card inserted to a host laptop PC.

The product was received on Apr. 25, 2012 and completely tested on Jun. 05, 2012. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.4-2003 and shown the compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC., the test report shall not be reproduced except in full.

Reviewed by:

Jones Tsai / Manager



SPORTON INTERNATIONAL INC.

No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C.



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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR240322-06	Rev. 01	This is a variant report by adding Bluetooth and WLAN co-location function. All the test cases were performed on original report which can be referred to Sporton Report No. FR240322A and FR240332B.	Jun. 08, 2012



SUMMARY OF TEST RESULT

Report Section	FCC Rule	IC Rule	Description	Limit	Result	Remark
3.1	15.247(b)	A8.4	Power Output	$\leq 30\text{dBm}$	Pass	-
3.2	15.247(d)	A8.5	Frequency Band Edges	$\leq 20\text{dBc}$	Pass	-
3.3	15.247(d)	A8.5	Spurious Emission	$< 20\text{ dBc}$	Pass	-
3.4	15.203 & 15.247(b)	A8.4	Antenna Requirement	N/A	Pass	-



1 General Description

1.1 Applicant

Qualcomm Atheros, Inc.
1700 Technology Drive, San Jose, CA95110

1.2 Manufacturer

Qualcomm Atheros, Inc.
1700 Technology Drive, San Jose, CA95110

1.3 Testing Site

Test Site	SPORTON INTERNATIONAL INC.		
Test Site Location	No. 52, Hwa Ya 1 st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL: +886-3-3273456 / FAX: +886-3-3284978		
Test Site No.	Sporton Site No.		FCC/IC Registration No.
	TH02-HY	03CH05-HY	722060/4086B-1

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 KDB Publication No. 558074 D01 DTS Meas. Guidance DR01
- ♦ KDB 453039 Bluetooth device DTS filing
- ♦ FCC Public Notice DA 00-705
- ♦ ANSI C63.4-2003
- ♦ IC RSS-210 Issue 8
- ♦ IC RSS-Gen Issue 3

Remark:

1. All test items were verified and recorded according to the standards and without any deviation during 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.



1.5 Ancillary Equipment List

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	Notebook	DELL	Vostro 1510	FCC DoC	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
2.	Notebook	DELL	Studio	FCC DoC	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m

2 Test Configuration of Equipment Under Test

2.1 Feature of Equipment Under Test

Product Feature & Specification	
Equipment	1X1 802.11b/g/n – BT4.0 Combo PCIe minicard
Brand Name	Qualcomm Atheros
Model Name	QCWB335
FCC ID	PPD-QCWB335
IC	4104A-QCWB335
Tx/Rx Frequency Range	WLAN: 2400 MHz ~ 2483.5 MHz Bluetooth: 2400 MHz ~ 2483.5 MHz
Number of Channels	11 for 802.11b, 802.11g, 802.11n (20MHz) 7 for 802.11n (40MHz) 79 for Bluetooth 40 for Bluetooth 4.0
Carrier Frequency of Each Channel	2412+(n-1)*5 MHz; n=1~11 for WLAN 2402+n*1 MHz; n=0~78 for Bluetooth 2.1+EDR 40 Channel(37 hopping + 3 advertising channel) for Bluetooth 4.0
Channel Spacing	5 MHz for WLAN 1 MHz for Bluetooth 2 MHz for Bluetooth 4.0
Transfer Rate	802.11b: 11 / 5.5 / 2 / 1Mbps 802.11g: 54 / 48 / 36 / 24 / 18 / 12 / 9 / 6Mbps 802.11n (20MHz, Guard Interval: 800ns): 65 / 58.5 / 52 / 39 / 26 / 19.5 / 13 / 6.5Mbps 802.11n (40MHz, Guard Interval: 800ns): 135 / 121.5 / 108 / 81 / 54 / 40.5 / 27 / 13.5 Mbps 802.11n (20MHz, Guard Interval: 400ns): 72.2 / 65 / 57.8 / 43.3 / 28.9 / 21.7 / 14.4 / 7.2Mbps 802.11n (40MHz, Guard Interval: 400ns): 150 / 135 / 120 / 90 / 60 / 45 / 30 / 15Mbps
Maximum Output Power to Antenna	802.11b : 19.94 dBm (0.0986 W) 802.11g : 24.91 dBm (0.3097 W) 802.11n (BW 20MHz) : 24.25 dBm (0.2661 W) 802.11n (BW 40MHz) : 21.31 dBm (0.1352 W)
Antenna Type	Antenna 1 : PIFA Antenna with gain 3.62 dBi Antenna 2 : Dipole Antenna with gain 3.20 dBi
Type of Modulation	<WLAN> 802.11b : DSSS (BPSK / QPSK / CCK) 802.11g/n : OFDM (BPSK / QPSK / 16QAM / 64QAM) <Low Energy Bluetooth> Bluetooth 4.0 : GFSK <Standard Bluetooth> Bluetooth (1Mbps) : GFSK Bluetooth 2.1 EDR (2Mbps) : $\pi/4$ -DQPSK Bluetooth 2.1 EDR (3Mbps) : 8-DPSK Bluetooth 3.0 : GFSK, $\pi/4$ -DQPSK, 8-DPSK
EUT Stage	Identical Prototype

Remark: The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

2.2 WLAN RF Power for Bluetooth and WLAN Co-location

Preliminary tests were performed in different data rate as below table and the highest power data rates were chosen for full test in the following sections to demonstrate compliance to the FCC limit line.

2.4GHz 802.11b mode				
Data Rate (MHz)	1M bps	2M bps	5.5M bps	11M bps
Peak Power (dBm)	19.94	19.88	19.90	19.87

2.4GHz 802.11g mode								
Data Rate (MHz)	6M bps	9M bps	12M bps	18M bps	24M bps	36M bps	48M bps	54M bps
Peak Power (dBm)	24.91	24.84	24.78	24.87	24.73	24.76	24.90	24.78

2.4GHz 802.11n (BW 20MHz) mode (Guard Interval:800 ns)								
Data Rate (MHz)	6.5M bps	13M bps	19.5M bps	26M bps	39M bps	52M bps	58M bps	65M bps
Peak Power (dBm)	24.25	24.19	24.04	24.00	24.18	24.13	24.08	24.22

2.4GHz 802.11n (BW 20MHz) mode (Guard Interval: 400 ns)								
Data Rate (MHz)	7.2M bps	14.4M bps	21.7M bps	28.9M bps	43.3M bps	57.8M bps	65M bps	72.2M bps
Peak Power (dBm)	24.21	24.12	24.02	24.17	24.11	24.14	23.99	24.03

2.4GHz 802.11n (BW 40MHz) mode (Guard Interval: 800 ns)								
Data Rate (MHz)	13.5M bps	27M bps	40.5M bps	54M bps	81M bps	108M bps	121.5M bps	135M bps
Peak Power (dBm)	21.31	20.86	21.15	21.21	21.12	21.06	21.01	21.27

2.4GHz 802.11n (BW 40MHz) mode (Guard Interval: 400 ns)								
Data Rate (MHz)	15M bps	30M bps	45M bps	60M bps	90M bps	120M bps	135M bps	150M bps
Peak Power (dBm)	21.23	20.93	20.98	21.01	20.9	21.06	21.11	21.19

2.3 WLAN Maximum Peak Conducted Output Power for Bluetooth and WLAN Co-location:

Band	2.4GHz 802.11b RF Power (dBm) Duty Cycle: 100.00%			2.4GHz 802.11g RF Power (dBm) Duty Cycle: 97.21%		
	Channel	1	6	11	1	6
Frequency (MHz)	2412	2437	2462	2412	2437	2462
Peak Power	18.17	19.94	18.54	19.73	24.91	20.38

Band	2.4GHz 802.11n (BW 20MHz) RF Power (dBm) (Guard Interval: 800 ns) Duty Cycle: 96.93%		
	Channel	1	6
Frequency (MHz)	2412	2437	2462
Peak Power	19.73	24.25	20.58

Band	2.4GHz 802.11n (BW 40MHz) RF Power (dBm) (Guard Interval: 800 ns) Duty Cycle: 96.10%		
	Channel	3	6
Frequency (MHz)	2422	2437	2452
Peak Power	19.76	21.31	20.19

Remark:

The data rates of WLAN 802.11b/g/n were set in 1Mbps for 802.11b, 6Mbps for 802.11g, 6.5Mbps for 802.11n (BW 20MHz) with Guard Interval setting = 800 ns, 13.5Mbps for 802.11n (BW 40MHz) with Guard Interval setting = 800 ns for all the test cases due to the highest RF output power.

2.4 WLAN Maximum Average Conducted Output Power for Bluetooth and WLAN Co-location:

Band	2.4GHz 802.11b RF Power (dBm)			2.4GHz 802.11g RF Power (dBm)		
Channel	1	6	11	1	6	11
Frequency (MHz)	2412	2437	2462	2412	2437	2462
Average Power	15.96	18.04	16.16	9.59	18.01	10.56

Band	2.4GHz 802.11n (BW 20MHz) RF Power (dBm) (Guard Interval: 800 ns)		
Channel	1	6	11
Frequency (MHz)	2412	2437	2462
Average Power	9.58	16.45	10.69

Band	2.4GHz 802.11n (BW 40MHz) RF Power (dBm) (Guard Interval: 800 ns)		
Channel	3	6	9
Frequency (MHz)	2422	2437	2452
Average Power	9.78	11.19	10.19

Remark:

1. The average power, which is used by the test method, Option 3 (average power meter method), in DTS Meas. Guidance DR01, is reporting only.
2. The EUT is programmed to transmit signals continuously.

2.5 Antenna Information

Brand / Model Name	Type	Frequency Range (MHz)	Antenna Gain (dBi)
Wistron Neweb Corporation / EBJ Aux	PIFA	2400 ~ 2483.5	3.62
INPAQ / DAMA1BM30000402	Dipole	2400 ~ 2483.5	3.20

	Antenna port 0	Antenna port 1
Single antenna	WLAN/BT coexistence	RX diversity or terminated
Dual antenna	WLAN TX/RX	Bluetooth TX/RX



2.6 Test Mode

Module support concurrent WLAN (802.11b/g/n (BW 20MHz) + BT transmission and BT TX will be +/-17MHz away from the WLAN channel. WLAN (802.11n (BW 40MHz) + BT transmission and BT TX will be +/-27MHz away from the WLAN channel.

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 (30 MHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower).

WORST-CASE CONFIGURATION AND MODE

The worst-case data rates are determined to be as follows for each mode, based on the investigations by measuring the average power, peak power and PPSD across all the data rates, bandwidths, modulations and spatial stream modes.

Thus all tests were made with following data rates:

802.11b mode, 20 MHz Channel Bandwidth, 1 Mb/s, CCK Modulation:

802.11g mode, 20 MHz Channel Bandwidth, 6 Mb/s, OFDM Modulation:

802.11n HT20 mode, 20 MHz Channel Bandwidth, MCS0, 6.5 Mb/s, OFDM Modulation;

802.11n HT40 mode, 40 MHz Channel Bandwidth, MCS0, 13.5 Mb/s, OFDM Modulation;



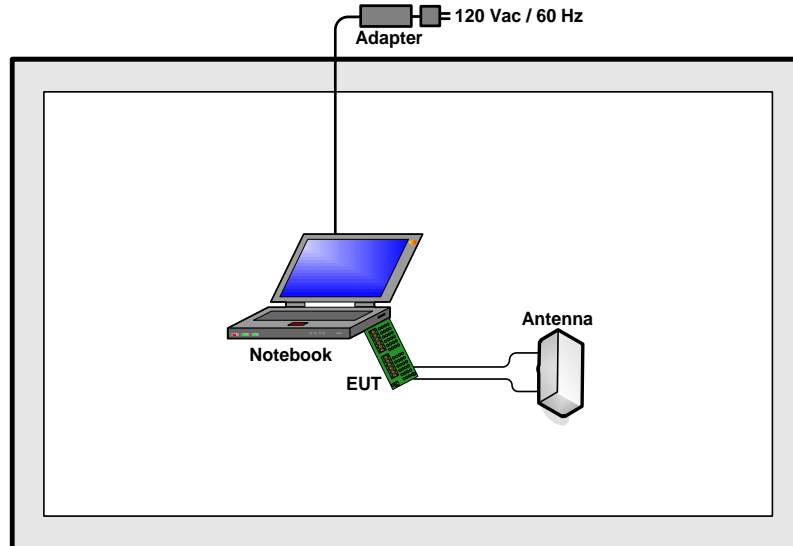
The details of test channels and bandwidth were for RF conductive measurement.

Test Mode	Ant.	Bluetooth	WLAN	CSE	RSE – Band Edge	Note
1	PIFA	Bluetooth 3DH1 CH27 (2429MHz)	802.11b CH01(2412MHz)	√	√	E.g.: BT (Ch27) + WLAN (Ch01)
2	PIFA	Bluetooth 3DH1 CH18 (2420MHz)	802.11b CH06(2437MHz)	√	√	E.g.: BT (Ch18) + WLAN (Ch06)
3	PIFA	Bluetooth 3DH1 CH52 (2454MHz)	802.11b CH06(2437MHz)	√	√	E.g.: BT (Ch52) + WLAN (Ch06)
4	PIFA	Bluetooth 3DH1 CH77 (2479MHz)	802.11b CH11(2462MHz)	√	√	E.g.: BT (Ch77) + WLAN (Ch11)
5	PIFA	Bluetooth 3DH1 CH27 (2429MHz)	802.11g CH01(2412MHz)	√	√	E.g.: BT (Ch27) + WLAN (Ch01)
6	PIFA	Bluetooth 3DH1 CH18 (2420MHz)	802.11g CH06(2437MHz)	√	√	E.g.: BT (Ch18) + WLAN (Ch06)
7	PIFA	Bluetooth 3DH1 CH52 (2454MHz)	802.11g CH06(2437MHz)	√	√	E.g.: BT (Ch52) + WLAN (Ch06)
8	PIFA	Bluetooth 3DH1 CH77 (2479MHz)	802.11g CH11(2462MHz)	√	√	E.g.: BT (Ch77) + WLAN (Ch11)
9	PIFA	Bluetooth 3DH1 CH27 (2429MHz)	802.11n (BW 20MHz) CH01(2412MHz)	√	√	E.g.: BT (Ch27) + WLAN (Ch01)
10	PIFA	Bluetooth 3DH1 CH18 (2420MHz)	802.11n (BW 20MHz) CH06(2437MHz)	√	√	E.g.: BT (Ch18) + WLAN (Ch06)
11	PIFA	Bluetooth 3DH1 CH52 (2454MHz)	802.11n (BW 20MHz) CH06(2437MHz)	√	√	E.g.: BT (Ch52) + WLAN (Ch06)
12	PIFA	Bluetooth 3DH1 CH77 (2479MHz)	802.11n (BW 20MHz) CH11(2462MHz)	√	√	E.g.: BT (Ch77) + WLAN (Ch11)
13	PIFA	Bluetooth 3DH1 CH47 (2449MHz)	802.11n (BW 40MHz) CH03(2422MHz)	√	√	E.g.: BT (Ch47) + WLAN (Ch03)
14	PIFA	Bluetooth 3DH1 CH08 (2410MHz)	802.11n (BW 40MHz) CH06(2437MHz)	√	√	E.g.: BT (Ch08) + WLAN (Ch06)
15	PIFA	Bluetooth 3DH1 CH62 (2464MHz)	802.11n (BW 40MHz) CH06(2437MHz)	√	√	E.g.: BT (Ch62) + WLAN (Ch06)
16	PIFA	Bluetooth 3DH1 CH77 (2479MHz)	802.11n (BW 40MHz) CH09(2452MHz)	√	√	E.g.: BT (Ch77) + WLAN (Ch09)



Test Mode	Ant.	Bluetooth	WLAN	CSE	RSE – Band Edge	Note
17	Dipole	Bluetooth 3DH1 CH27 (2429MHz)	802.11b CH01(2412MHz)	√	√	E.g.: BT (Ch27) + WLAN (Ch01)
18	Dipole	Bluetooth 3DH1 CH18 (2420MHz)	802.11b CH06(2437MHz)	√	√	E.g.: BT (Ch18) + WLAN (Ch06)
19	Dipole	Bluetooth 3DH1 CH52 (2454MHz)	802.11b CH06(2437MHz)	√	√	E.g.: BT (Ch52) + WLAN (Ch06)
20	Dipole	Bluetooth 3DH1 CH77 (2479MHz)	802.11b CH11(2462MHz)	√	√	E.g.: BT (Ch77) + WLAN (Ch11)
21	Dipole	Bluetooth 3DH1 CH27 (2429MHz)	802.11g CH01(2412MHz)	√	√	E.g.: BT (Ch27) + WLAN (Ch01)
22	Dipole	Bluetooth 3DH1 CH18 (2420MHz)	802.11g CH06(2437MHz)	√	√	E.g.: BT (Ch18) + WLAN (Ch06)
23	Dipole	Bluetooth 3DH1 CH52 (2454MHz)	802.11g CH06(2437MHz)	√	√	E.g.: BT (Ch52) + WLAN (Ch06)
24	Dipole	Bluetooth 3DH1 CH77 (2479MHz)	802.11g CH11(2462MHz)	√	√	E.g.: BT (Ch77) + WLAN (Ch11)
25	Dipole	Bluetooth 3DH1 CH27 (2429MHz)	802.11n (BW 20MHz) CH01(2412MHz)	√	√	E.g.: BT (Ch27) + WLAN (Ch01)
26	Dipole	Bluetooth 3DH1 CH18 (2420MHz)	802.11n (BW 20MHz) CH06(2437MHz)	√	√	E.g.: BT (Ch18) + WLAN (Ch06)
27	Dipole	Bluetooth 3DH1 CH52 (2454MHz)	802.11n (BW 20MHz) CH06(2437MHz)	√	√	E.g.: BT (Ch52) + WLAN (Ch06)
28	Dipole	Bluetooth 3DH1 CH77 (2479MHz)	802.11n (BW 20MHz) CH11(2462MHz)	√	√	E.g.: BT (Ch77) + WLAN (Ch11)
29	Dipole	Bluetooth 3DH1 CH47 (2449MHz)	802.11n (BW 40MHz) CH03(2422MHz)	√	√	E.g.: BT (Ch47) + WLAN (Ch03)
30	Dipole	Bluetooth 3DH1 CH08 (2410MHz)	802.11n (BW 40MHz) CH06(2437MHz)	√	√	E.g.: BT (Ch08) + WLAN (Ch06)
31	Dipole	Bluetooth 3DH1 CH62 (2464MHz)	802.11n (BW 40MHz) CH06(2437MHz)	√	√	E.g.: BT (Ch62) + WLAN (Ch06)
32	Dipole	Bluetooth 3DH1 CH77 (2479MHz)	802.11n (BW 40MHz) CH09(2452MHz)	√	√	E.g.: BT (Ch77) + WLAN (Ch09)

2.7 Connection Diagram of Test System



2.8 RF Utility

The programmed RF utility, execute "artgui.exe" is installed in Notebook to provide channel selection, power level, data rate and the application type. RF Utility can send transmitting signal for all testing. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product.

3 Test Result

3.1 Output Power Measurement

3.1.1 Limit of Output Power

For systems using digital modulation in the 2400-2483.5MHz, the limit for peak output power is 30dBm. If transmitting antenna of directional gain greater than 6dBi are used the peak output power from the intentional radiator shall be reduced below the above stated value by the amount in dB that the directional gain of the antenna exceeds 6 dBi. In case of point-to-point operation, the limit has to be reduced by 1dB for every 3dB that the directional gain of the antenna exceeds 6dBi.

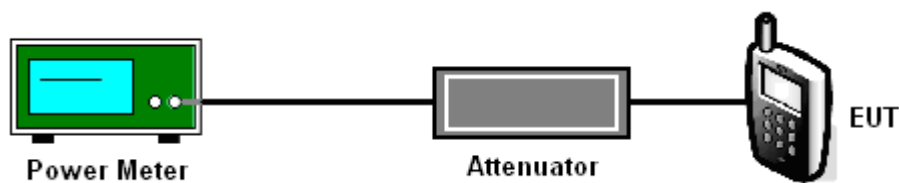
3.1.2 Measuring Instruments

See list of measuring instruments of this test report.

3.1.3 Test Procedures

1. The testing follows the Measurement Procedure Option 3 (peak power meter method) of FCC KDB No. 558074 DTS Meas. Guidance DR01.
2. The RF output of EUT was connected to the power meter by a low loss cable
3. Measure the power by power meter

3.1.4 Test Setup





3.1.5 Test Result of Output Power

Test Mode :	802.11b	Temperature :	24~26°C
Test Engineer :	Pinkston Tu	Relative Humidity :	50~53%

Channel	Frequency (MHz)	802.11b Peak Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	18.17	30	Pass
06	2437	19.94	30	Pass
11	2462	18.54	30	Pass

Test Mode :	802.11g	Temperature :	24~26°C
Test Engineer :	Pinkston Tu	Relative Humidity :	50~53%

Channel	Frequency (MHz)	802.11g Peak Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	19.73	30	Pass
06	2437	24.91	30	Pass
11	2462	20.38	30	Pass

Test Mode :	802.11n (BW 20MHz)	Temperature :	24~26°C
Test Engineer :	Pinkston Tu	Relative Humidity :	50~53%
Guard Interval:	800 ns		

Channel	Frequency (MHz)	802.11n (BW 20MHz) Peak Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	19.73	30	Pass
06	2437	24.25	30	Pass
11	2462	20.58	30	Pass



Test Mode :	802.11n (BW 40MHz)	Temperature :	24~26°C
Test Engineer :	Pinkston Tu	Relative Humidity :	50~53%
Guard Interval:	800 ns		

Channel	Frequency (MHz)	802.11n (BW 40MHz) Peak Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
03	2422	19.76	30	Pass
06	2437	21.31	30	Pass
09	2452	20.19	30	Pass



3.2 Radiation Band Edges Measurement

3.2.1 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. 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.

3.2.2 Measuring Instruments

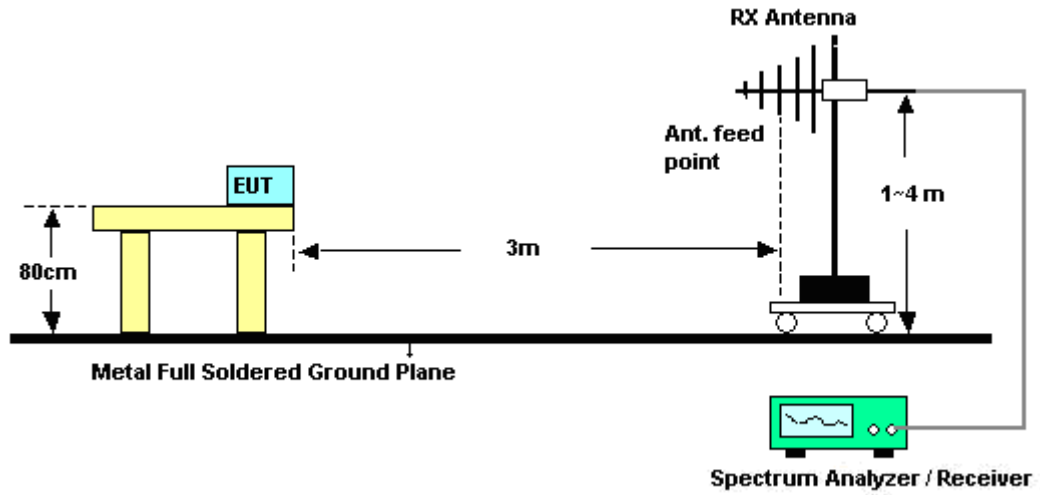
See list of measuring instruments of this test report.

3.2.3 Test Procedures

1. The testing follows the guidelines in ANSI C63.4-2003 and the Measurement Procedure of FCC KDB Publication No. 558074 D01 DTS Meas. Guidance DR01.
2. Radiated emission test: Apply to band edge emissions that falling on 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 measurement above 1 GHz, set RBW = 1MHz, VBW = 10 Hz, Sweep=Auto. If the emission is pulsed, then modify the unit for continuous operation. Use the settings in this paragraph to correct the reading level by subtracting the peak-average correction factor, derived from the appropriate duty cycle calculation per 15.35(b) and (c).

3.2.4 Test Setup

<Radiated Band Edges>





3.2.5 Test Result of Radiated Band Edges

Test Mode :	PIFA Antenna Bluetooth 3DH1 (Ch27) + 802.11b (Ch01)	Temperature :	23~24°C
Test Engineer :	David Ke	Relative Humidity :	45~46%

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2387.22	68.29	-5.71	74	67.57	32.02	4.58	35.88	183	93	Peak
2387.13	52.08	-1.92	54	51.36	32.02	4.58	35.88	183	93	Average
2484.83	53.95	-20.05	74	53.03	32.09	4.64	35.81	183	93	Peak
2496.8	41.38	-12.62	54	40.44	32.1	4.64	35.8	183	93	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2387.22	63.07	-10.93	74	62.35	32.02	4.58	35.88	100	11	Peak
2387.04	48.25	-5.75	54	47.53	32.02	4.58	35.88	100	11	Average
2496.4	52.07	-21.93	74	51.13	32.1	4.64	35.8	100	11	Peak
2497.86	39.28	-14.72	54	38.34	32.1	4.64	35.8	100	11	Average



Test Mode :	PIFA Antenna Bluetooth 3DH1 (Ch18) + 802.11b (Ch06)	Temperature :	23~24°C
Test Engineer :	David Ke	Relative Humidity :	45~46%

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2386.05	56.17	-17.83	74	55.45	32.02	4.58	35.88	100	159	Peak
2346.9	43.69	-10.31	54	43.05	31.98	4.55	35.89	100	159	Average
2496.73	54.21	-19.79	74	53.27	32.1	4.64	35.8	100	159	Peak
2483.5	39.84	-14.16	54	38.92	32.09	4.64	35.81	100	159	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2386.05	54.08	-19.92	74	53.36	32.02	4.58	35.88	100	216	Peak
2386.05	40.46	-13.54	54	39.74	32.02	4.58	35.88	100	216	Average
2484.43	56.08	-17.92	74	55.16	32.09	4.64	35.81	100	216	Peak
2483.5	41.29	-12.71	54	40.37	32.09	4.64	35.81	100	216	Average



Test Mode :	PIFA Antenna Bluetooth 3DH1 (Ch52) + 802.11b (Ch06)	Temperature :	23~24°C
Test Engineer :	David Ke	Relative Humidity :	45~46%

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2373.81	54.39	-19.61	74	53.7	32	4.57	35.88	100	159	Peak
2348.07	43.76	-10.24	54	43.12	31.98	4.55	35.89	100	159	Average
2484.37	53.83	-20.17	74	52.91	32.09	4.64	35.81	100	159	Peak
2483.5	39.83	-14.17	54	38.91	32.09	4.64	35.81	100	159	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2386.32	51.87	-22.13	74	51.15	32.02	4.58	35.88	100	216	Peak
2389.83	39.08	-14.92	54	38.34	32.02	4.58	35.86	100	216	Average
2484.1	55.46	-18.54	74	54.54	32.09	4.64	35.81	100	216	Peak
2483.83	41.86	-12.14	54	40.94	32.09	4.64	35.81	100	216	Average



Test Mode :	PIFA Antenna Bluetooth 3DH1 (Ch77) + 802.11b (Ch11)	Temperature :	23~24°C
Test Engineer :	David Ke	Relative Humidity :	45~46%

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2369.85	51.86	-22.14	74	51.17	32	4.57	35.88	100	80	Peak
2372.28	41.23	-12.77	54	40.54	32	4.57	35.88	100	80	Average
2486.69	73.5	-0.5	74	72.58	32.09	4.64	35.81	100	80	Peak
2487.09	53.46	-0.54	54	52.54	32.09	4.64	35.81	100	80	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2375.16	52.59	-21.41	74	51.9	32	4.57	35.88	120	18	Peak
2374.98	41.37	-12.63	54	40.68	32	4.57	35.88	120	18	Average
2486.56	71.3	-2.7	74	70.38	32.09	4.64	35.81	120	18	Peak
2487.02	50.68	-3.32	54	49.76	32.09	4.64	35.81	120	18	Average



Test Mode :	PIFA Antenna Bluetooth 3DH1 (Ch27) + 802.11g (Ch01)	Temperature :	23~24°C
Test Engineer :	David Ke	Relative Humidity :	45~46%

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2389.83	73.03	-0.97	74	72.29	32.02	4.58	35.86	100	157	Peak
2390.01	49.38	-4.62	54	48.64	32.02	4.58	35.86	100	157	Average
2497.47	54.12	-19.88	74	53.18	32.1	4.64	35.8	100	157	Peak
2497.8	39.92	-14.08	54	38.98	32.1	4.64	35.8	100	157	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2385.06	72.7	-1.3	74	72	32	4.58	35.88	103	211	Peak
2390	48.14	-5.86	54	47.4	32.02	4.58	35.86	103	211	Average
2499.73	53.43	-20.57	74	52.49	32.1	4.64	35.8	103	211	Peak
2499.26	39.8	-14.2	54	38.86	32.1	4.64	35.8	103	211	Average



Test Mode :	PIFA Antenna Bluetooth 3DH1 (Ch18) + 802.11g (Ch06)	Temperature :	23~24°C
Test Engineer :	David Ke	Relative Humidity :	45~46%

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2387.58	64.08	-9.92	74	63.36	32.02	4.58	35.88	100	81	Peak
2389.92	43.44	-10.56	54	42.7	32.02	4.58	35.86	100	81	Average
2486.56	63.91	-10.09	74	62.99	32.09	4.64	35.81	100	81	Peak
2484.17	44.93	-9.07	54	44.01	32.09	4.64	35.81	100	81	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2388.3	61.47	-12.53	74	60.75	32.02	4.58	35.88	100	189	Peak
2351.67	42.63	-11.37	54	41.98	31.99	4.55	35.89	100	189	Average
2483.83	61.66	-12.34	74	60.74	32.09	4.64	35.81	100	189	Peak
2483.5	43.43	-10.57	54	42.51	32.09	4.64	35.81	100	189	Average



Test Mode :	PIFA Antenna Bluetooth 3DH1 (Ch52) + 802.11g (Ch06)	Temperature :	23~24°C
Test Engineer :	David Ke	Relative Humidity :	45~46%

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2390	63.47	-10.53	74	62.73	32.02	4.58	35.86	124	332	Peak
2390	43.09	-10.91	54	42.35	32.02	4.58	35.86	124	332	Average
2483.9	62.95	-11.05	74	62.03	32.09	4.64	35.81	124	332	Peak
2483.5	45.11	-8.89	54	44.19	32.09	4.64	35.81	124	332	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2387.58	62.44	-11.56	74	61.72	32.02	4.58	35.88	123	197	Peak
2390	41.69	-12.31	54	40.95	32.02	4.58	35.86	123	197	Average
2485.3	62.27	-11.73	74	61.35	32.09	4.64	35.81	123	197	Peak
2483.5	43.12	-10.88	54	42.2	32.09	4.64	35.81	123	197	Average



Test Mode :	PIFA Antenna Bluetooth 3DH1 (Ch77) + 802.11g (Ch11)	Temperature :	23~24°C
Test Engineer :	David Ke	Relative Humidity :	45~46%

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2372.1	51.44	-22.56	74	50.75	32	4.57	35.88	100	76	Peak
2372.64	38.85	-15.15	54	38.16	32	4.57	35.88	100	76	Average
2485.03	73.64	-0.36	74	72.72	32.09	4.64	35.81	100	76	Peak
2483.5	46.18	-7.82	54	45.26	32.09	4.64	35.81	100	76	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2372.37	52.75	-21.25	74	52.06	32	4.57	35.88	127	217	Peak
2375.25	40.06	-13.94	54	39.37	32	4.57	35.88	127	217	Average
2483.77	70.86	-3.14	74	69.94	32.09	4.64	35.81	127	217	Peak
2483.5	44.47	-9.53	54	43.55	32.09	4.64	35.81	127	217	Average



Test Mode :	PIFA Antenna Bluetooth 3DH1 (Ch27) + 802.11n (BW 20MHz) (Ch01)	Temperature :	23~24°C
Test Engineer :	David Ke	Relative Humidity :	45~46%

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2388.57	73.87	-0.13	74	73.15	32.02	4.58	35.88	127	346	Peak
2390.01	50.75	-3.25	54	50.01	32.02	4.58	35.86	127	346	Average
2496.6	55.09	-18.91	74	54.15	32.1	4.64	35.8	127	346	Peak
2495.54	41.37	-12.63	54	40.43	32.1	4.64	35.8	127	346	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2387.85	70.96	-3.04	74	70.24	32.02	4.58	35.88	100	10	Peak
2390.01	49.55	-4.45	54	48.81	32.02	4.58	35.86	100	10	Average
2495.67	51.29	-22.71	74	50.35	32.1	4.64	35.8	100	10	Peak
2493.61	38.55	-15.45	54	37.61	32.1	4.64	35.8	100	10	Average



Test Mode :	PIFA Antenna Bluetooth 3DH1 (Ch18) + 802.11n (BW 20MHz) (Ch06)	Temperature :	23~24°C
Test Engineer :	David Ke	Relative Humidity :	45~46%

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2386.23	62.63	-11.37	74	61.91	32.02	4.58	35.88	122	97	Peak
2352.75	43.3	-10.7	54	42.65	31.99	4.55	35.89	122	97	Average
2486.69	64.58	-9.42	74	63.66	32.09	4.64	35.81	122	97	Peak
2486.09	43.79	-10.21	54	42.87	32.09	4.64	35.81	122	97	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2389.38	61.42	-12.58	74	60.7	32.02	4.58	35.88	102	218	Peak
2356.44	41.75	-12.25	54	41.08	31.99	4.57	35.89	102	218	Average
2483.57	60.77	-13.23	74	59.85	32.09	4.64	35.81	102	218	Peak
2483.5	42.42	-11.58	54	41.5	32.09	4.64	35.81	102	218	Average



Test Mode :	PIFA Antenna Bluetooth 3DH1 (Ch52) + 802.11n (BW 20MHz) (Ch06)	Temperature :	23~24°C
Test Engineer :	David Ke	Relative Humidity :	45~46%

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2389.92	64.19	-9.81	74	63.45	32.02	4.58	35.86	148	96	Peak
2390	42.67	-11.33	54	41.93	32.02	4.58	35.86	148	96	Average
2483.9	65.82	-8.18	74	64.9	32.09	4.64	35.81	148	96	Peak
2483.5	43.92	-10.08	54	43	32.09	4.64	35.81	148	96	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2385.6	61.66	-12.34	74	60.94	32.02	4.58	35.88	101	216	Peak
2356.53	42.07	-11.93	54	41.4	31.99	4.57	35.89	101	216	Average
2486.63	61.33	-12.67	74	60.41	32.09	4.64	35.81	101	216	Peak
2483.5	42.26	-11.74	54	41.34	32.09	4.64	35.81	101	216	Average



Test Mode :	PIFA Antenna Bluetooth 3DH1 (Ch77) + 802.11n (BW 20MHz) (Ch11)	Temperature :	23~24°C
Test Engineer :	David Ke	Relative Humidity :	45~46%

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2378.22	55.27	-18.73	74	54.58	32	4.57	35.88	130	352	Peak
2381.19	40.97	-13.03	54	40.27	32	4.58	35.88	130	352	Average
2484.9	73.3	-0.7	74	72.38	32.09	4.64	35.81	130	352	Peak
2483.5	47.2	-6.8	54	46.28	32.09	4.64	35.81	130	352	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2376.51	52.45	-21.55	74	51.76	32	4.57	35.88	127	214	Peak
2379.12	38.65	-15.35	54	37.96	32	4.57	35.88	127	214	Average
2483.7	69.2	-4.8	74	68.28	32.09	4.64	35.81	127	214	Peak
2483.5	43.56	-10.44	54	42.64	32.09	4.64	35.81	127	214	Average



Test Mode :	PIFA Antenna Bluetooth 3DH1 (Ch47) + 802.11n (BW 40MHz) (Ch03)	Temperature :	23~24°C
Test Engineer :	David Ke	Relative Humidity :	45~46%

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2388.84	72.56	-1.44	74	71.84	32.02	4.58	35.88	123	96	Peak
2389.92	52.21	-1.79	54	51.47	32.02	4.58	35.86	123	96	Average
2483.63	62.29	-11.71	74	61.37	32.09	4.64	35.81	123	96	Peak
2496.87	41.56	-12.44	54	40.62	32.1	4.64	35.8	123	96	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2389.29	70.27	-3.73	74	69.55	32.02	4.58	35.88	149	224	Peak
2389.47	51.13	-2.87	54	50.41	32.02	4.58	35.88	149	224	Average
2484.3	60.97	-13.03	74	60.05	32.09	4.64	35.81	149	224	Peak
2483.5	39.79	-14.21	54	38.87	32.09	4.64	35.81	149	224	Average



Test Mode :	PIFA Antenna Bluetooth 3DH1 (Ch08) + 802.11n (BW 40MHz) (Ch06)	Temperature :	23~24°C
Test Engineer :	David Ke	Relative Humidity :	45~46%

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2389.56	73.13	-0.87	74	72.41	32.02	4.58	35.88	102	341	Peak
2390	50.17	-3.83	54	49.43	32.02	4.58	35.86	102	341	Average
2483.77	70.77	-3.23	74	69.85	32.09	4.64	35.81	102	341	Peak
2483.5	45.8	-8.2	54	44.88	32.09	4.64	35.81	102	341	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2389.92	70.65	-3.35	74	69.91	32.02	4.58	35.86	103	216	Peak
2390	47	-7	54	46.26	32.02	4.58	35.86	103	216	Average
2484.17	68.49	-5.51	74	67.57	32.09	4.64	35.81	103	216	Peak
2483.5	44.77	-9.23	54	43.85	32.09	4.64	35.81	103	216	Average



Test Mode :	PIFA Antenna Bluetooth 3DH1 (Ch62) + 802.11n (BW 40MHz) (Ch06)	Temperature :	23~24°C
Test Engineer :	David Ke	Relative Humidity :	45~46%

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2389.29	68.15	-5.85	74	67.43	32.02	4.58	35.88	100	342	Peak
2390	46.5	-7.5	54	45.76	32.02	4.58	35.86	100	342	Average
2483.83	73.59	-0.41	74	72.67	32.09	4.64	35.81	100	342	Peak
2483.5	45.95	-8.05	54	45.03	32.09	4.64	35.81	100	342	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2387.4	64.81	-9.19	74	64.09	32.02	4.58	35.88	104	217	Peak
2390	43.4	-10.6	54	42.66	32.02	4.58	35.86	104	217	Average
2483.57	71.77	-2.23	74	70.85	32.09	4.64	35.81	104	217	Peak
2483.5	44.17	-9.83	54	43.25	32.09	4.64	35.81	104	217	Average



Test Mode :	PIFA Antenna Bluetooth 3DH1 (Ch77) + 802.11n (BW 40MHz) (Ch09)	Temperature :	23~24°C
Test Engineer :	David Ke	Relative Humidity :	45~46%

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2389.74	54.43	-19.57	74	53.71	32.02	4.58	35.88	101	353	Peak
2390	38.51	-15.49	54	37.77	32.02	4.58	35.86	101	353	Average
2487.42	73.22	-0.78	74	72.3	32.09	4.64	35.81	101	353	Peak
2483.5	50.03	-3.97	54	49.11	32.09	4.64	35.81	101	353	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2390	53.8	-20.2	74	53.06	32.02	4.58	35.86	103	216	Peak
2357.88	37.7	-16.3	54	37.03	31.99	4.57	35.89	103	216	Average
2498.86	70.99	-3.01	74	70.05	32.1	4.64	35.8	103	216	Peak
2483.5	47.69	-6.31	54	46.77	32.09	4.64	35.81	103	216	Average



Test Mode :	Dipole Antenna Bluetooth 3DH1 (Ch27) + 802.11b (Ch01)	Temperature :	23~24°C
Test Engineer :	David Ke	Relative Humidity :	45~46%

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2387.58	61.34	-12.66	74	60.62	32.02	4.58	35.88	153	304	Peak
2386.95	43.8	-10.2	54	43.08	32.02	4.58	35.88	153	304	Average
2497.6	50.67	-23.33	74	49.73	32.1	4.64	35.8	153	304	Peak
2496.53	36.54	-17.46	54	35.6	32.1	4.64	35.8	153	304	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2387.22	71.9	-2.1	74	71.18	32.02	4.58	35.88	102	283	Peak
2386.95	53.32	-0.68	54	52.6	32.02	4.58	35.88	102	283	Average
2496.73	55.23	-18.77	74	54.29	32.1	4.64	35.8	102	283	Peak
2496.73	42.06	-11.94	54	41.12	32.1	4.64	35.8	102	283	Average



Test Mode :	Dipole Antenna Bluetooth 3DH1 (Ch18) + 802.11b (Ch06)	Temperature :	23~24°C
Test Engineer :	David Ke	Relative Humidity :	45~46%

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2352.21	48.92	-25.08	74	48.27	31.99	4.55	35.89	137	17	Peak
2351.85	37.02	-16.98	54	36.37	31.99	4.55	35.89	137	17	Average
2498.06	49.92	-24.08	74	48.98	32.1	4.64	35.8	137	17	Peak
2497.33	35.82	-18.18	54	34.88	32.1	4.64	35.8	137	17	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2385.87	59.06	-14.94	74	58.34	32.02	4.58	35.88	100	284	Peak
2351.94	45.05	-8.95	54	44.4	31.99	4.55	35.89	100	284	Average
2483.57	57.77	-16.23	74	56.85	32.09	4.64	35.81	100	284	Peak
2483.5	42.83	-11.17	54	41.91	32.09	4.64	35.81	100	284	Average



Test Mode :	Dipole Antenna Bluetooth 3DH1 (Ch52) + 802.11b (Ch06)	Temperature :	23~24°C
Test Engineer :	David Ke	Relative Humidity :	45~46%

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2374.44	50.56	-23.44	74	49.87	32	4.57	35.88	102	307	Peak
2350.95	38.2	-15.8	54	37.56	31.98	4.55	35.89	102	307	Average
2496.6	50.54	-23.46	74	49.6	32.1	4.64	35.8	102	307	Peak
2487.62	37.09	-16.91	54	36.16	32.1	4.64	35.81	102	307	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2374.53	55.76	-18.24	74	55.07	32	4.57	35.88	100	62	Peak
2351.94	43.49	-10.51	54	42.84	31.99	4.55	35.89	100	62	Average
2483.63	60.18	-13.82	74	59.26	32.09	4.64	35.81	100	62	Peak
2483.63	44.16	-9.84	54	43.24	32.09	4.64	35.81	100	62	Average



Test Mode :	Dipole Antenna Bluetooth 3DH1 (Ch77) + 802.11b (Ch11)	Temperature :	23~24°C
Test Engineer :	David Ke	Relative Humidity :	45~46%

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2375.79	49.47	-24.53	74	48.78	32	4.57	35.88	101	307	Peak
2375.43	37.94	-16.06	54	37.25	32	4.57	35.88	101	307	Average
2486.69	65.48	-8.52	74	64.56	32.09	4.64	35.81	101	307	Peak
2487.09	45.4	-8.6	54	44.48	32.09	4.64	35.81	101	307	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2375.52	53.93	-20.07	74	53.24	32	4.57	35.88	100	108	Peak
2375.07	43.67	-10.33	54	42.98	32	4.57	35.88	100	108	Average
2486.69	73.15	-0.85	74	72.23	32.09	4.64	35.81	100	108	Peak
2486.96	52.16	-1.84	54	51.24	32.09	4.64	35.81	100	108	Average



Test Mode :	Dipole Antenna Bluetooth 3DH1 (Ch27) + 802.11g (Ch01)	Temperature :	23~24°C
Test Engineer :	David Ke	Relative Humidity :	45~46%

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2389.47	62.98	-11.02	74	62.26	32.02	4.58	35.88	106	307	Peak
2348.97	37.86	-16.14	54	37.22	31.98	4.55	35.89	106	307	Average
2497.8	48.55	-25.45	74	47.61	32.1	4.64	35.8	106	307	Peak
2498.06	35.71	-18.29	54	34.77	32.1	4.64	35.8	106	307	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2387.31	73.13	-0.87	74	72.41	32.02	4.58	35.88	103	62	Peak
2390	45.84	-8.16	54	45.1	32.02	4.58	35.86	103	62	Average
2497.93	53.03	-20.97	74	52.09	32.1	4.64	35.8	103	62	Peak
2495.67	40.24	-13.76	54	39.3	32.1	4.64	35.8	103	62	Average



Test Mode :	Dipole Antenna Bluetooth 3DH1 (Ch18) + 802.11g (Ch06)	Temperature :	23~24°C
Test Engineer :	David Ke	Relative Humidity :	45~46%

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2390	53.88	-20.12	74	53.14	32.02	4.58	35.86	105	307	Peak
2352.39	39.04	-14.96	54	38.39	31.99	4.55	35.89	105	307	Average
2489.69	53.44	-20.56	74	52.51	32.1	4.64	35.81	105	307	Peak
2487.02	37.33	-16.67	54	36.41	32.09	4.64	35.81	105	307	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2387.58	63.43	-10.57	74	62.71	32.02	4.58	38.88	100	62	Peak
2355.18	45.09	-8.91	54	44.44	31.99	4.55	35.89	100	62	Average
2483.57	64.3	-9.7	74	63.38	32.09	4.64	35.81	100	62	Peak
2483.5	45.46	-8.54	54	44.54	32.09	4.64	35.81	100	62	Average



Test Mode :	Dipole Antenna Bluetooth 3DH1 (Ch52) + 802.11g (Ch06)	Temperature :	23~24°C
Test Engineer :	David Ke	Relative Humidity :	45~46%

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2389.47	55.02	-18.98	74	54.3	32.02	4.58	35.88	103	307	Peak
2352.21	39.13	-14.89	54	38.48	31.99	4.55	35.89	103	307	Average
2483.83	55.33	-18.67	74	54.41	32.09	4.64	35.81	103	307	Peak
2483.5	37.37	-16.63	54	36.45	32.09	4.64	35.81	103	307	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2385.78	62.56	-11.44	74	61.84	32.02	4.58	35.88	100	62	Peak
2355.09	44.15	-9.85	54	43.5	31.99	4.55	35.89	100	62	Average
2484.1	65.23	-8.77	74	64.31	32.09	4.64	35.81	100	62	Peak
2483.5	45.67	-8.33	54	44.75	32.09	4.64	35.81	100	62	Average



Test Mode :	Dipole Antenna Bluetooth 3DH1 (Ch77) + 802.11g (Ch11)	Temperature :	23~24°C
Test Engineer :	David Ke	Relative Humidity :	45~46%

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2379.57	49.67	-24.33	74	48.98	32	4.57	35.88	102	309	Peak
2375.97	36.26	-17.74	54	35.57	32	4.57	35.88	102	309	Average
2490.95	65.86	-8.14	74	64.93	32.1	4.64	35.81	102	309	Peak
2483.5	40.04	-13.96	54	39.12	32.09	4.64	35.81	102	309	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2379.48	53.73	-20.27	74	53.04	32	4.57	35.88	100	106	Peak
2378.67	40.33	-13.67	54	39.64	32	4.57	35.88	100	106	Average
2484.9	73.25	-0.75	74	72.33	23.09	4.64	35.81	100	106	Peak
2483.5	47.65	-6.35	54	46.73	32.09	4.64	35.81	100	106	Average



Test Mode :	Dipole Antenna Bluetooth 3DH1 (Ch27) + 802.11n (BW 20MHz) (Ch01)	Temperature :	23~24°C
Test Engineer :	David Ke	Relative Humidity :	45~46%

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2384.25	64.85	-9.15	74	64.15	32	4.58	35.88	156	308	Peak
2390	39.12	-14.88	54	38.38	32.02	4.58	35.86	156	308	Average
2493.87	51.42	-22.58	74	50.48	32.1	4.64	35.8	156	308	Peak
2495.8	37.1	-16.9	54	36.16	32.1	4.64	35.8	156	308	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2386.05	73.47	-0.53	74	72.75	32.02	4.58	35.88	103	281	Peak
2390	46.95	-7.05	54	46.21	32.02	4.58	35.86	103	281	Average
2497.67	53.47	-20.53	74	52.53	32.1	4.64	35.8	103	281	Peak
2496.2	40.07	-13.93	54	39.13	32.1	4.64	35.8	103	281	Average



Test Mode :	Dipole Antenna Bluetooth 3DH1 (Ch18) + 802.11n (BW 20MHz) (Ch06)	Temperature :	23~24°C
Test Engineer :	David Ke	Relative Humidity :	45~46%

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2382.99	54.18	-19.82	74	53.48	32	4.58	35.88	104	305	Peak
2351.94	38.84	-15.16	54	38.19	31.99	4.55	35.89	104	305	Average
2483.7	51.33	-22.67	74	50.41	32.09	4.64	35.81	104	305	Peak
2483.5	36.5	-17.5	54	35.58	32.09	4.64	35.81	104	305	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2385.6	66.57	-7.43	74	65.85	32.02	4.58	35.88	103	62	Peak
2355.18	45.64	-8.36	54	44.99	31.99	4.55	35.89	103	62	Average
2485.16	61.09	-12.91	74	60.17	32.09	4.64	35.81	103	62	Peak
2483.5	43.94	-10.06	54	43.02	32.09	4.64	35.81	103	62	Average



Test Mode :	Dipole Antenna Bluetooth 3DH1 (Ch52) + 802.11n (BW 20MHz) (Ch06)	Temperature :	23~24°C
Test Engineer :	David Ke	Relative Humidity :	45~46%

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2389.83	54.77	-19.23	74	54.03	32.02	4.58	35.86	103	305	Peak
2352.48	39.28	-14.72	54	38.63	31.99	4.55	35.89	103	305	Average
2485.23	51.58	-22.42	74	50.66	32.09	4.64	35.81	103	305	Peak
2483.5	36.62	-17.38	54	35.7	32.09	4.64	35.81	103	305	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2389.83	64.45	-9.55	74	63.71	32.02	4.58	35.86	102	62	Peak
2355.09	44.76	-9.24	54	44.11	31.99	4.55	35.89	102	62	Average
2483.7	65.85	-8.15	74	64.93	32.09	4.64	35.81	102	62	Peak
2483.5	44.48	-9.52	54	43.56	32.09	4.64	35.81	102	62	Average



Test Mode :	Dipole Antenna Bluetooth 3DH1 (Ch77) + 802.11n (BW 20MHz) (Ch11)	Temperature :	23~24°C
Test Engineer :	David Ke	Relative Humidity :	45~46%

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2374.98	49.28	-24.72	74	48.59	32	4.57	35.88	101	309	Peak
2375.25	36.03	-17.97	54	35.34	32	4.57	35.88	101	309	Average
2490.68	66.25	-7.75	74	65.32	32.1	4.64	35.81	101	309	Peak
2483.5	40.68	-13.32	54	39.76	32.09	4.64	35.81	101	309	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2375.79	53.3	-20.7	74	52.61	32	4.57	35.88	100	215	Peak
2381.1	40.03	-13.97	54	39.33	32	4.58	35.88	100	215	Average
2487.56	73.5	-0.5	74	72.57	32.1	4.64	35.81	100	215	Peak
2483.5	48.97	-5.03	54	48.05	32.09	4.64	35.81	100	215	Average



Test Mode :	Dipole Antenna Bluetooth 3DH1 (Ch47) + 802.11n (BW 40MHz) (Ch03)	Temperature :	23~24°C
Test Engineer :	David Ke	Relative Humidity :	45~46%

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2388.03	64.7	-9.3	74	63.98	32.02	4.58	35.88	147	46	Peak
2389.92	43.04	-10.96	54	42.3	32.02	4.58	35.86	147	46	Average
2492.28	53.01	-20.99	74	52.07	32.1	4.64	35.8	147	46	Peak
2492.68	37.23	-16.77	54	36.29	32.1	4.64	38.8	147	46	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2388.84	73.81	-0.19	74	73.09	32.02	4.58	35.88	104	63	Peak
2390	50.83	-3.17	54	50.09	32.02	4.58	35.86	104	63	Average
2483.97	62.05	-11.95	74	61.13	32.09	4.64	35.81	104	63	Peak
2483.5	40.97	-13.03	54	40.05	32.09	4.64	35.81	104	63	Average



Test Mode :	Dipole Antenna Bluetooth 3DH1 (Ch08) + 802.11n (BW 40MHz) (Ch06)	Temperature :	23~24°C
Test Engineer :	David Ke	Relative Humidity :	45~46%

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2390	61.66	-12.34	74	60.92	32.02	4.58	35.86	103	309	Peak
2390	38.14	-15.86	54	37.4	32.02	4.58	35.86	103	309	Average
2490.02	58.84	-15.16	74	57.91	32.1	4.64	35.81	103	309	Peak
2483.5	37.96	-16.04	54	37.04	32.09	4.64	35.81	103	309	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2389.83	73.19	-0.81	74	72.45	32.02	4.58	35.86	126	61	Peak
2390	47.36	-6.64	54	46.62	32.02	4.58	35.86	126	61	Average
2484.37	69.83	-4.17	74	68.91	32.09	4.64	35.81	126	61	Peak
2483.5	46.22	-7.78	54	45.3	32.09	4.64	35.81	126	61	Average



Test Mode :	Dipole Antenna Bluetooth 3DH1 (Ch62) + 802.11n (BW 40MHz) (Ch06)	Temperature :	23~24°C
Test Engineer :	David Ke	Relative Humidity :	45~46%

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2379.66	59.58	-14.42	74	58.89	32	4.57	35.88	103	309	Peak
2383.89	38.31	-15.69	54	37.61	32	4.58	35.88	103	309	Average
2483.7	62.35	-11.65	74	61.43	32.09	4.64	35.81	103	309	Peak
2483.5	39.09	-14.91	54	38.17	32.09	4.64	35.81	103	309	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2389.29	70.22	-3.78	74	69.5	32.02	4.58	35.88	125	63	Peak
2390	46.4	-7.6	54	45.66	32.02	4.58	35.86	125	63	Average
2483.83	73.89	-0.11	74	72.97	32.09	4.64	35.81	125	63	Peak
2483.5	47.39	-6.61	54	46.47	32.09	4.64	35.81	125	63	Average



Test Mode :	Dipole Antenna Bluetooth 3DH1 (Ch77) + 802.11n (BW 40MHz) (Ch09)	Temperature :	23~24°C
Test Engineer :	David Ke	Relative Humidity :	45~46%

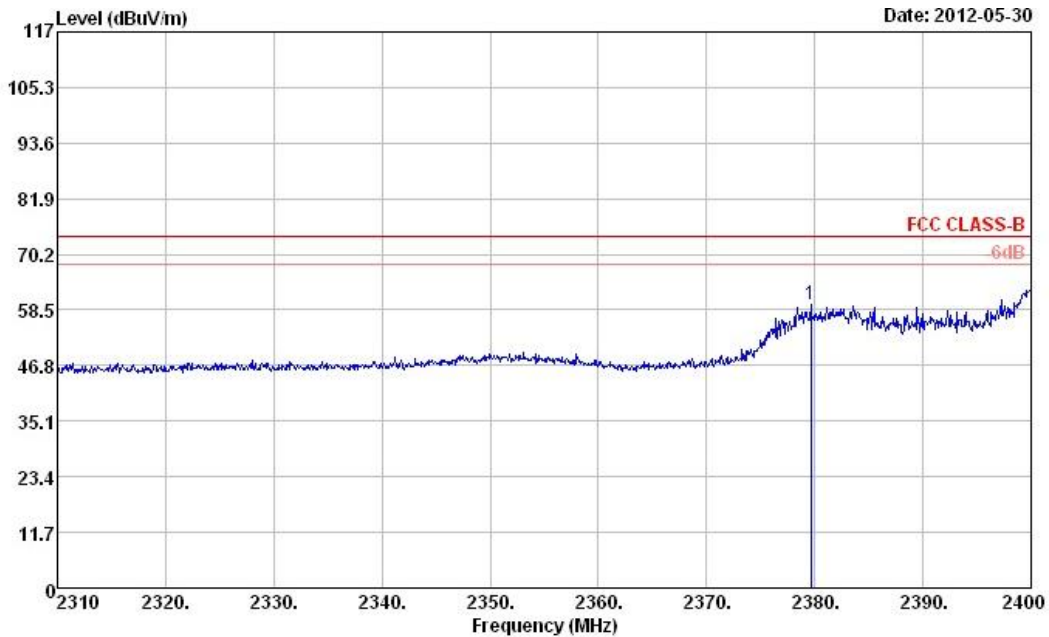
ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2380.74	49.06	-24.94	74	48.36	32	4.58	35.88	108	146	Peak
2373	35.83	-18.17	54	35.14	32	4.57	35.88	108	146	Average
2483.5	63.6	-10.4	74	62.68	32.09	4.64	35.81	108	146	Peak
2483.5	42.9	-11.1	54	41.89	32.09	4.64	35.81	108	146	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2390	57.33	-16.67	74	56.59	32.02	4.58	35.86	126	61	Peak
2390	40.1	-13.9	54	39.36	32.02	4.58	35.86	126	61	Average
2484.3	73.3	-0.7	74	72.38	32.09	4.64	35.81	126	61	Peak
2483.5	51.53	-2.47	54	50.61	32.09	4.64	35.81	126	61	Average



3.2.6 Test Result of Radiated Band Edges

Test Mode :	Dipole Antenna Bluetooth 3DH1 (Ch62) + 802.11n (BW 40MHz) (Ch06)	Temperature :	23~24°C
Test Engineer :	David Ke	Relative Humidity :	45~46%
		Polarization :	Horizontal

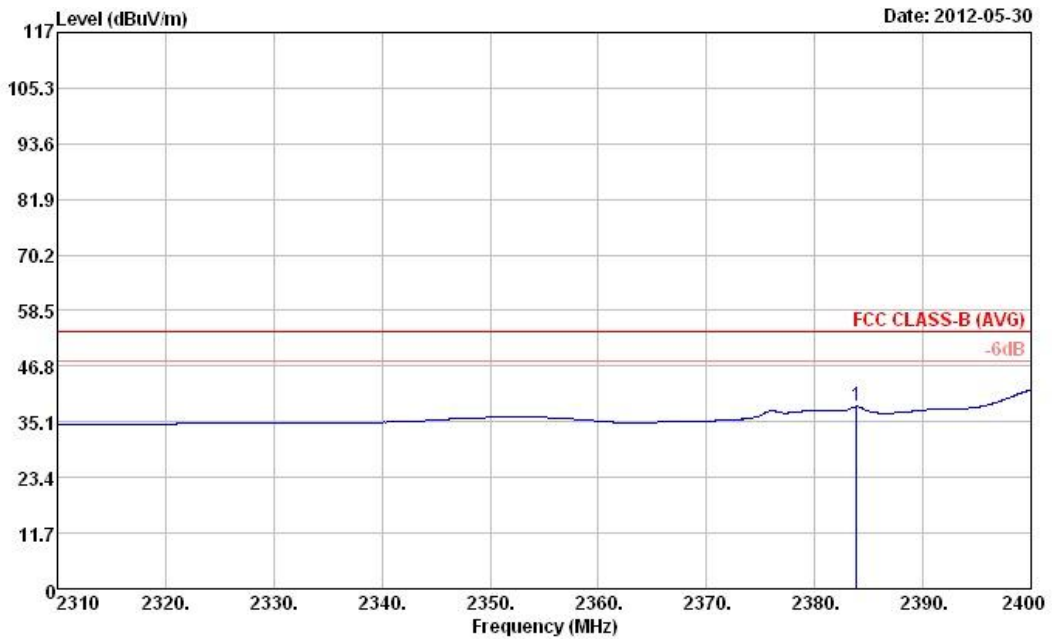


Site : 03CH05-HY
 Condition : FCC CLASS-B 3m HF_ANT_110810 HORIZONTAL
 : RBW:1000.000KHz VBW:3000.000KHz

Detector : Peak		Over	Limit	Read	Antenna	Cable	Preamp	A/Pos	T/Pos	Remark	
Freq	Level	Limit	Line	Level	Factor	Loss	Factor	cm	deg		
MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB				
1	2379.66	59.58	-14.42	74.00	58.89	32.00	4.57	35.88	103	309	Peak



Test Mode :	Dipole Antenna Bluetooth 3DH1 (Ch62) + 802.11n (BW 40MHz) (Ch06)	Temperature :	23~24°C
Test Engineer :	David Ke	Relative Humidity :	45~46%
		Polarization :	Horizontal



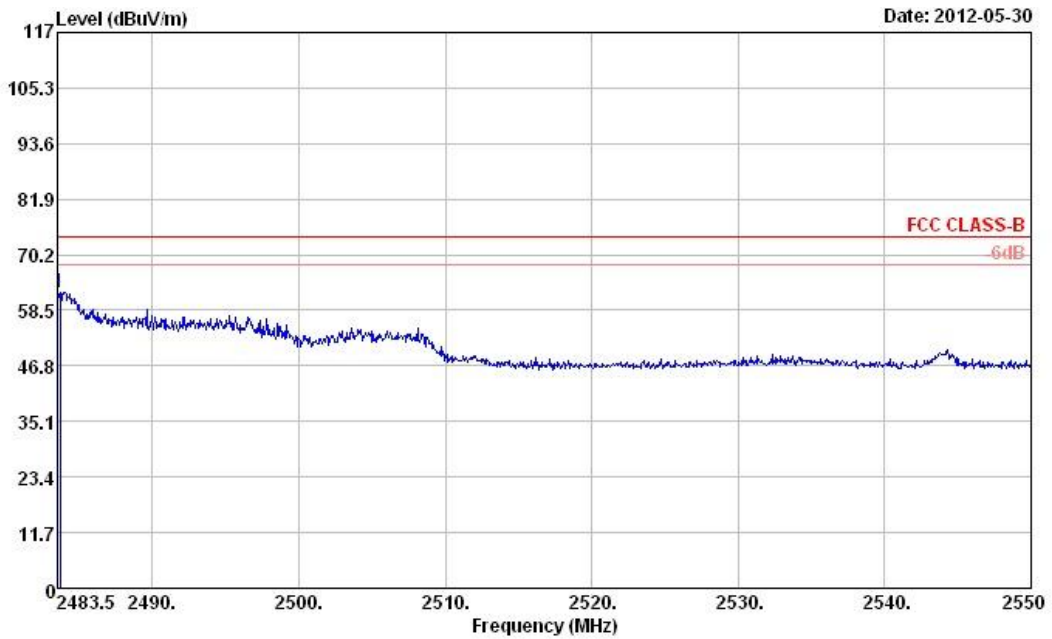
Site : 03CH05-HY
 Condition : FCC CLASS-B (AVG) 3m HF_ANT_110810 HORIZONTAL
 : RBW:1000.000kHz VBW:0.010kHz

Detector : Peak

	Over	Limit	Read	Antenna	Cable	Preamp	A/Pos	T/Pos	Remark
Freq	Level	Limit	Level	Factor	Loss	Factor	cm	deg	
MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	cm	deg	
1	2383.89	38.31	-15.69	54.00	37.61	32.00	4.58	35.88	103 309 Average



Test Mode :	Dipole Antenna Bluetooth 3DH1 (Ch62) + 802.11n (BW 40MHz) (Ch06)	Temperature :	23~24°C
Test Engineer :	David Ke	Relative Humidity :	45~46%
		Polarization :	Horizontal



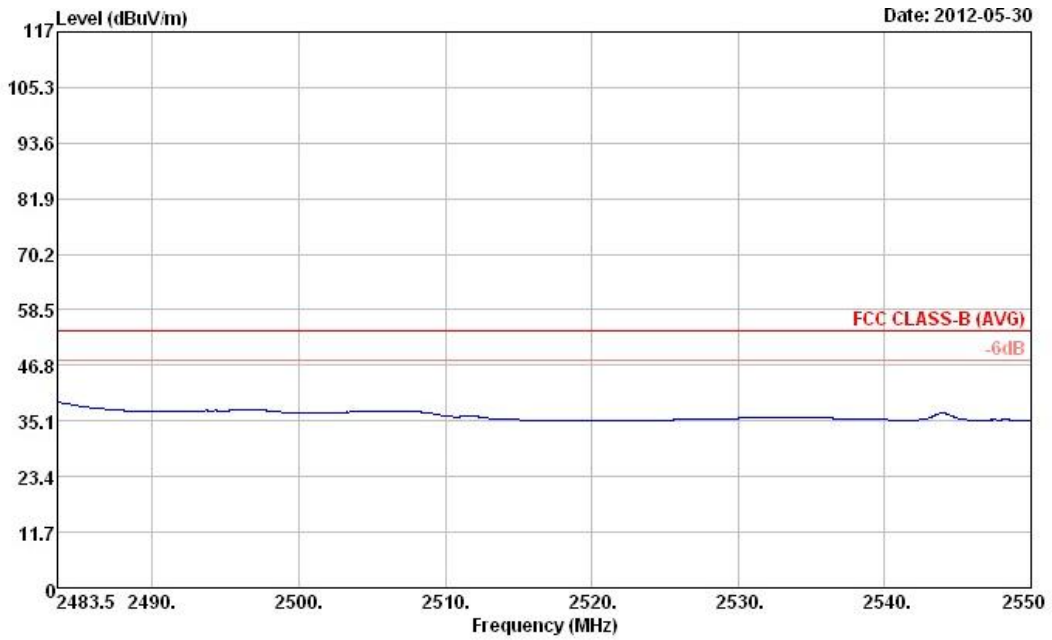
Site : 03CH05-HY
 Condition : FCC CLASS-B 3m HF_ANT_110810 HORIZONTAL
 : RBW:1000.000KHz VBW:3000.000KHz

Detector : Peak

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	2483.70	62.35	-11.65	74.00	61.43	32.09	4.64	35.81	103	309	Peak



Test Mode :	Dipole Antenna Bluetooth 3DH1 (Ch62) + 802.11n (BW 40MHz) (Ch06)	Temperature :	23~24°C
Test Engineer :	David Ke	Relative Humidity :	45~46%
		Polarization :	Horizontal



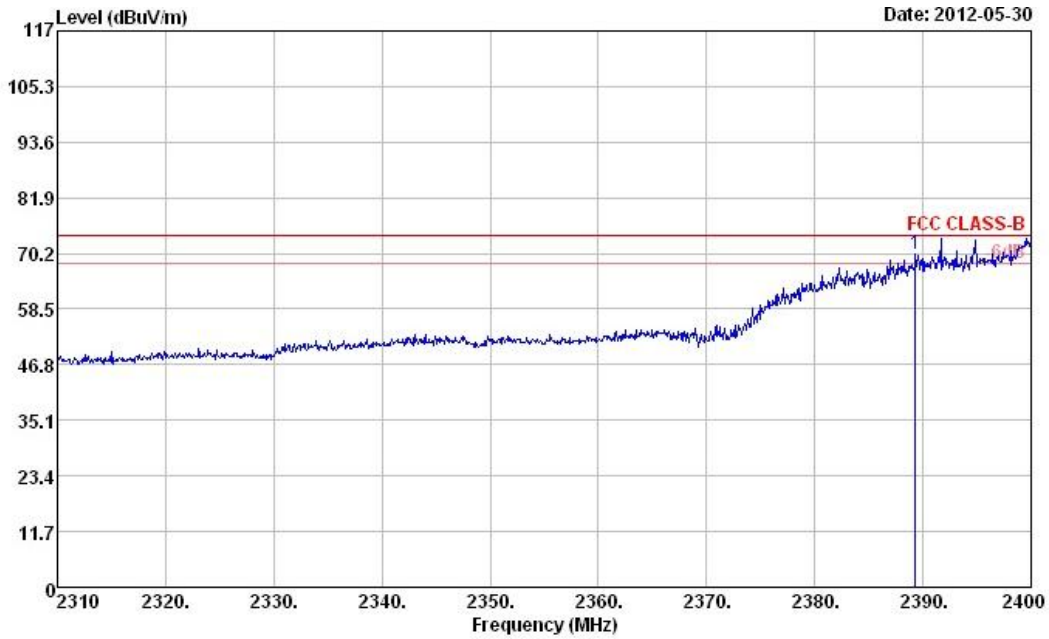
Site : 03CH05-HY
 Condition : FCC CLASS-B (AVG) 3m HF_ANT_110810 HORIZONTAL
 : RBW:1000.000KHz VBW:0.010KHz

Detector : Peak

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	2483.50	39.09	-14.91	54.00	38.17	32.09	4.64	35.81	103	309	Average



Test Mode :	Dipole Antenna Bluetooth 3DH1 (Ch62) + 802.11n (BW 40MHz) (Ch06)	Temperature :	23~24°C
Test Engineer :	David Ke	Relative Humidity :	45~46%
		Polarization :	Vertical



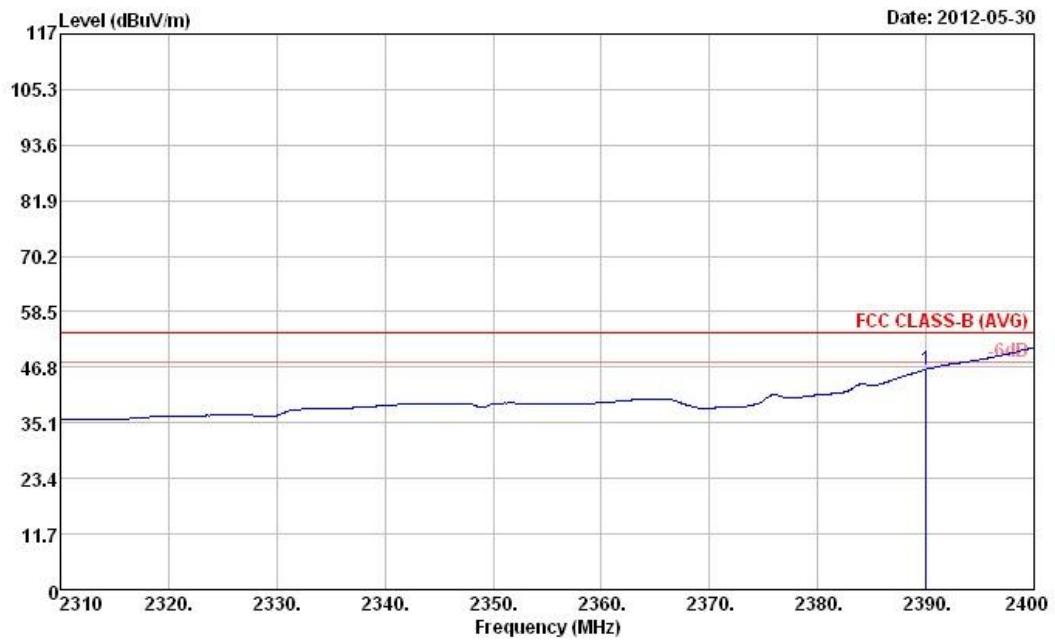
Site : 03CH05-HY
 Condition : FCC CLASS-B 3m HF_ANT_110810 VERTICAL
 : RBW:1000.000KHz VBW:3000.000KHz

Detector : Peak

	Over	Limit	Read	Antenna	Cable	Preamp	A/Pos	T/Pos	Remark
Freq	Limit	Line	Level	Factor	Loss	Factor			
MHz	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1 ! 2389.29	70.22	-3.78	74.00	69.50	32.02	4.58	35.88	125	63 Peak



Test Mode :	Dipole Antenna Bluetooth 3DH1 (Ch62) + 802.11n (BW 40MHz) (Ch06)	Temperature :	23~24°C
Test Engineer :	David Ke	Relative Humidity :	45~46%
		Polarization :	Vertical



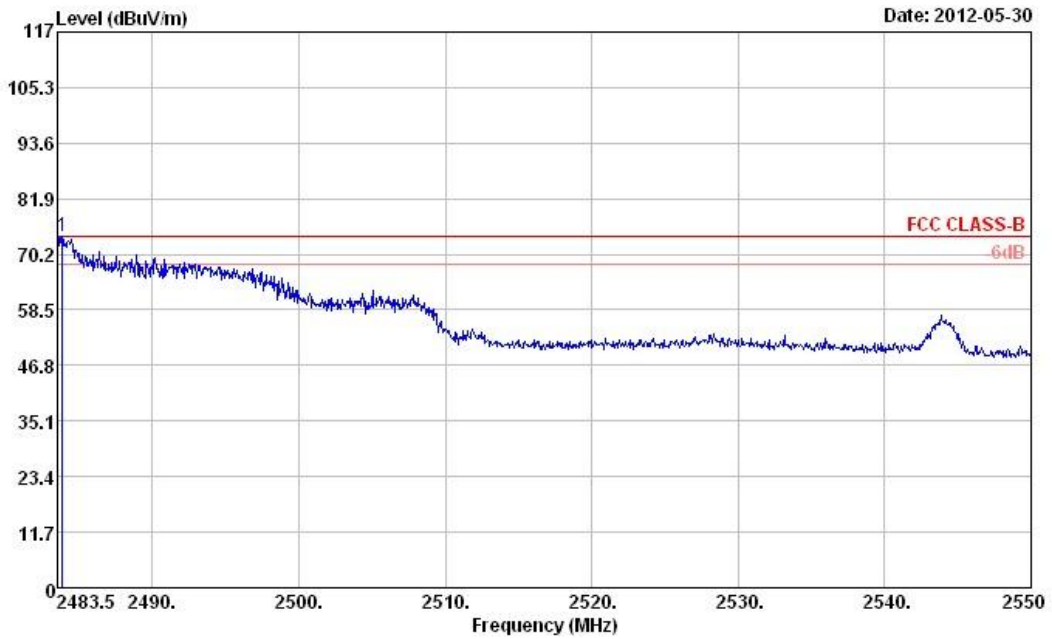
Site : 03CH05-HY
 Condition : FCC CLASS-B (AVG) 3m HF_ANT_110810 VERTICAL
 : RBW:1000.000KHz VBW:0.010KHz

Detector : Peak

	Over	Limit	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark			
Freq	Limit	Line	Level	Loss	Factor						
MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg		
1	2390.00	46.40	-7.60	54.00	45.66	32.02	4.58	35.86	125	63	Average



Test Mode :	Dipole Antenna Bluetooth 3DH1 (Ch62) + 802.11n (BW 40MHz) (Ch06)	Temperature :	23~24°C
Test Engineer :	David Ke	Relative Humidity :	45~46%
		Polarization :	Vertical



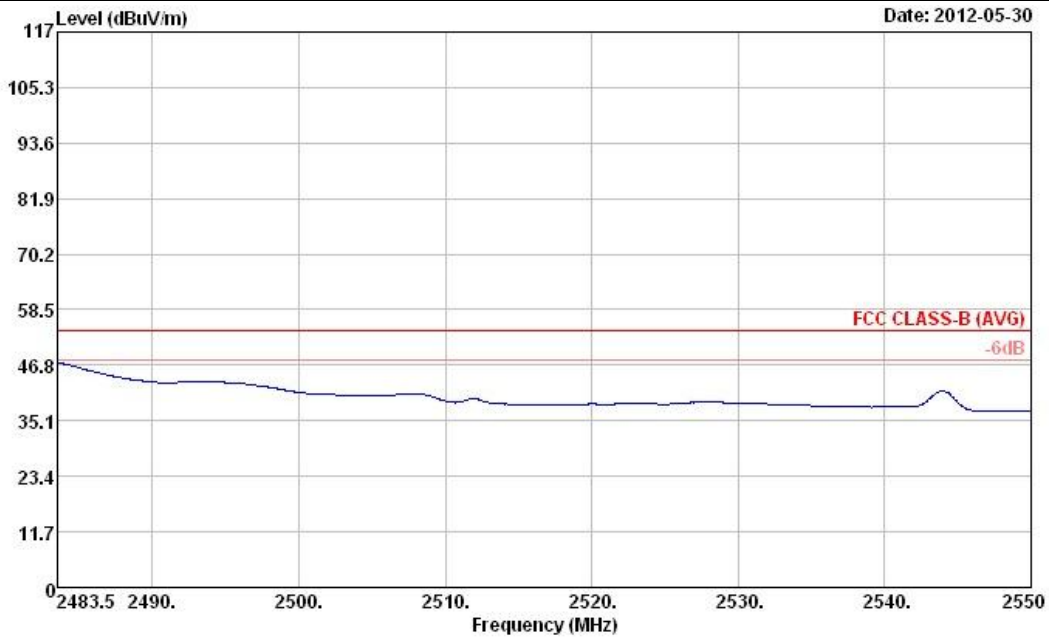
Site : 03CH05-HY
 Condition : FCC CLASS-B 3m HF_ANT_110810 VERTICAL
 : RBW:1000.000KHz VBW:3000.000KHz

Detector : Peak

	Over	Limit	Read	Antenna	Cable	Preamp	A/Pos	T/Pos	Remark
Freq	Level	Limit	Level	Factor	Loss	Factor			
MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	cm	deg	
1 2483.83	73.89	-0.11	74.00	72.97	32.09	4.64	35.81	125	63 Peak



Test Mode :	Dipole Antenna Bluetooth 3DH1 (Ch62) + 802.11n (BW 40MHz) (Ch06)	Temperature :	23~24°C
Test Engineer :	David Ke	Relative Humidity :	45~46%
		Polarization :	Vertical



Site : 03CH05-HY
 Condition : FCC CLASS-B (AVG) 3m HF_ANT_110810 VERTICAL
 : RBW:1000.000KHz VBW:0.010KHz

Detector : Peak

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	2483.50	47.39	-6.61	54.00	46.47	32.09	4.64	35.81	125	63	Average

3.3 Bluetooth and WLAN Co-location Conducted Spurious Emission Measurement

3.3.1 Limit of Conducted Spurious Emission Measurement

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

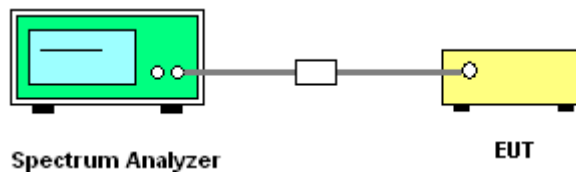
3.3.2 Measuring Instruments

See list of measuring instruments of this test report.

3.3.3 Test Procedure

1. The transmitter output was connected to the spectrum analyzer via a low lose cable.
2. 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.

3.3.4 Test Setup

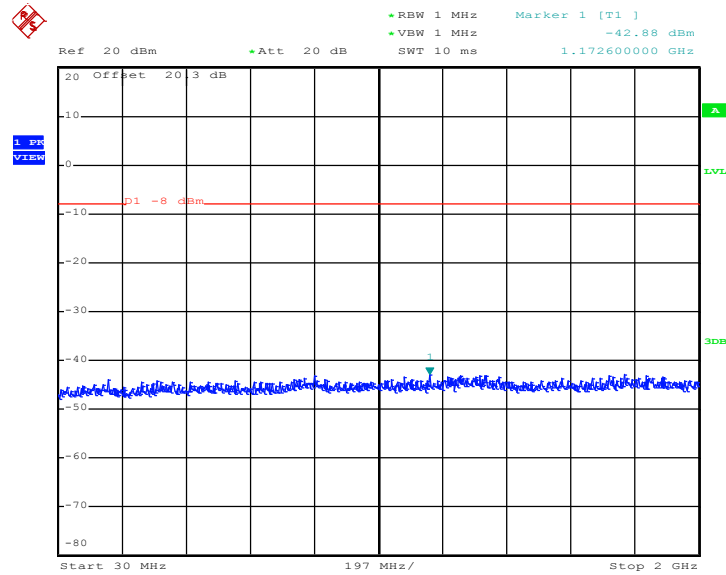




3.3.5 Test Result

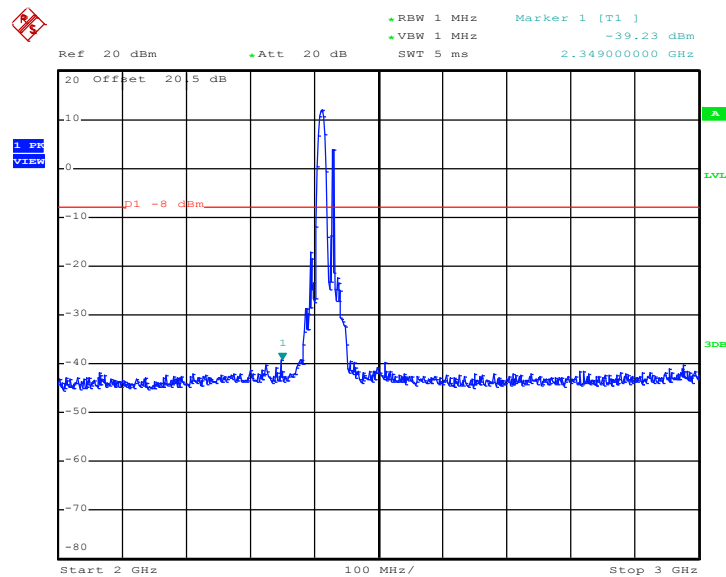
Test Mode :	PIFA Antenna Bluetooth 3DH1 (Ch27) + 802.11b (Ch01)	Temperature :	24~26°C
Test Engineer :	Pinkston Tu	Relative Humidity :	50~53%

Conducted Spurious Emission Plot 30MHz ~ 2GHz



Date: 25.APR.2012 18:15:28

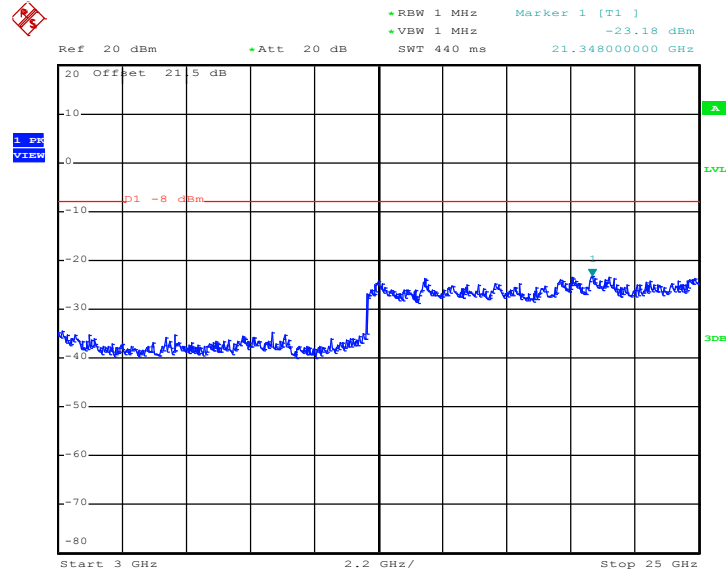
Conducted Spurious Emission Plot 2GHz ~ 3GHz



Date: 25.APR.2012 18:09:44



Conducted Spurious Emission Plot 3GHz ~ 25GHz

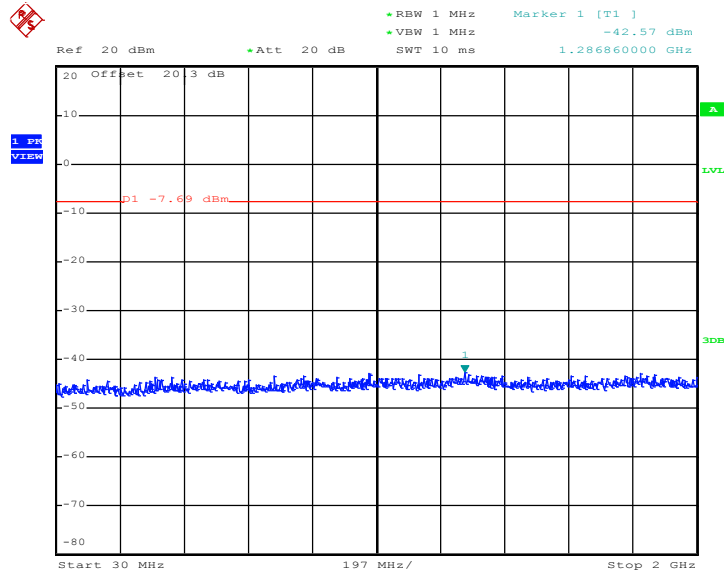


Date: 25.APR.2012 18:14:43



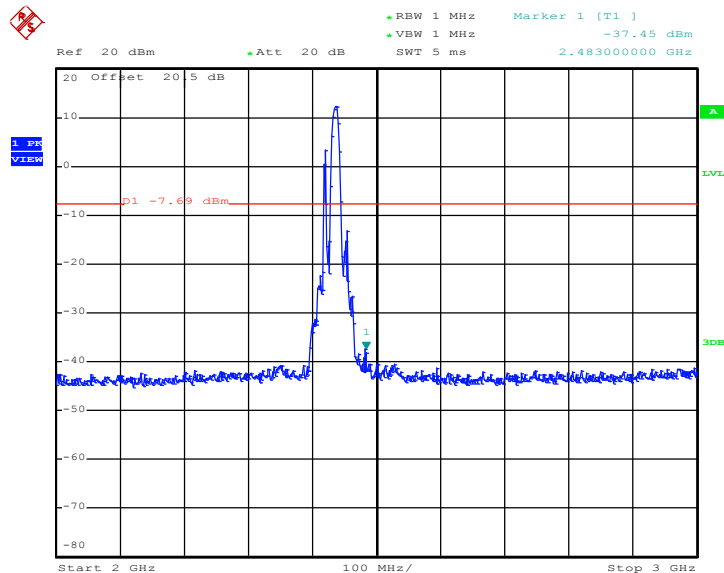
Test Mode :	PIFA Antenna Bluetooth 3DH1 (Ch18) + 802.11b (Ch06)	Temperature :	24~26°C
Test Engineer :	Pinkston Tu	Relative Humidity :	50~53%

Conducted Spurious Emission Plot 30MHz ~ 2GHz



Date: 25.APR.2012 18:29:39

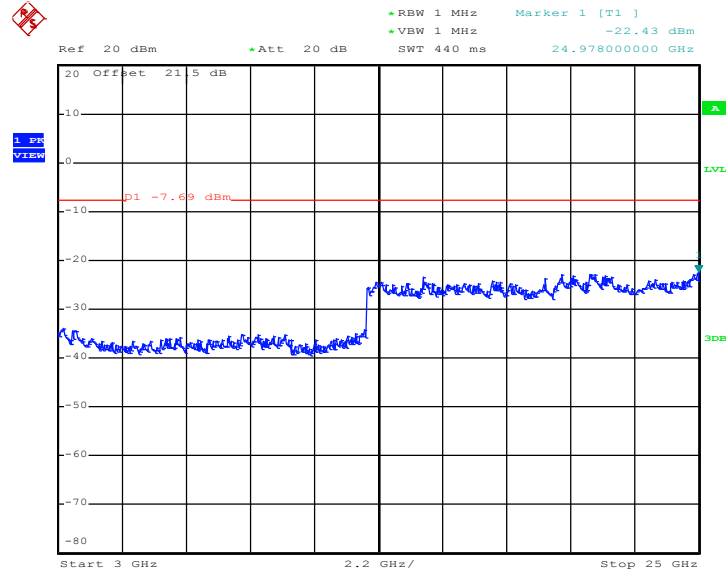
Conducted Spurious Emission Plot 2GHz ~ 3GHz



Date: 25.APR.2012 18:28:51



Conducted Spurious Emission Plot 3GHz ~ 25GHz

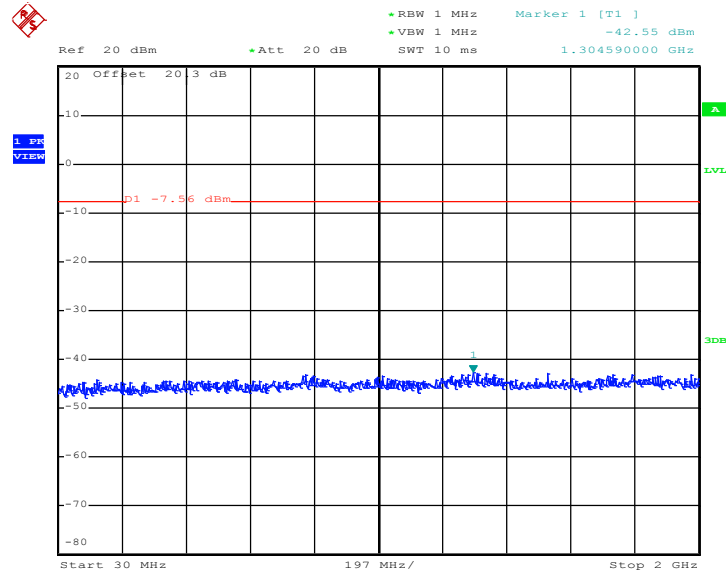


Date: 25.APR.2012 18:30:26



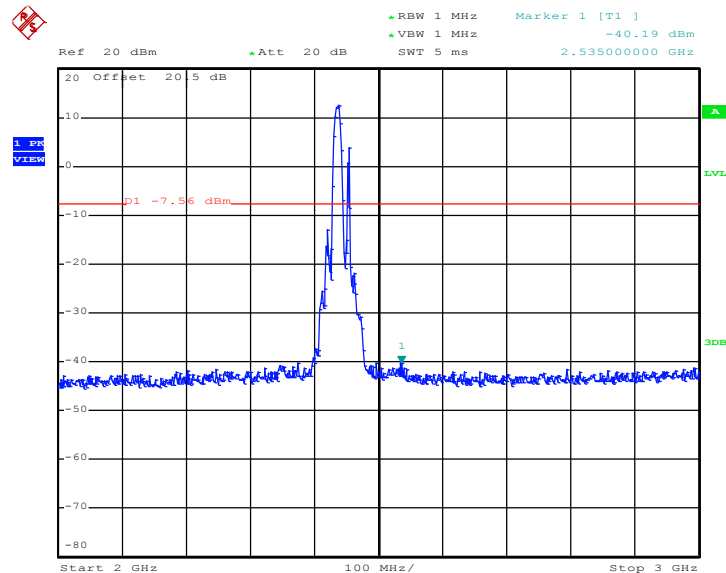
Test Mode :	PIFA Antenna Bluetooth 3DH1 (Ch52) + 802.11b (Ch06)	Temperature :	24~26°C
Test Engineer :	Pinkston Tu	Relative Humidity :	50~53%

Conducted Spurious Emission Plot 30MHz ~ 2GHz



Date: 25.APR.2012 18:23:05

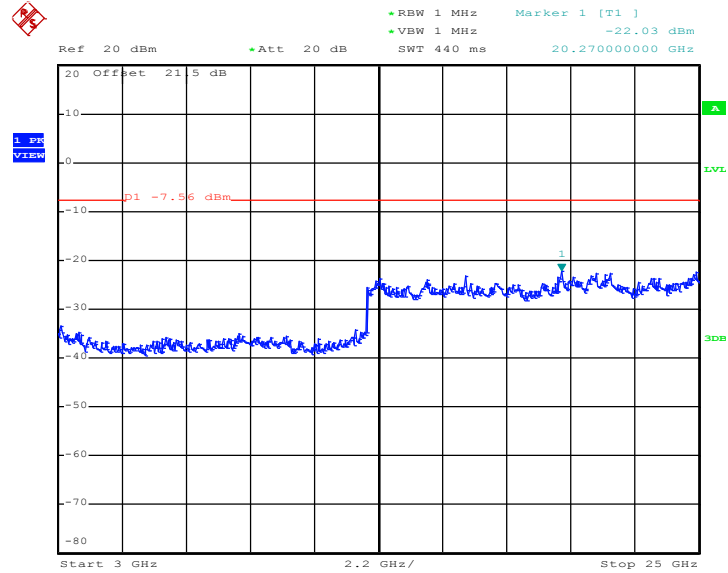
Conducted Spurious Emission Plot 2GHz ~ 3GHz



Date: 25.APR.2012 18:21:37



Conducted Spurious Emission Plot 3GHz ~ 25GHz

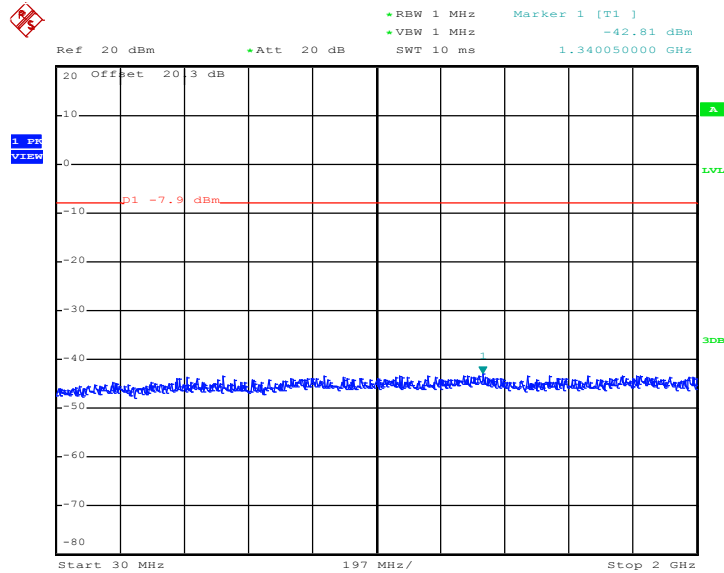


Date: 25.APR.2012 18:24:01



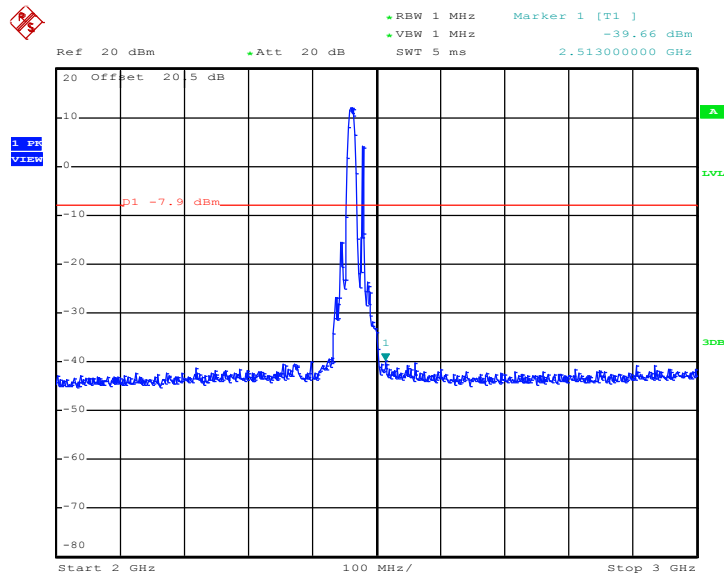
Test Mode :	PIFA Antenna Bluetooth 3DH1 (Ch77) + 802.11b (Ch11)	Temperature :	24~26°C
Test Engineer :	Pinkston Tu	Relative Humidity :	50~53%

Conducted Spurious Emission Plot 30MHz ~ 2GHz



Date: 25.APR.2012 18:33:26

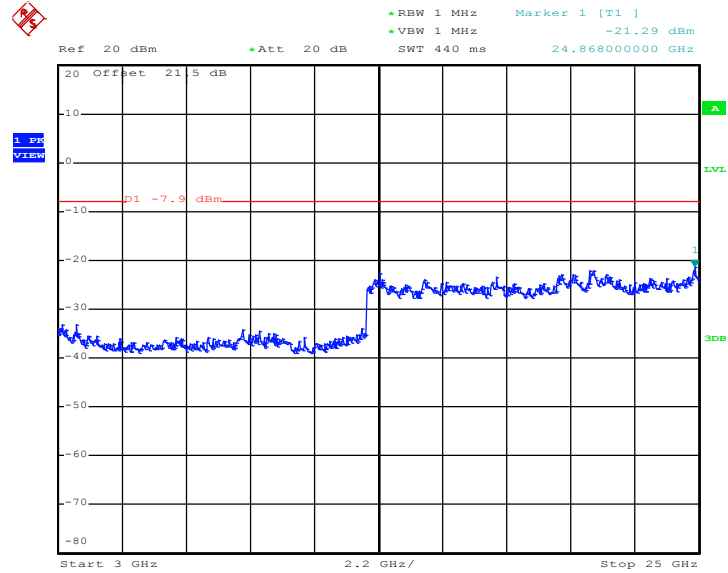
Conducted Spurious Emission Plot 2GHz ~ 3GHz



Date: 25.APR.2012 18:32:35



Conducted Spurious Emission Plot 3GHz ~ 25GHz

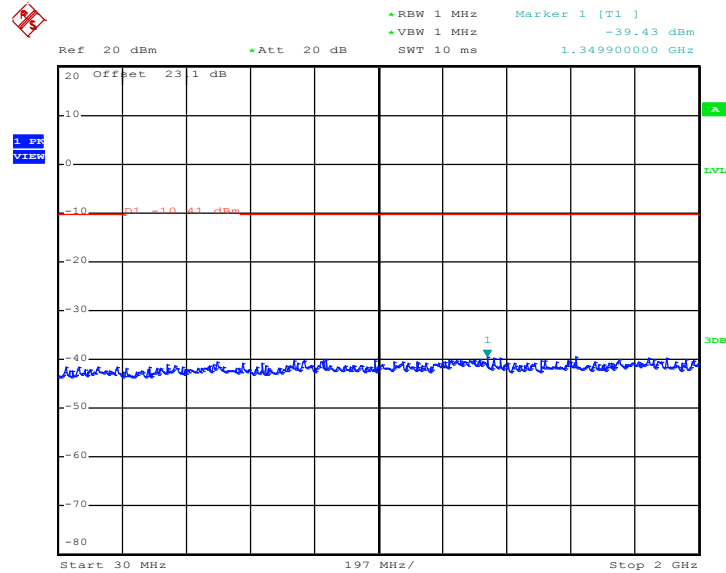


Date: 25.APR.2012 18:35:15



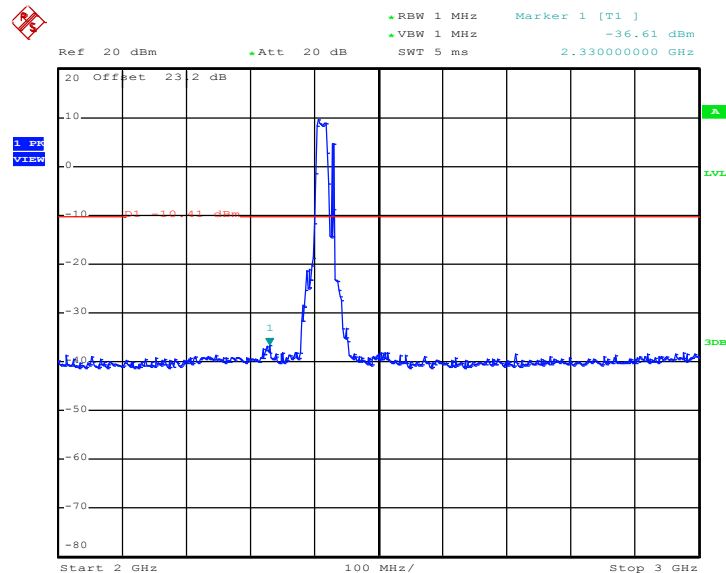
Test Mode :	PIFA Antenna Bluetooth 3DH1 (Ch27) + 802.11g (Ch01)	Temperature :	24~26°C
Test Engineer :	Pinkston Tu	Relative Humidity :	50~53%

Conducted Spurious Emission Plot 30MHz ~ 2GHz



Date: 5.JUN.2012 01:58:57

Conducted Spurious Emission Plot 2GHz ~ 3GHz

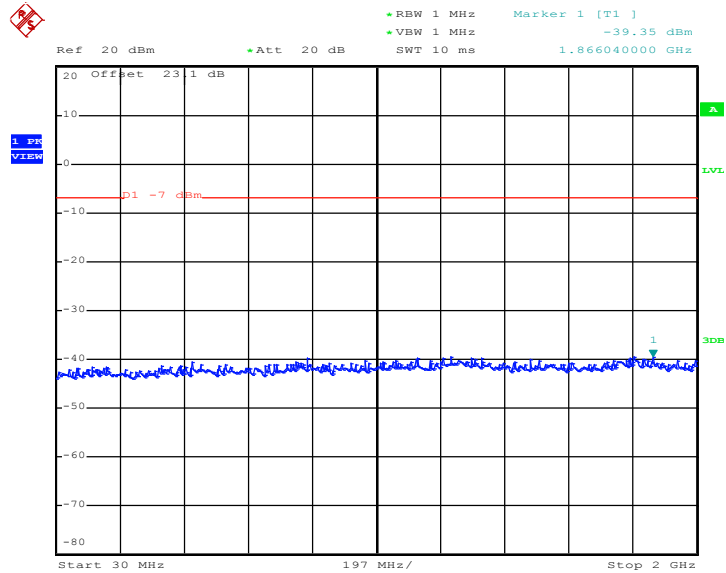


Date: 4.JUN.2012 23:10:44



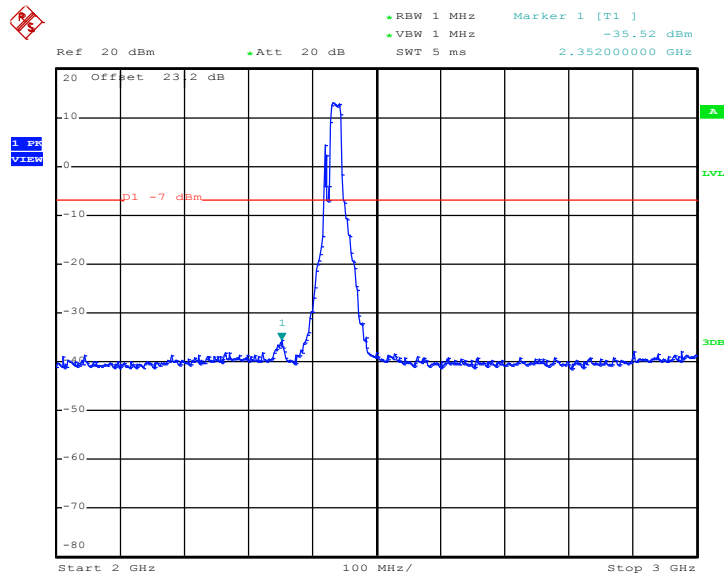
Test Mode :	PIFA Antenna Bluetooth 3DH1 (Ch18) + 802.11g (Ch06)	Temperature :	24~26°C
Test Engineer :	Pinkston Tu	Relative Humidity :	50~53%

Conducted Spurious Emission Plot 30MHz ~ 2GHz



Date: 5.JUN.2012 02:01:40

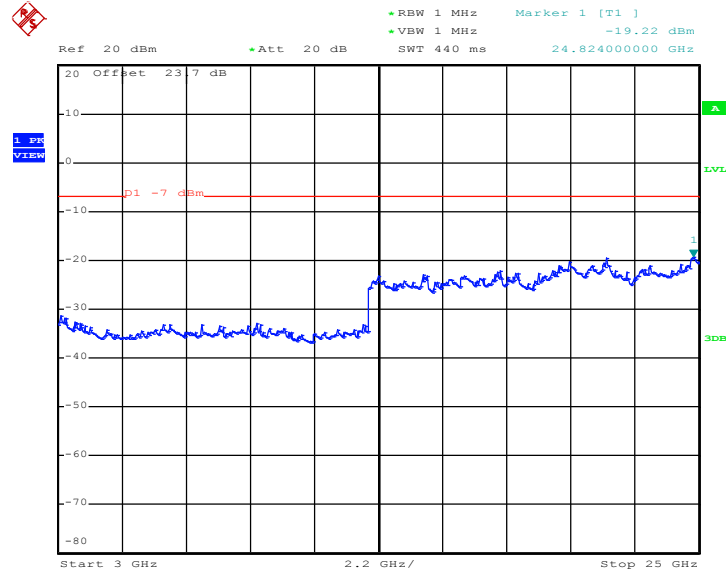
Conducted Spurious Emission Plot 2GHz ~ 3GHz



Date: 4.JUN.2012 22:31:02



Conducted Spurious Emission Plot 3GHz ~ 25GHz

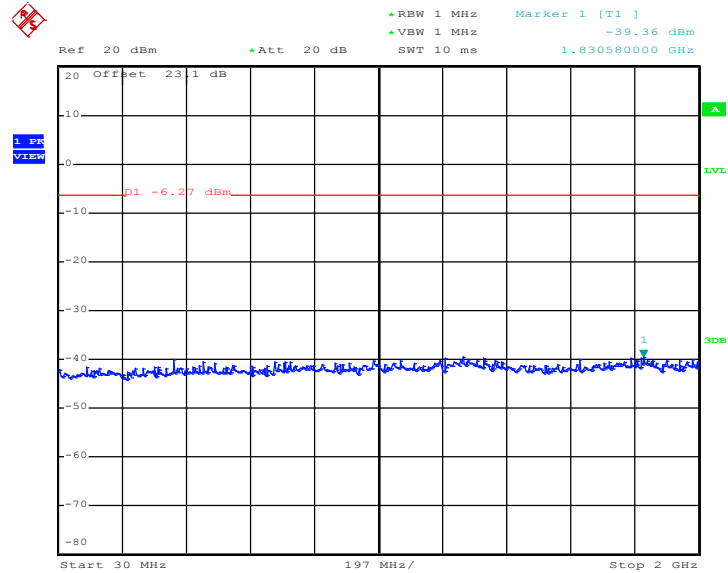


Date: 5.JUN.2012 02:00:54



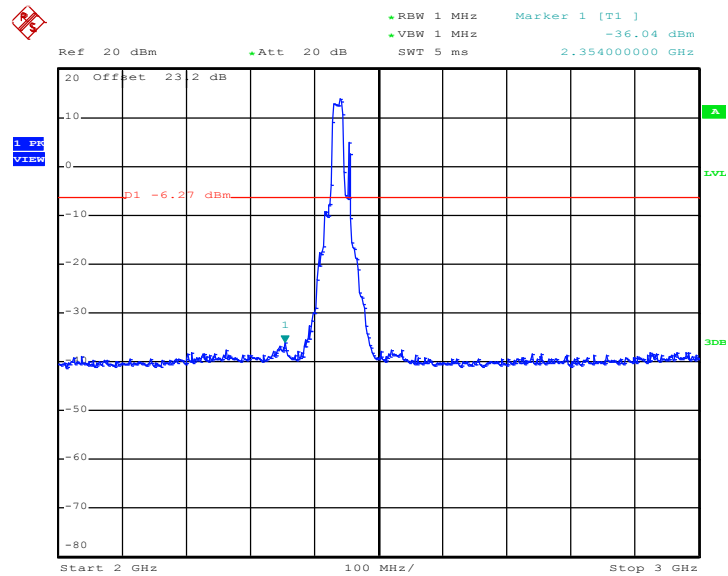
Test Mode :	PIFA Antenna Bluetooth 3DH1 (Ch52) + 802.11g (Ch06)	Temperature :	24~26°C
Test Engineer :	Pinkston Tu	Relative Humidity :	50~53%

Conducted Spurious Emission Plot 30MHz ~ 2GHz



Date: 5.JUN.2012 02:02:38

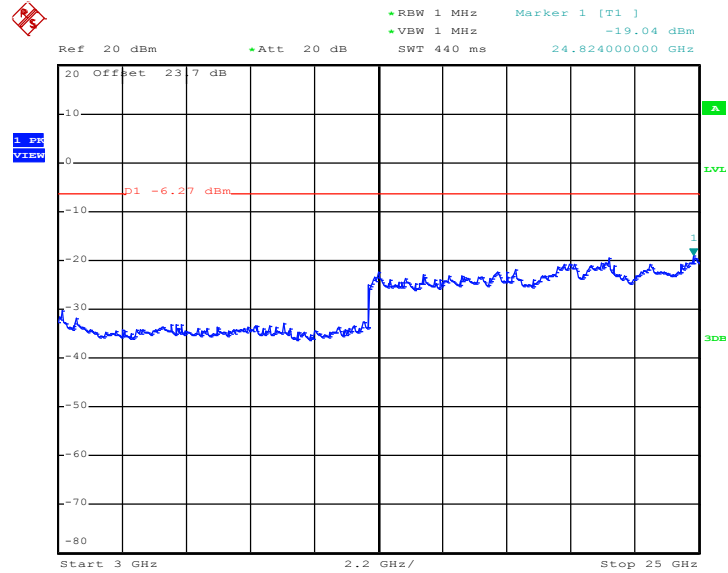
Conducted Spurious Emission Plot 2GHz ~ 3GHz



Date: 4.JUN.2012 22:35:40



Conducted Spurious Emission Plot 3GHz ~ 25GHz

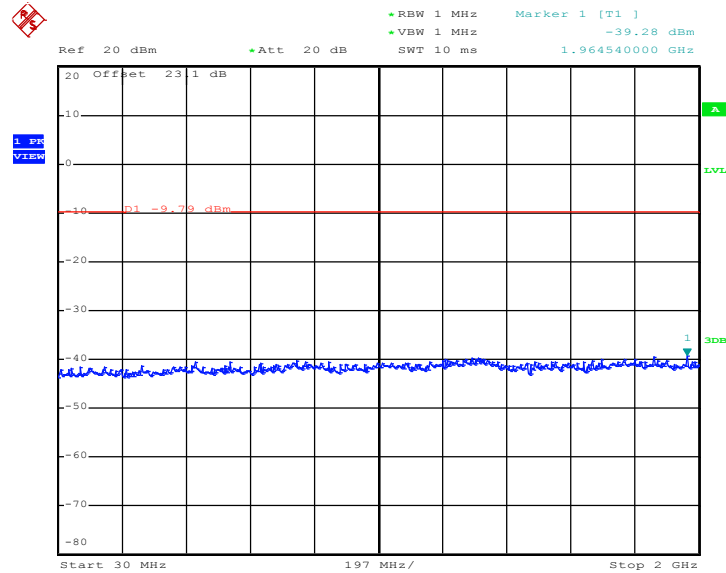


Date: 5.JUN.2012 02:03:53



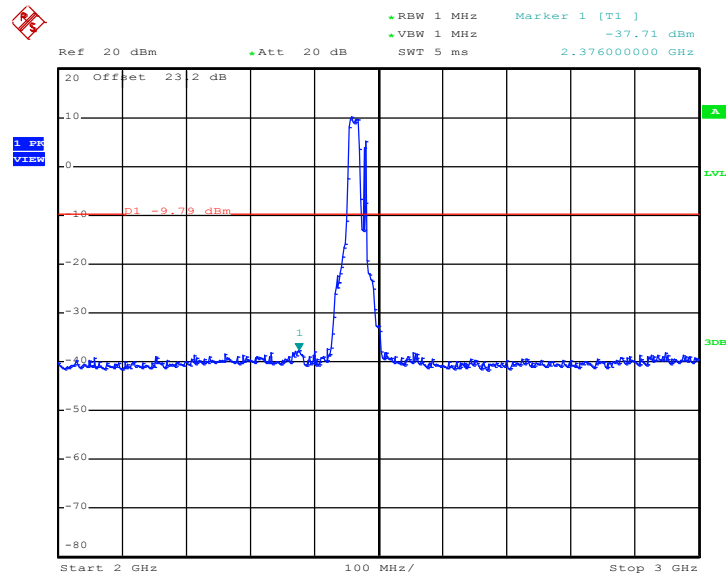
Test Mode :	PIFA Antenna Bluetooth 3DH1 (Ch77) + 802.11g (Ch11)	Temperature :	24~26°C
Test Engineer :	Pinkston Tu	Relative Humidity :	50~53%

Conducted Spurious Emission Plot 30MHz ~ 2GHz



Date: 5.JUN.2012 02:06:08

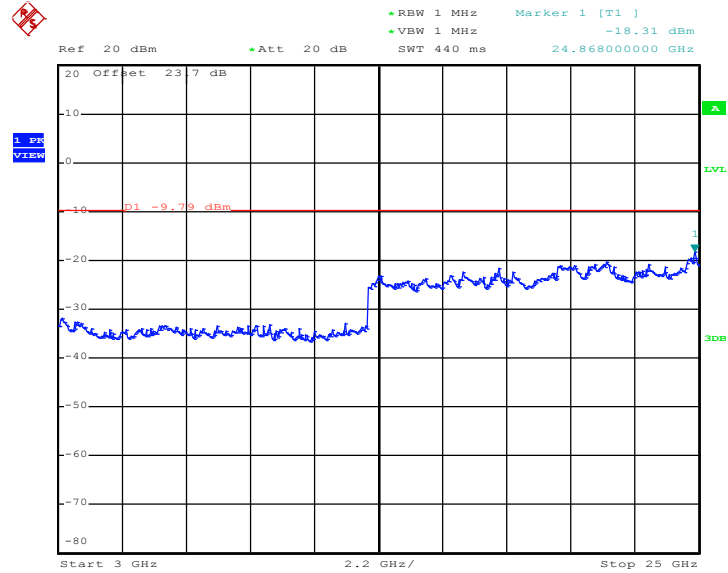
Conducted Spurious Emission Plot 2GHz ~ 3GHz



Date: 4.JUN.2012 23:08:26



Conducted Spurious Emission Plot 3GHz ~ 25GHz

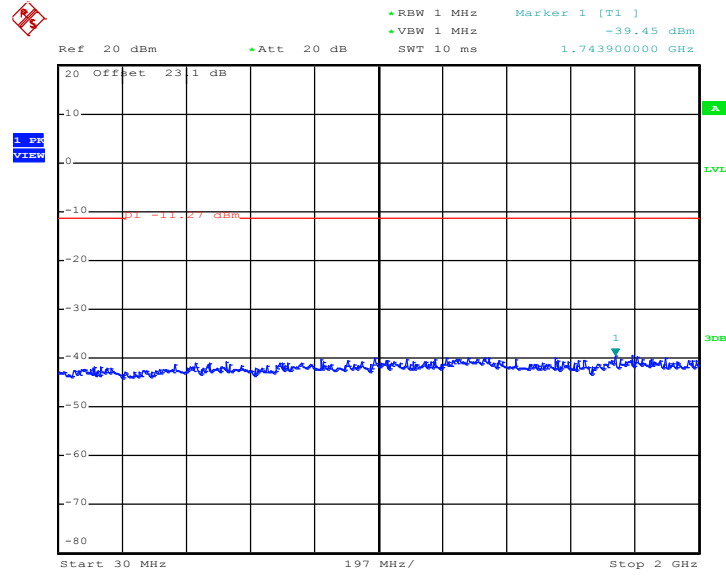


Date: 5.JUN.2012 02:05:16



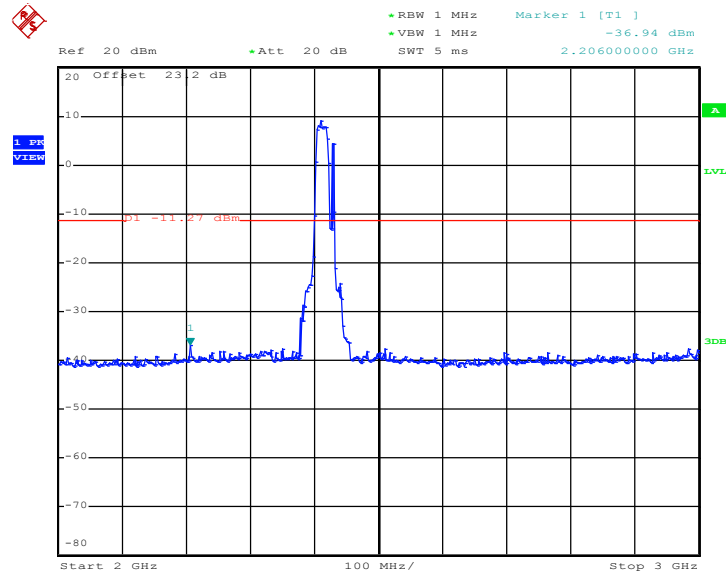
Test Mode :	PIFA Antenna Bluetooth 3DH1 (Ch27) + 802.11n (BW 20MHz) (Ch01)	Temperature :	24~26°C
Test Engineer :	Pinkston Tu	Relative Humidity :	50~53%

Conducted Spurious Emission Plot 30MHz ~ 2GHz



Date: 5.JUN.2012 02:22:46

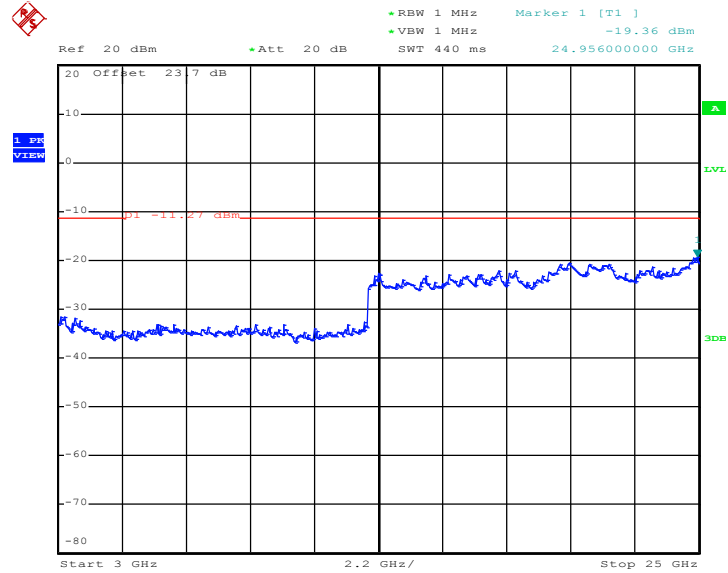
Conducted Spurious Emission Plot 2GHz ~ 3GHz



Date: 4.JUN.2012 22:51:28



Conducted Spurious Emission Plot 3GHz ~ 25GHz

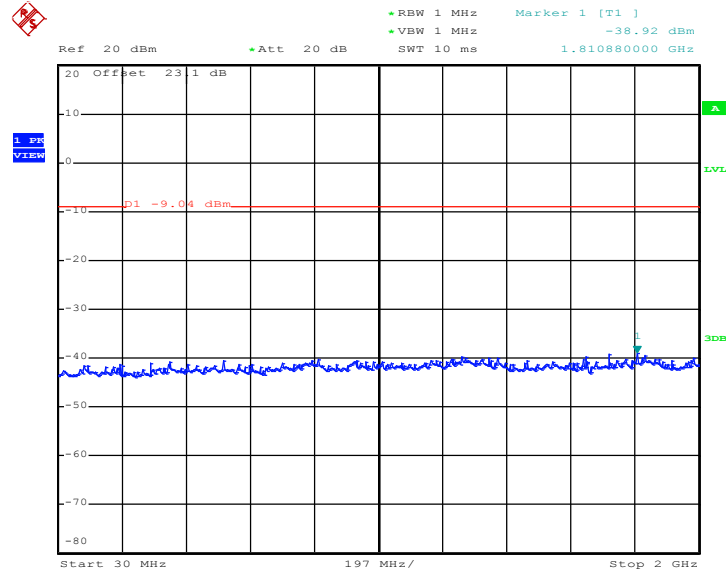


Date: 5.JUN.2012 02:22:04



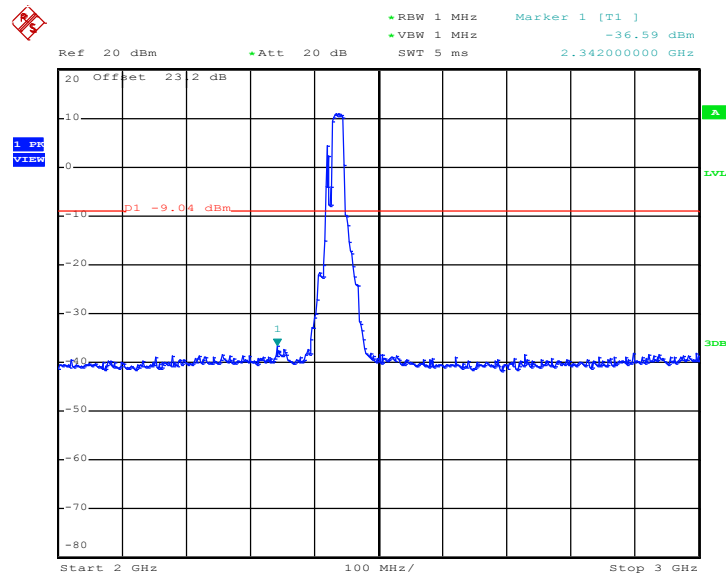
Test Mode :	PIFA Antenna Bluetooth 3DH1 (Ch18) + 802.11n (BW 20MHz) (Ch06)	Temperature :	24~26°C
Test Engineer :	Pinkston Tu	Relative Humidity :	50~53%

Conducted Spurious Emission Plot 30MHz ~ 2GHz



Date: 5.JUN.2012 02:18:05

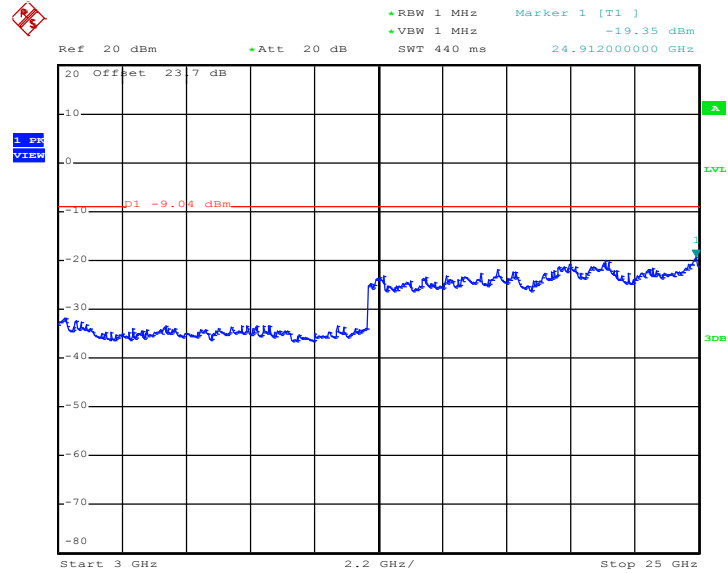
Conducted Spurious Emission Plot 2GHz ~ 3GHz



Date: 4.JUN.2012 23:00:04



Conducted Spurious Emission Plot 3GHz ~ 25GHz

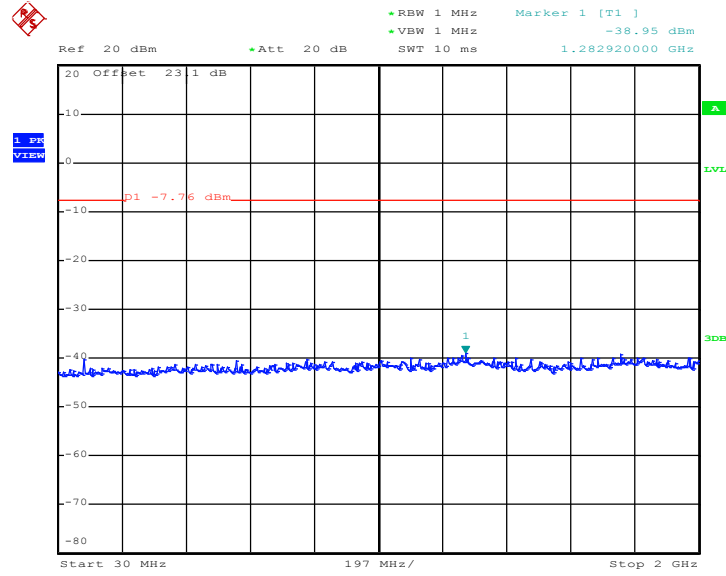


Date: 5.JUN.2012 02:12:57



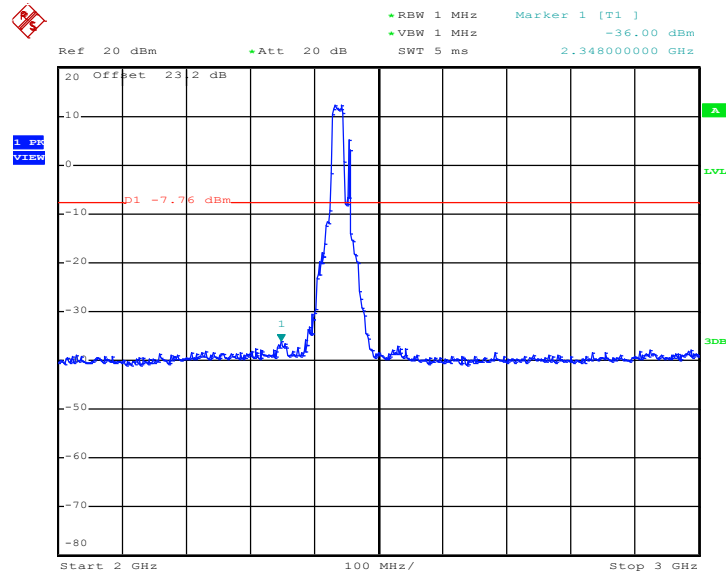
Test Mode :	PIFA Antenna Bluetooth 3DH1 (Ch52) + 802.11n (BW 20MHz) (Ch06)	Temperature :	24~26°C
Test Engineer :	Pinkston Tu	Relative Humidity :	50~53%

Conducted Spurious Emission Plot 30MHz ~ 2GHz



Date: 5.JUN.2012 02:10:57

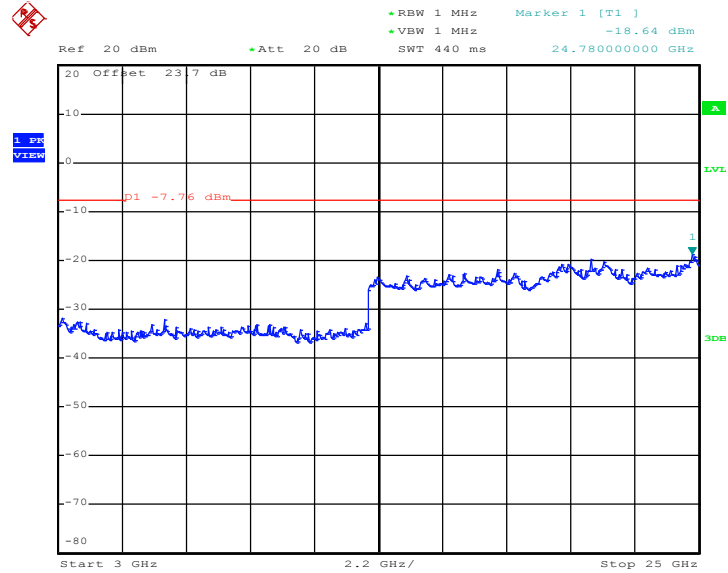
Conducted Spurious Emission Plot 2GHz ~ 3GHz



Date: 4.JUN.2012 23:03:45



Conducted Spurious Emission Plot 3GHz ~ 25GHz

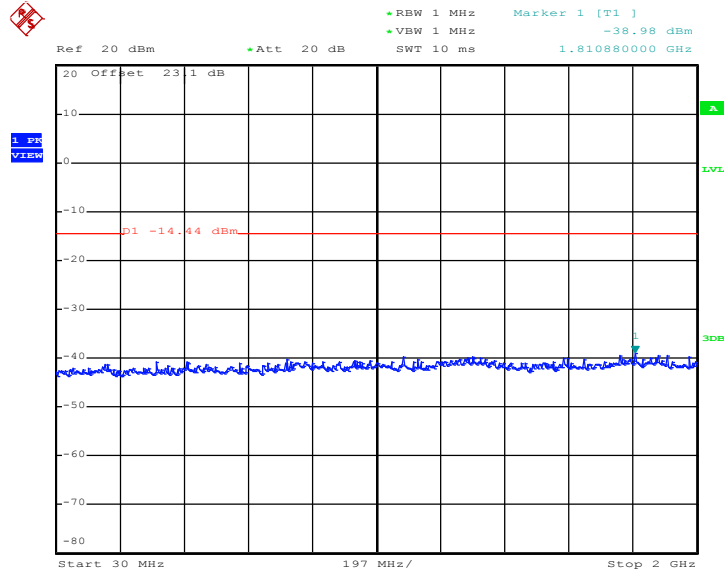


Date: 5.JUN.2012 02:12:10



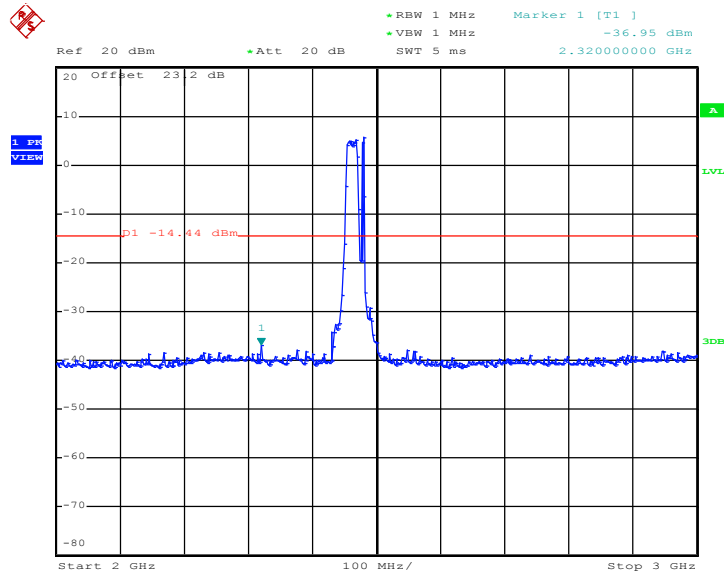
Test Mode :	PIFA Antenna Bluetooth 3DH1 (Ch77) + 802.11n (BW 20MHz) (Ch11)	Temperature :	24~26°C
Test Engineer :	Pinkston Tu	Relative Humidity :	50~53%

Conducted Spurious Emission Plot 30MHz ~ 2GHz



Date: 5.JUN.2012 02:19:11

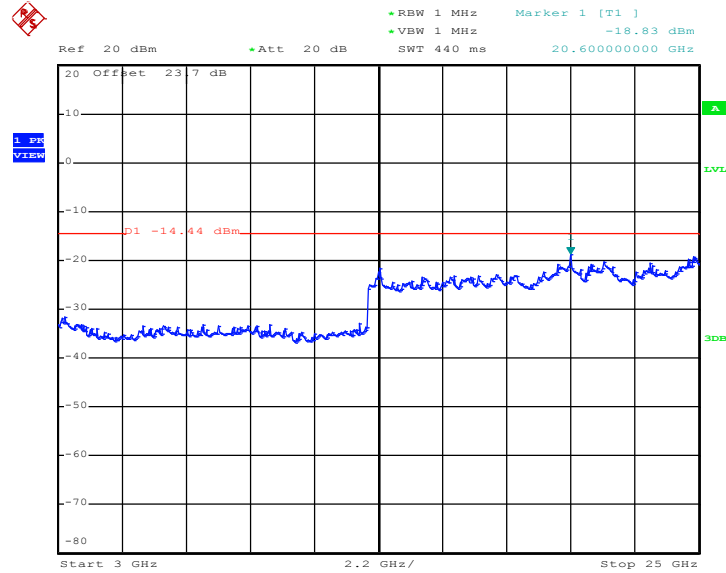
Conducted Spurious Emission Plot 2GHz ~ 3GHz



Date: 4.JUN.2012 23:05:58



Conducted Spurious Emission Plot 3GHz ~ 25GHz

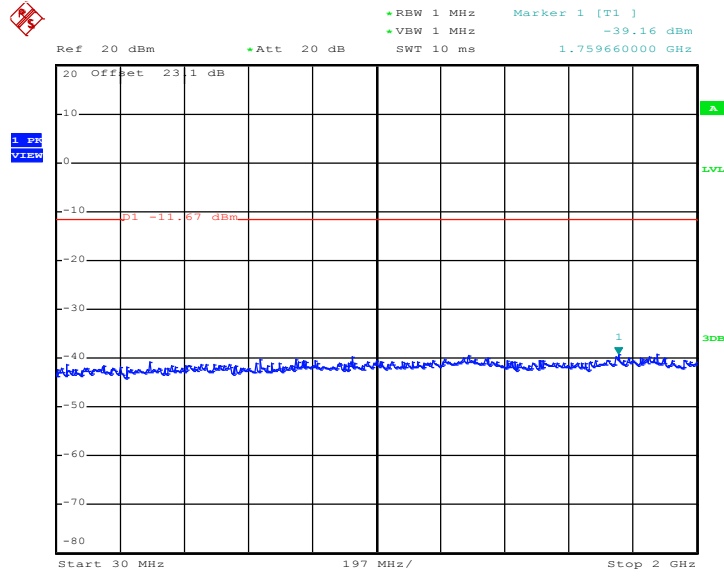


Date: 5.JUN.2012 02:20:20



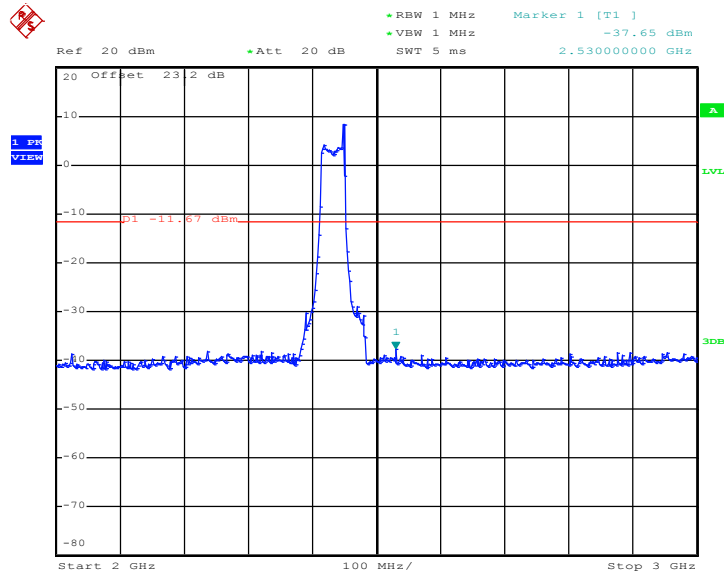
Test Mode :	PIFA Antenna Bluetooth 3DH1 (Ch47) + 802.11n (BW 40MHz) (Ch01)	Temperature :	24~26°C
Test Engineer :	Pinkston Tu	Relative Humidity :	50~53%

Conducted Spurious Emission Plot 30MHz ~ 2GHz



Date: 5.JUN.2012 02:25:28

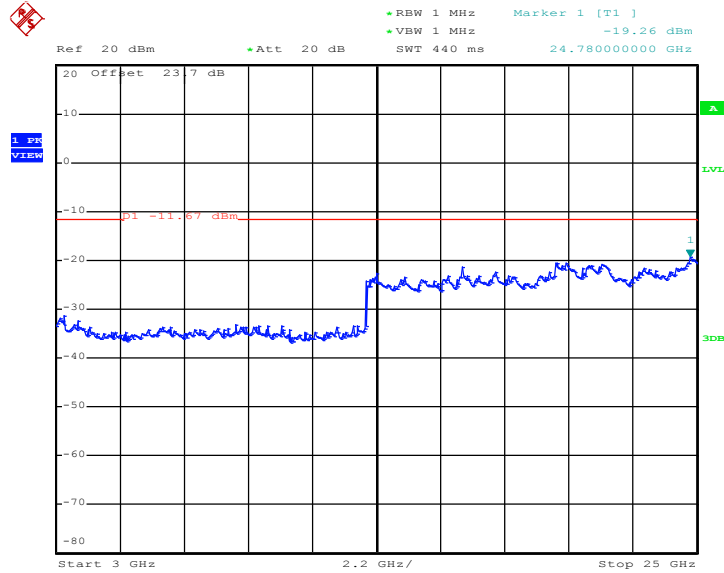
Conducted Spurious Emission Plot 2GHz ~ 3GHz



Date: 4.JUN.2012 23:14:23



Conducted Spurious Emission Plot 3GHz ~ 25GHz

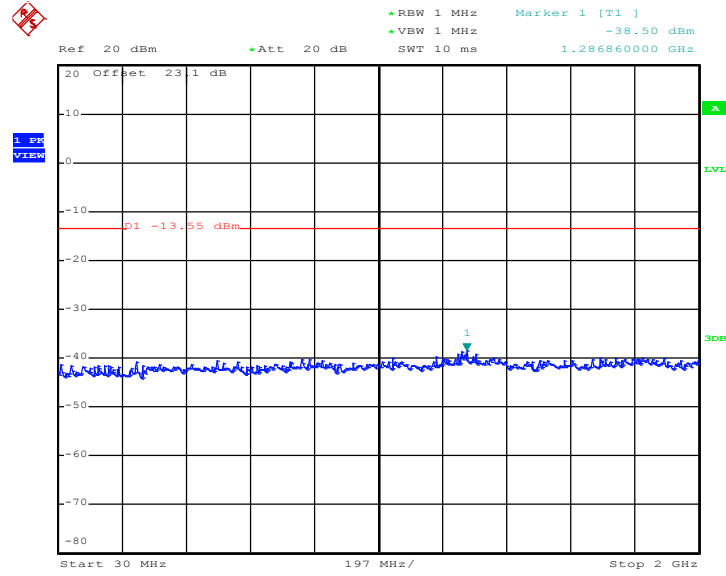


Date: 5.JUN.2012 02:26:39



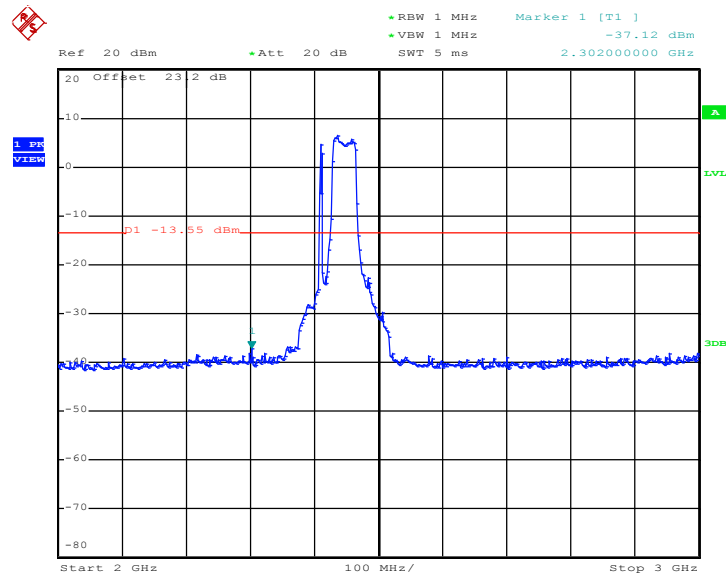
Test Mode :	PIFA Antenna Bluetooth 3DH1 (Ch08) + 802.11n (BW 40MHz) (Ch06)	Temperature :	24~26°C
Test Engineer :	Pinkston Tu	Relative Humidity :	50~53%

Conducted Spurious Emission Plot 30MHz ~ 2GHz



Date: 5.JUN.2012 02:31:08

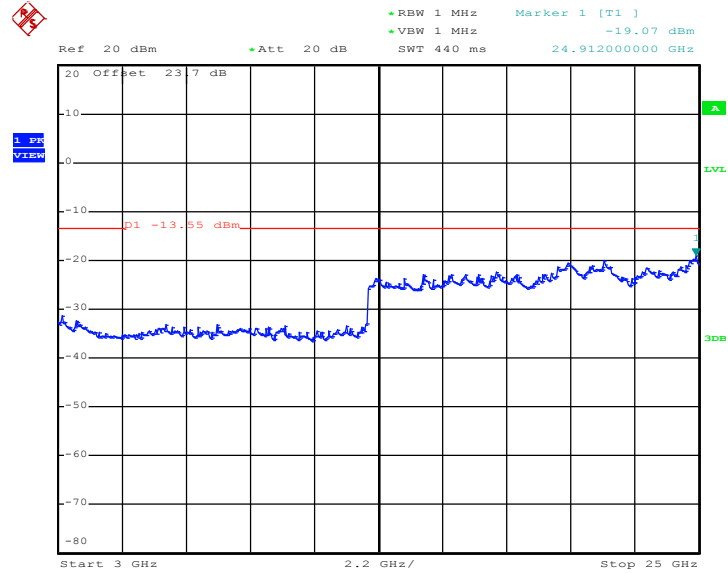
Conducted Spurious Emission Plot 2GHz ~ 3GHz



Date: 4.JUN.2012 23:27:31



Conducted Spurious Emission Plot 3GHz ~ 25GHz

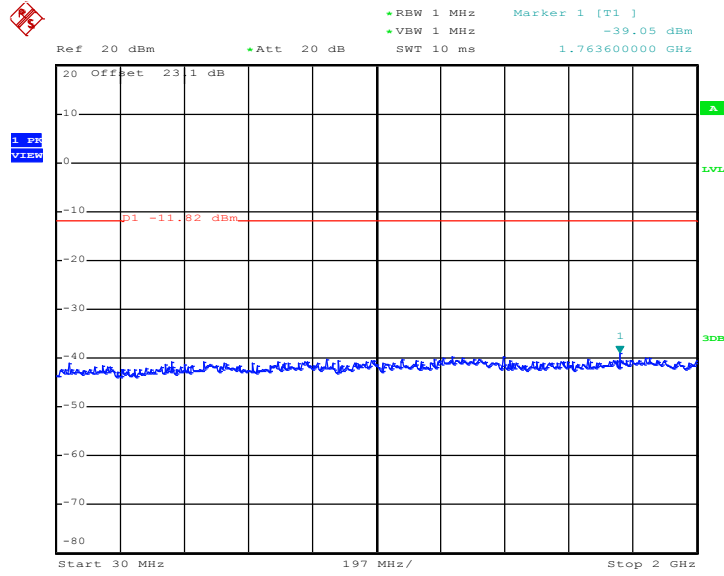


Date: 5.JUN.2012 02:30:11



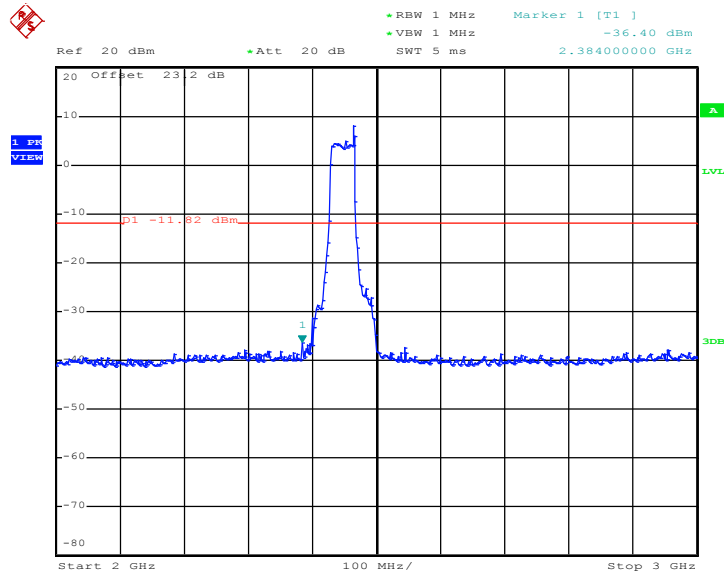
Test Mode :	PIFA Antenna Bluetooth 3DH1 (Ch62) + 802.11n (BW 40MHz) (Ch06)	Temperature :	24~26°C
Test Engineer :	Pinkston Tu	Relative Humidity :	50~53%

Conducted Spurious Emission Plot 30MHz ~ 2GHz



Date: 5.JUN.2012 02:28:23

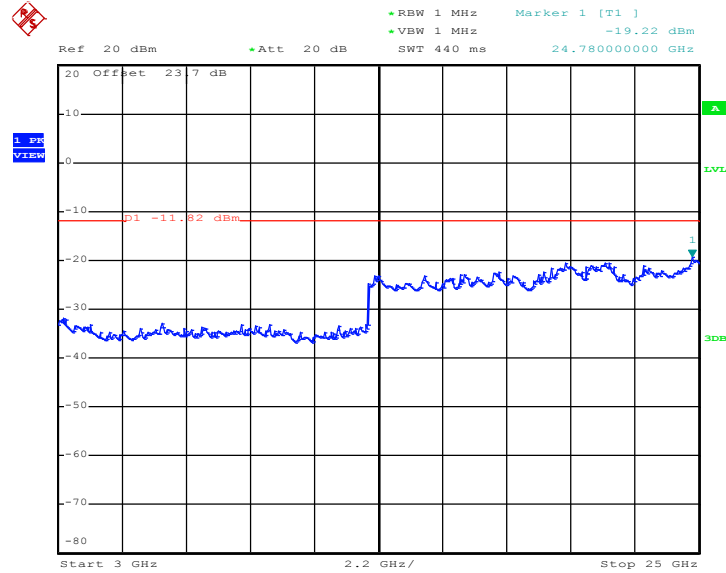
Conducted Spurious Emission Plot 2GHz ~ 3GHz



Date: 4.JUN.2012 23:20:47



Conducted Spurious Emission Plot 3GHz ~ 25GHz

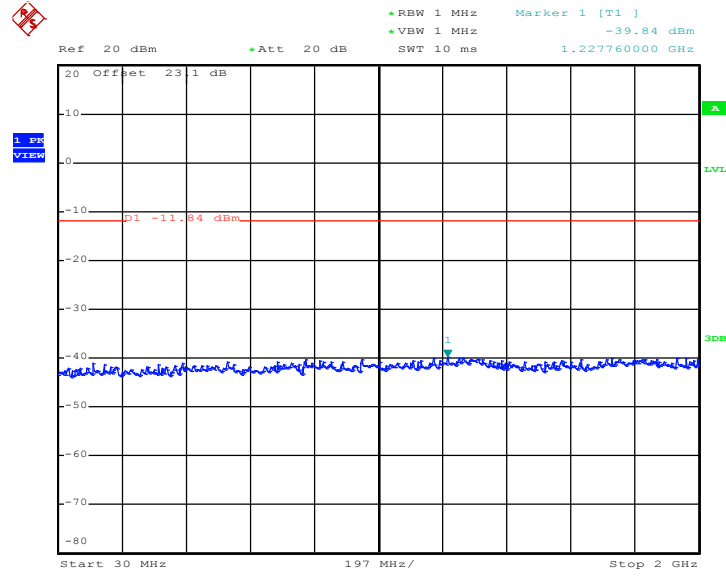


Date: 5.JUN.2012 02:27:44



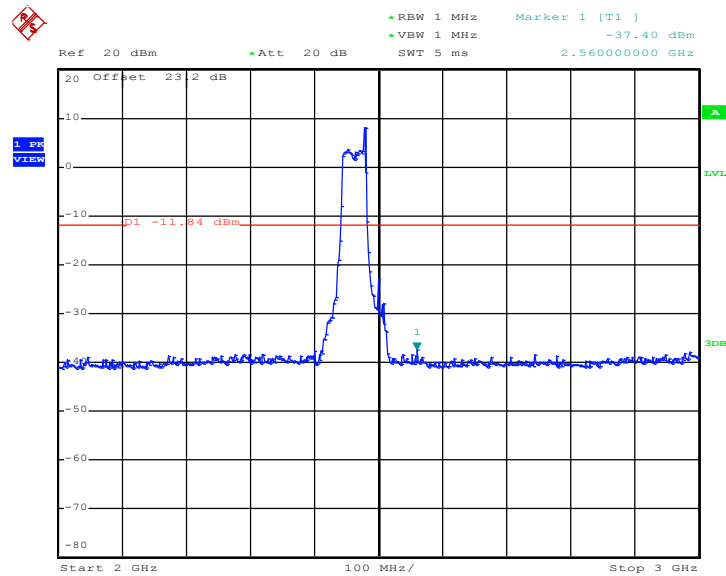
Test Mode :	PIFA Antenna Bluetooth 3DH1 (Ch77) + 802.11n (BW 40MHz) (Ch09)	Temperature :	24~26°C
Test Engineer :	Pinkston Tu	Relative Humidity :	50~53%

Conducted Spurious Emission Plot 30MHz ~ 2GHz



Date: 5.JUN.2012 02:32:48

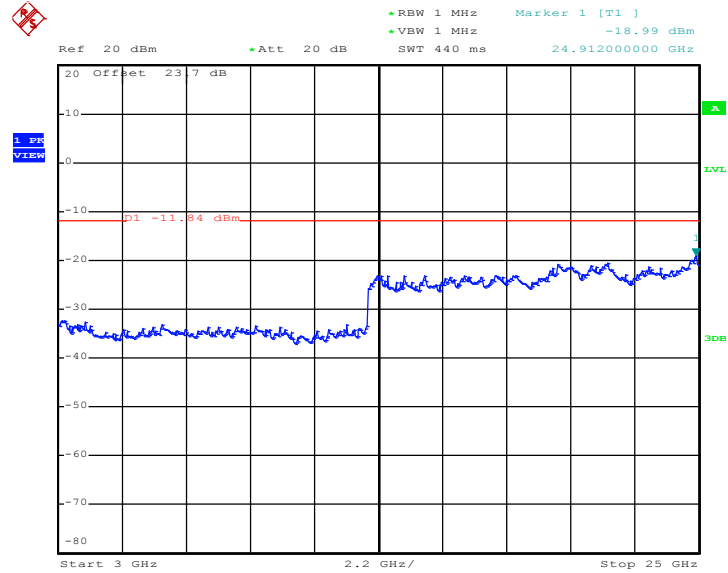
Conducted Spurious Emission Plot 2GHz ~ 3GHz



Date: 4.JUN.2012 23:30:27



Conducted Spurious Emission Plot 3GHz ~ 25GHz

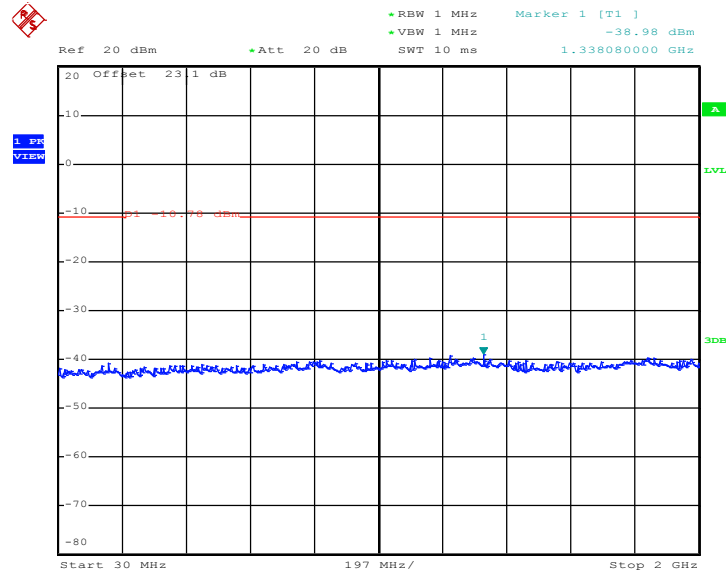


Date: 5.JUN.2012 02:33:26



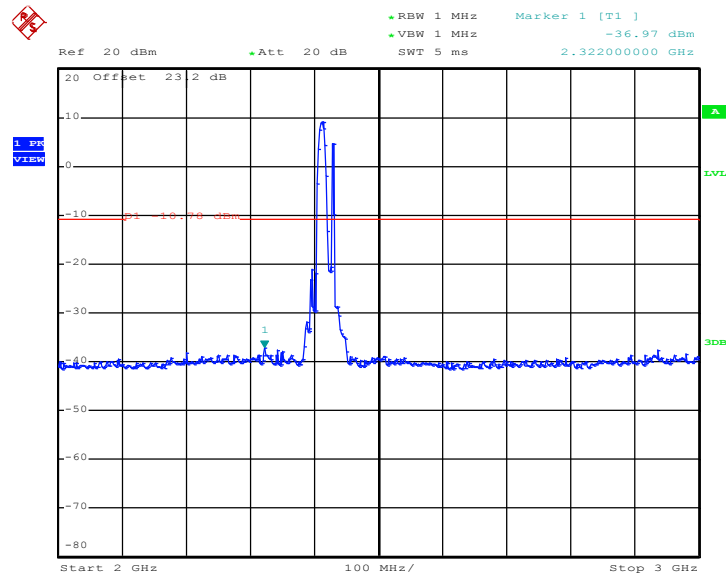
Test Mode :	Dipole Antenna Bluetooth 3DH1 (Ch27) + 802.11b (Ch01)	Temperature :	24~26°C
Test Engineer :	Pinkston Tu	Relative Humidity :	50~53%

Conducted Spurious Emission Plot 30MHz ~ 2GHz



Date: 5.JUN.2012 00:46:02

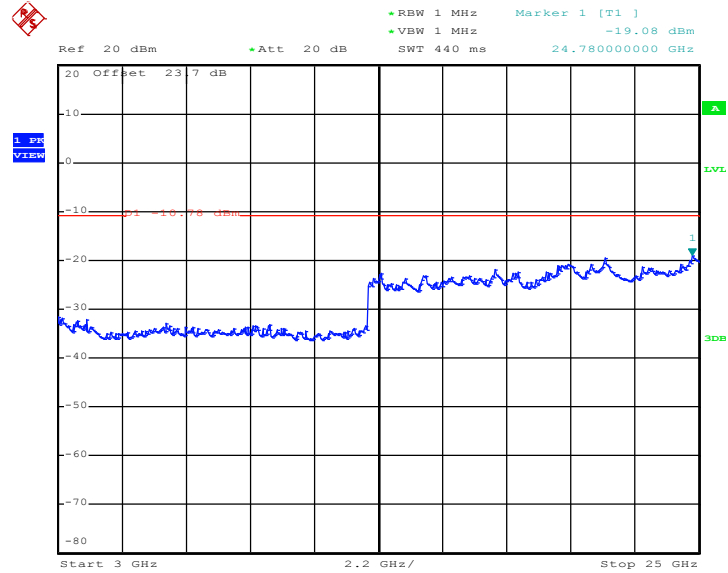
Conducted Spurious Emission Plot 2GHz ~ 3GHz



Date: 5.JUN.2012 00:19:32



Conducted Spurious Emission Plot 3GHz ~ 25GHz

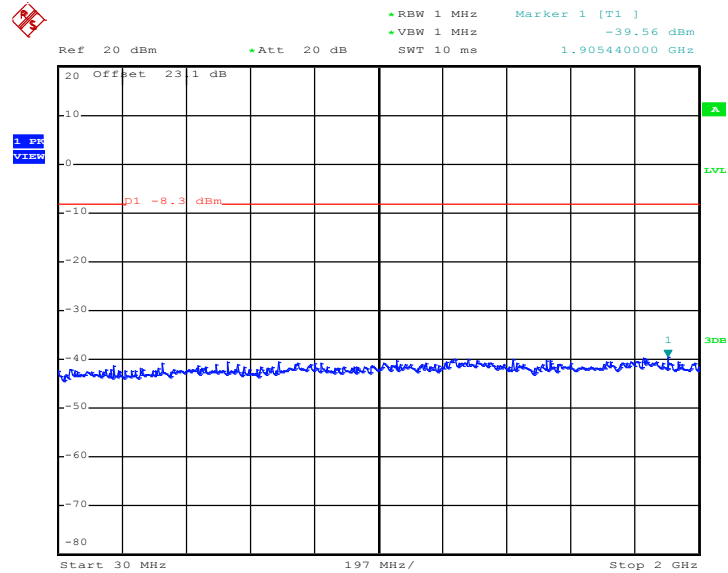


Date: 5.JUN.2012 00:51:31



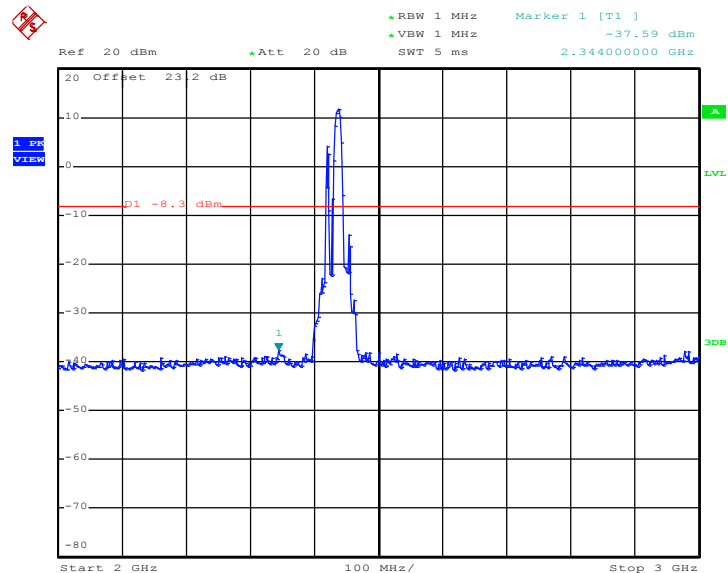
Test Mode :	Dipole Antenna Bluetooth 3DH1 (Ch18) + 802.11b (Ch06)	Temperature :	24~26°C
Test Engineer :	Pinkston Tu	Relative Humidity :	50~53%

Conducted Spurious Emission Plot 30MHz ~ 2GHz



Date: 5.JUN.2012 00:59:11

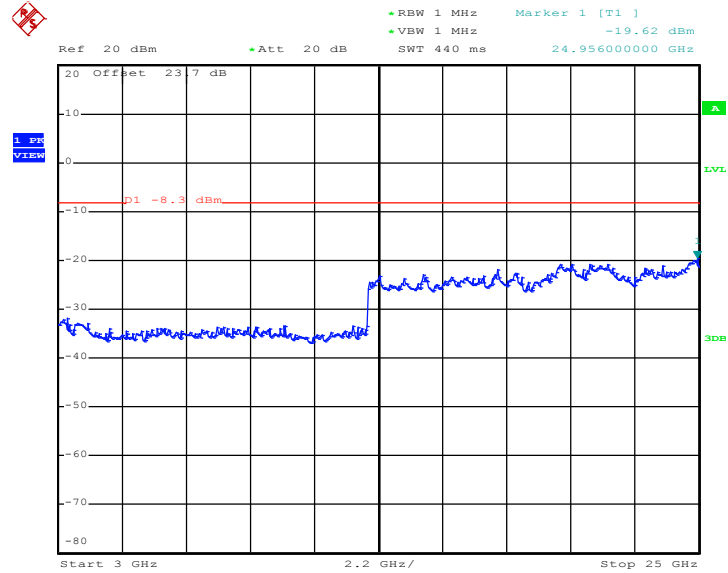
Conducted Spurious Emission Plot 2GHz ~ 3GHz



Date: 5.JUN.2012 00:21:10



Conducted Spurious Emission Plot 3GHz ~ 25GHz

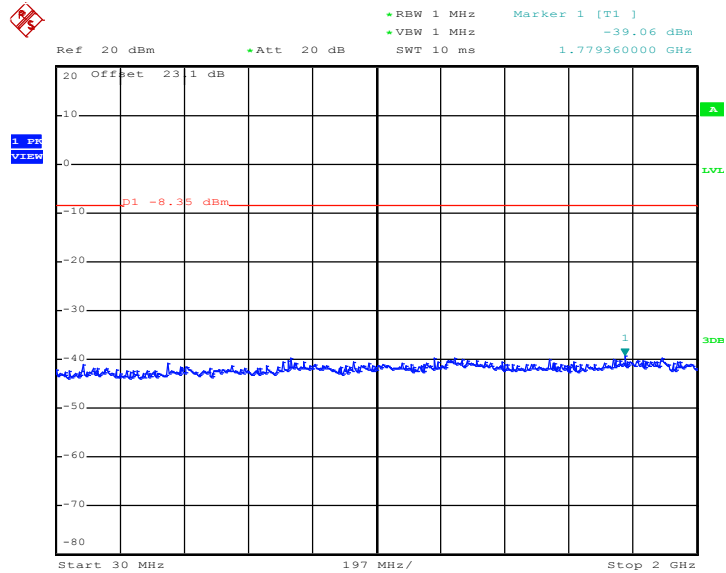


Date: 5.JUN.2012 01:03:08



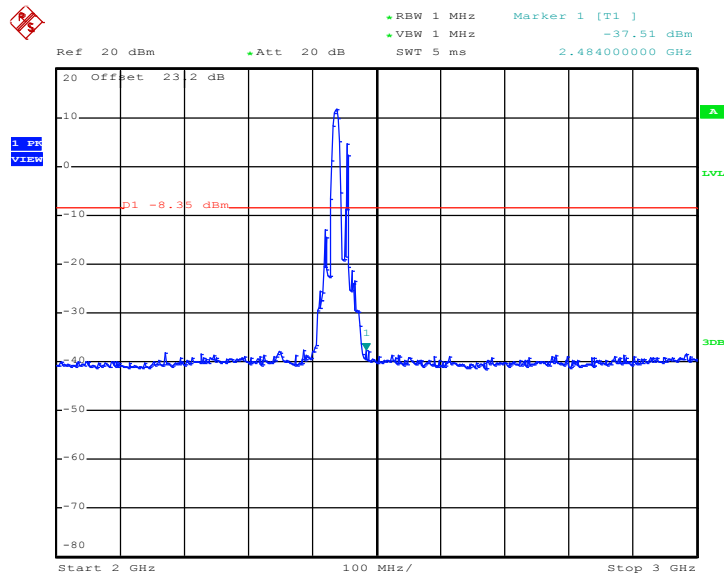
Test Mode :	Dipole Antenna Bluetooth 3DH1 (Ch52) + 802.11b (Ch06)	Temperature :	24~26°C
Test Engineer :	Pinkston Tu	Relative Humidity :	50~53%

Conducted Spurious Emission Plot 30MHz ~ 2GHz



Date: 5.JUN.2012 00:58:23

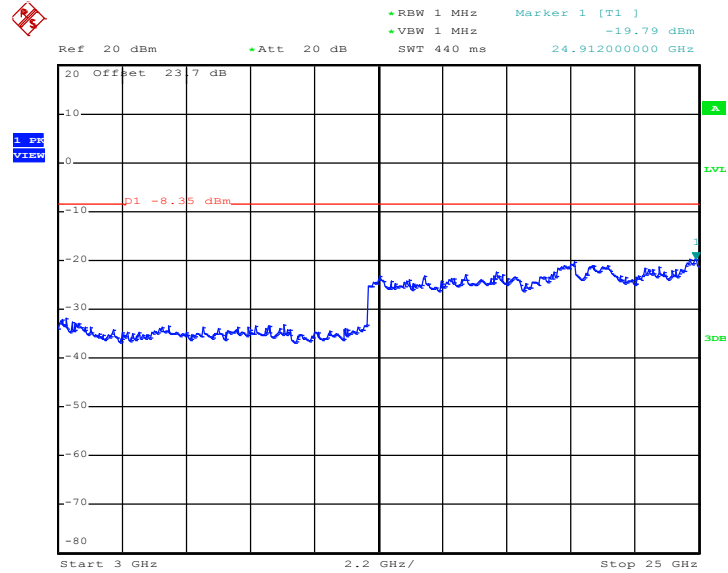
Conducted Spurious Emission Plot 2GHz ~ 3GHz



Date: 5.JUN.2012 00:22:30



Conducted Spurious Emission Plot 3GHz ~ 25GHz

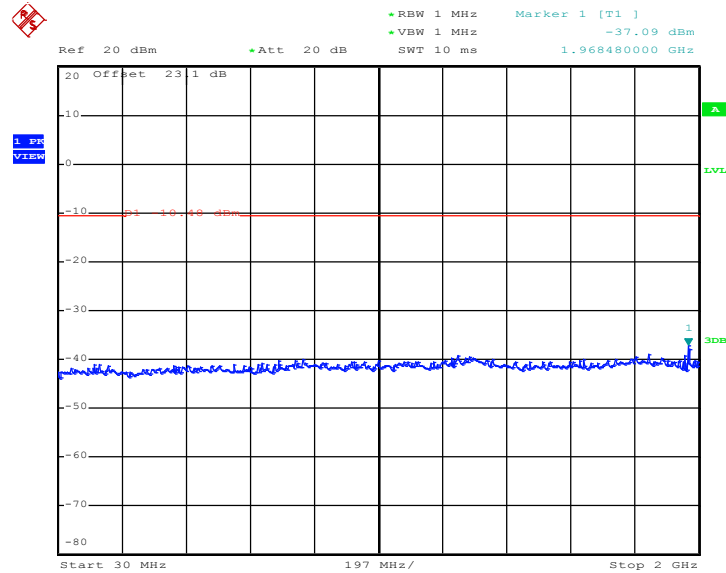


Date: 5.JUN.2012 00:56:31



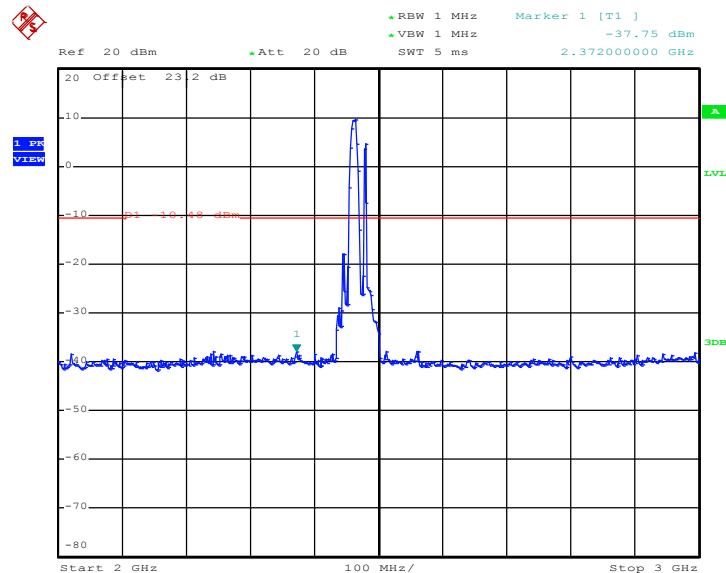
Test Mode :	Dipole Antenna Bluetooth 3DH1 (Ch77) + 802.11b (Ch11)	Temperature :	24~26°C
Test Engineer :	Pinkston Tu	Relative Humidity :	50~53%

Conducted Spurious Emission Plot 30MHz ~ 2GHz



Date: 5.JUN.2012 01:05:32

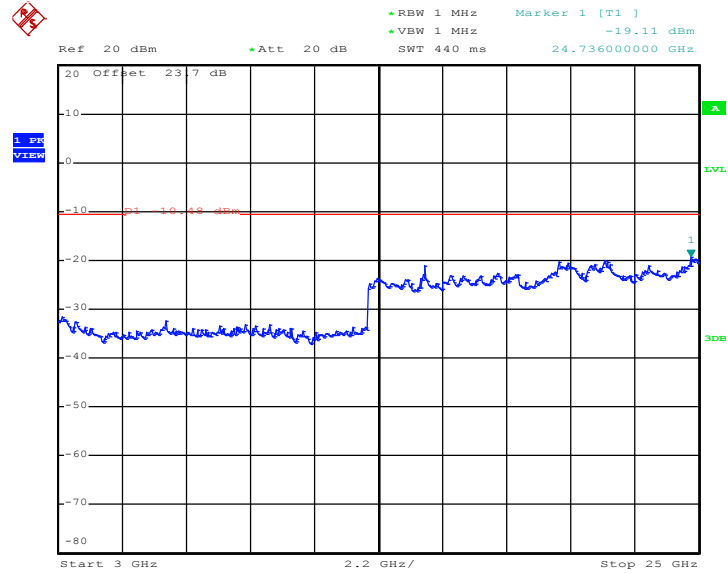
Conducted Spurious Emission Plot 2GHz ~ 3GHz



Date: 5.JUN.2012 00:26:06



Conducted Spurious Emission Plot 3GHz ~ 25GHz

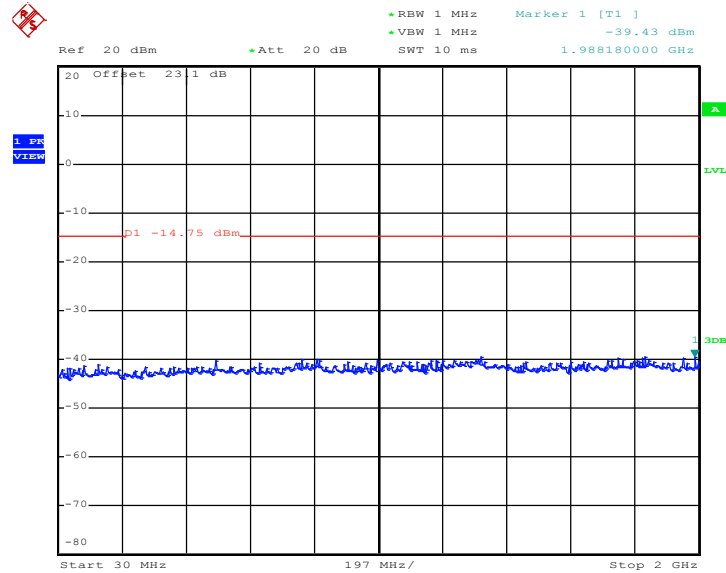


Date: 5.JUN.2012 01:01:37



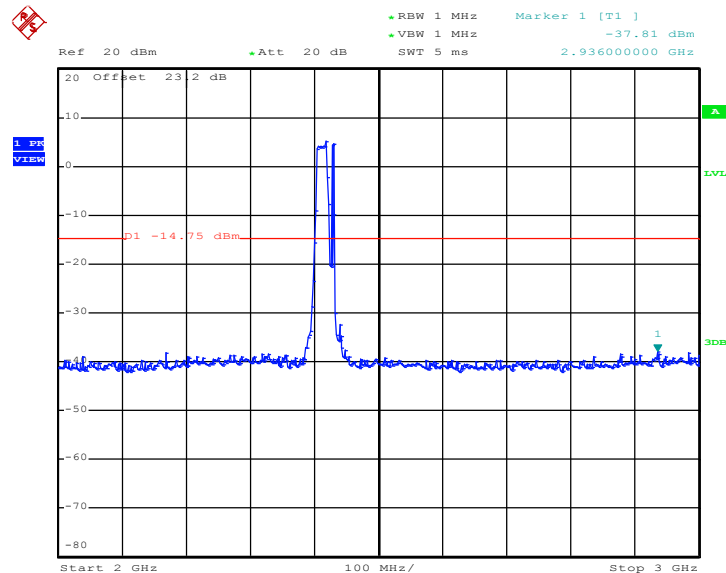
Test Mode :	Dipole Antenna Bluetooth 3DH1 (Ch27) + 802.11g (Ch01)	Temperature :	24~26°C
Test Engineer :	Pinkston Tu	Relative Humidity :	50~53%

Conducted Spurious Emission Plot 30MHz ~ 2GHz



Date: 5.JUN.2012 01:21:52

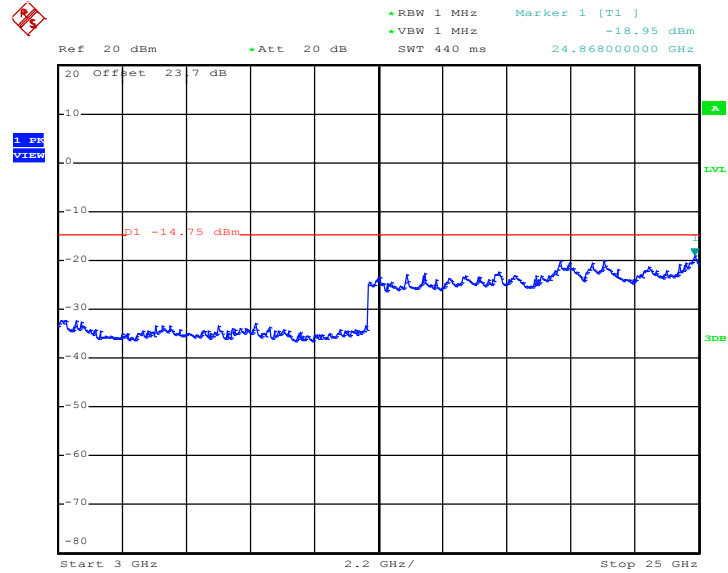
Conducted Spurious Emission Plot 2GHz ~ 3GHz



Date: 5.JUN.2012 00:17:14



Conducted Spurious Emission Plot 3GHz ~ 25GHz

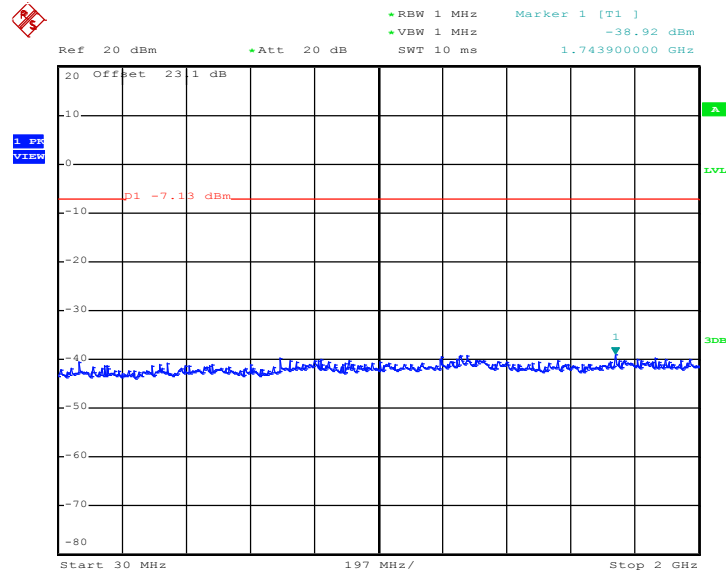


Date: 5.JUN.2012 01:21:06



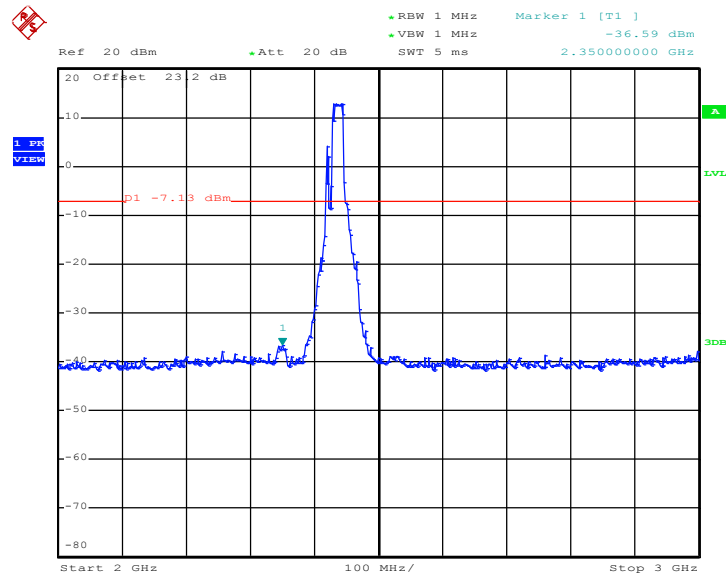
Test Mode :	Dipole Antenna Bluetooth 3DH1 (Ch18) + 802.11g (Ch06)	Temperature :	24~26°C
Test Engineer :	Pinkston Tu	Relative Humidity :	50~53%

Conducted Spurious Emission Plot 30MHz ~ 2GHz



Date: 5.JUN.2012 01:18:11

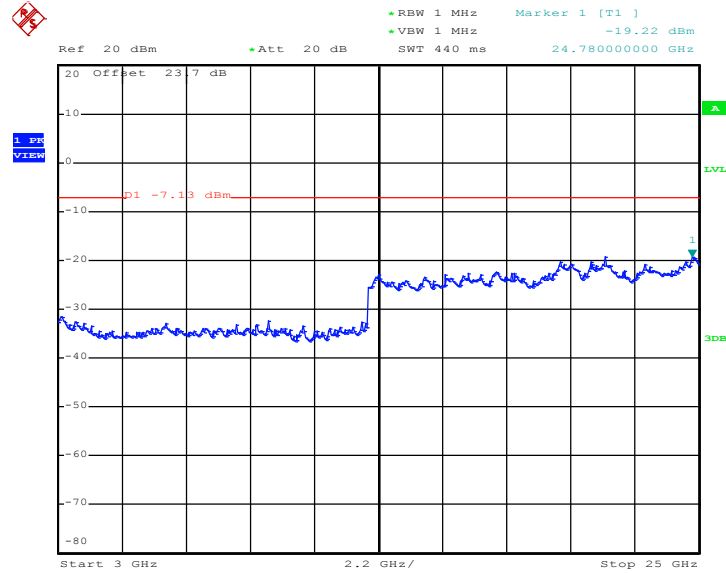
Conducted Spurious Emission Plot 2GHz ~ 3GHz



Date: 5.JUN.2012 00:15:08



Conducted Spurious Emission Plot 3GHz ~ 25GHz

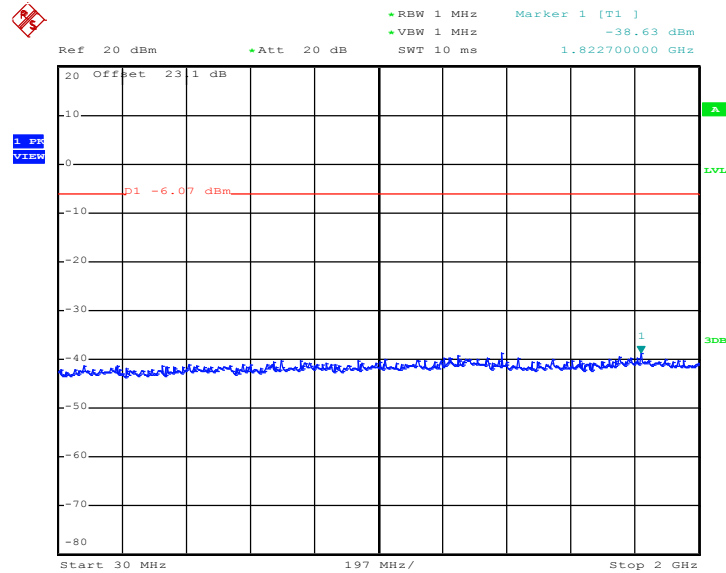


Date: 5.JUN.2012 01:19:40



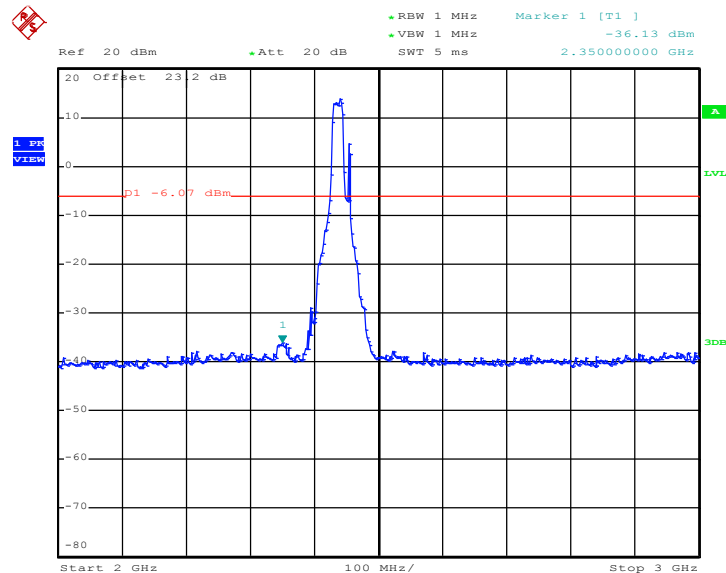
Test Mode :	Dipole Antenna Bluetooth 3DH1 (Ch52) + 802.11g (Ch06)	Temperature :	24~26°C
Test Engineer :	Pinkston Tu	Relative Humidity :	50~53%

Conducted Spurious Emission Plot 30MHz ~ 2GHz



Date: 5.JUN.2012 01:17:13

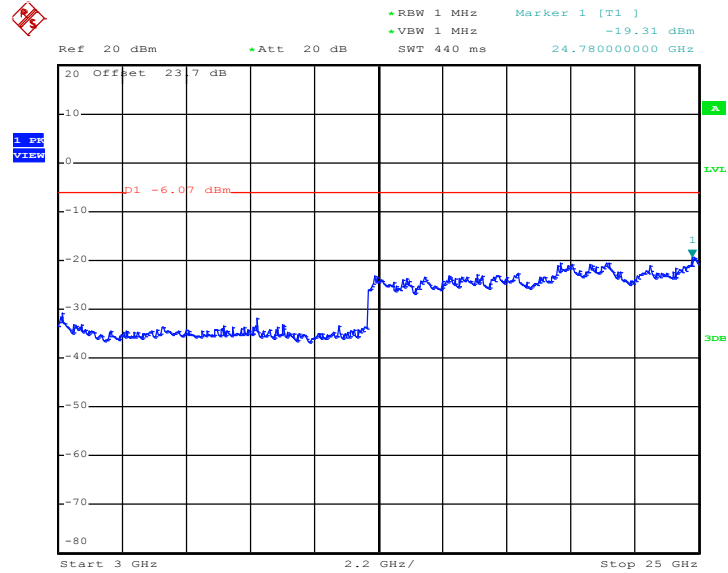
Conducted Spurious Emission Plot 2GHz ~ 3GHz



Date: 5.JUN.2012 00:14:01



Conducted Spurious Emission Plot 3GHz ~ 25GHz

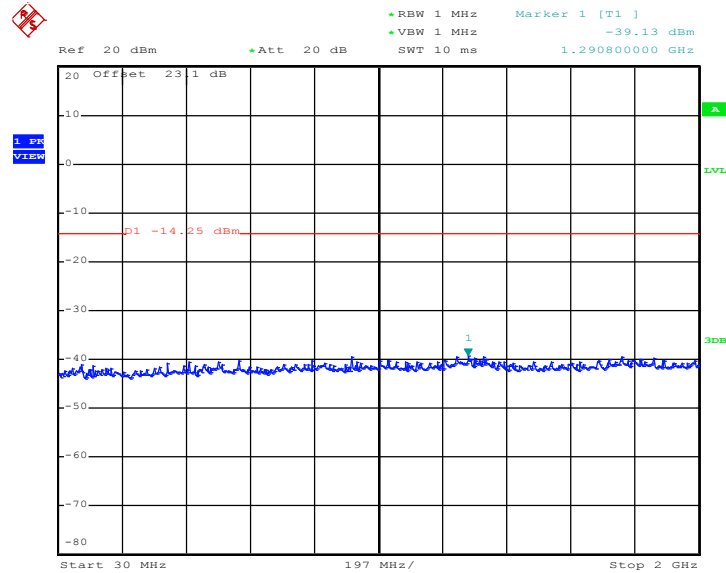


Date: 5.JUN.2012 01:15:40



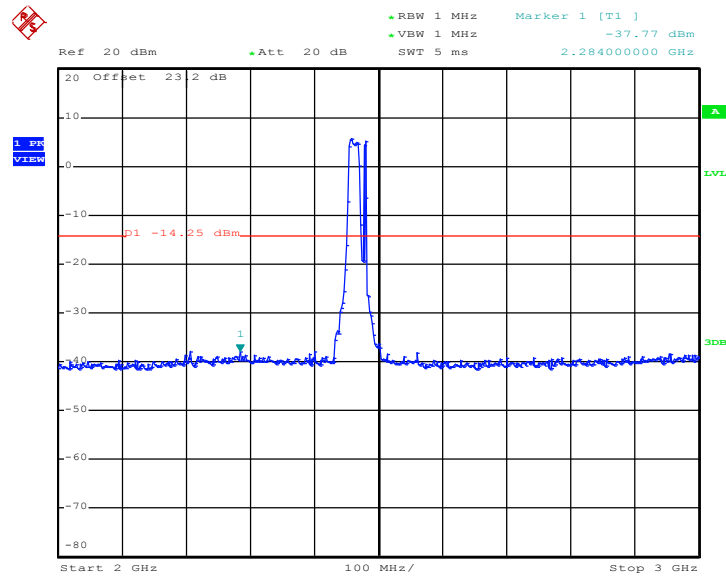
Test Mode :	Dipole Antenna Bluetooth 3DH1 (Ch77) + 802.11g (Ch11)	Temperature :	24~26°C
Test Engineer :	Pinkston Tu	Relative Humidity :	50~53%

Conducted Spurious Emission Plot 30MHz ~ 2GHz



Date: 5.JUN.2012 01:07:39

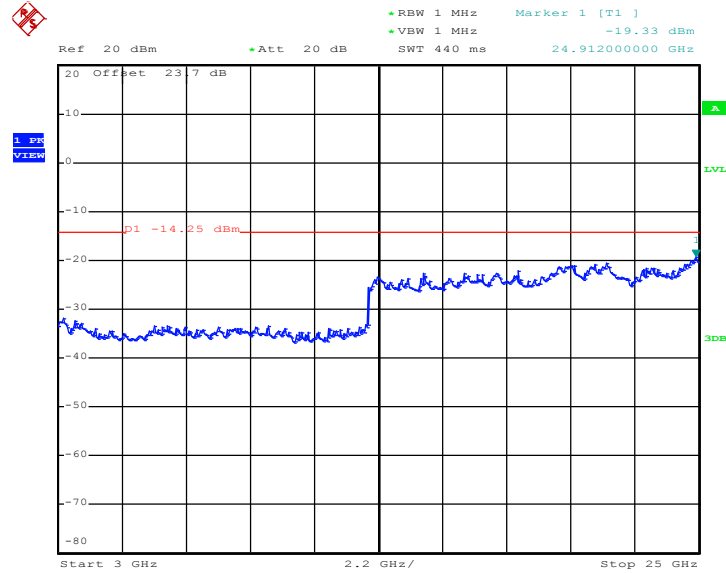
Conducted Spurious Emission Plot 2GHz ~ 3GHz



Date: 5.JUN.2012 00:11:35



Conducted Spurious Emission Plot 3GHz ~ 25GHz

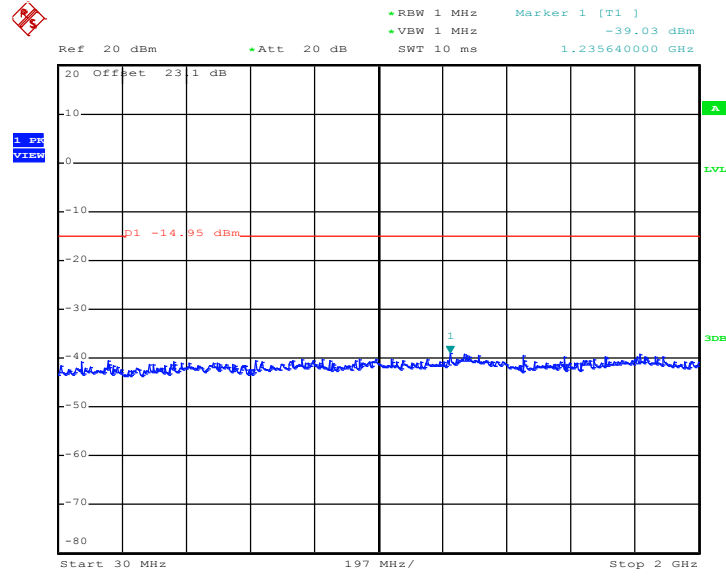


Date: 5.JUN.2012 01:08:46



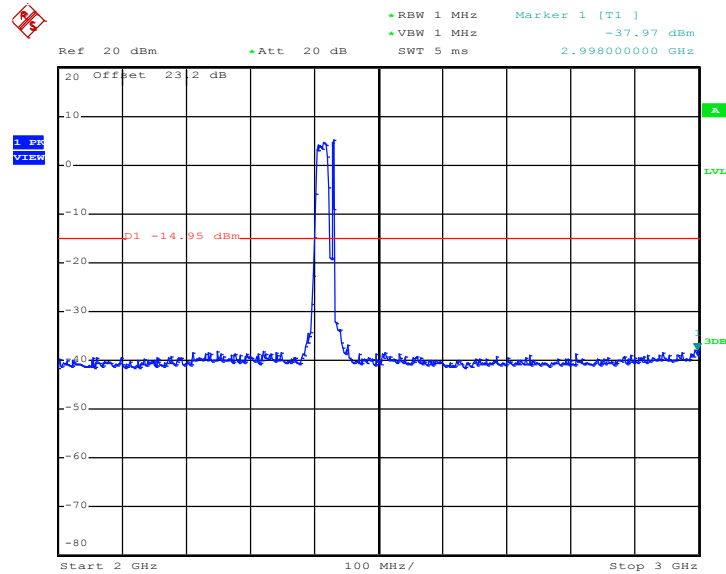
Test Mode :	Dipole Antenna Bluetooth 3DH1 (Ch27) + 802.11n (BW 20MHz) (Ch01)	Temperature :	24~26°C
Test Engineer :	Pinkston Tu	Relative Humidity :	50~53%

Conducted Spurious Emission Plot 30MHz ~ 2GHz



Date: 5.JUN.2012 01:23:57

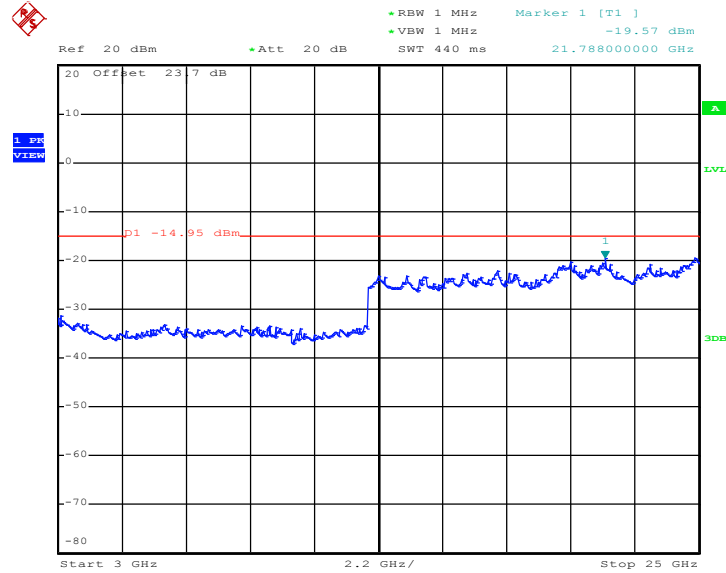
Conducted Spurious Emission Plot 2GHz ~ 3GHz



Date: 5.JUN.2012 00:09:19



Conducted Spurious Emission Plot 3GHz ~ 25GHz

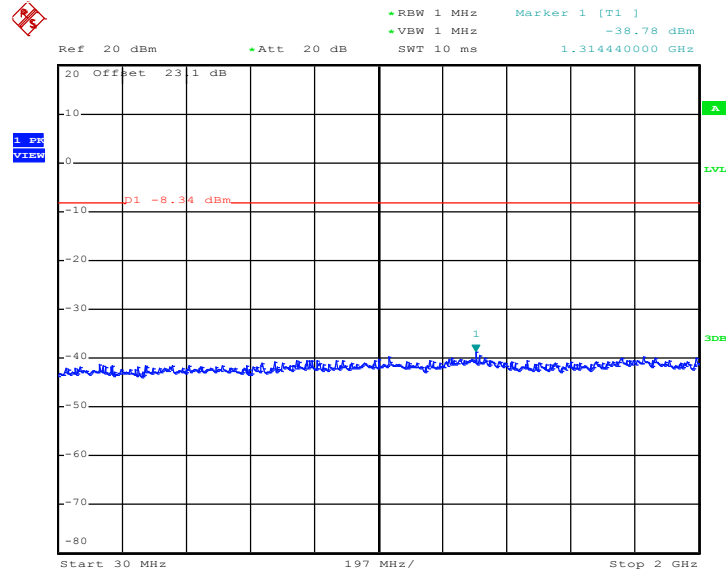


Date: 5.JUN.2012 01:24:54



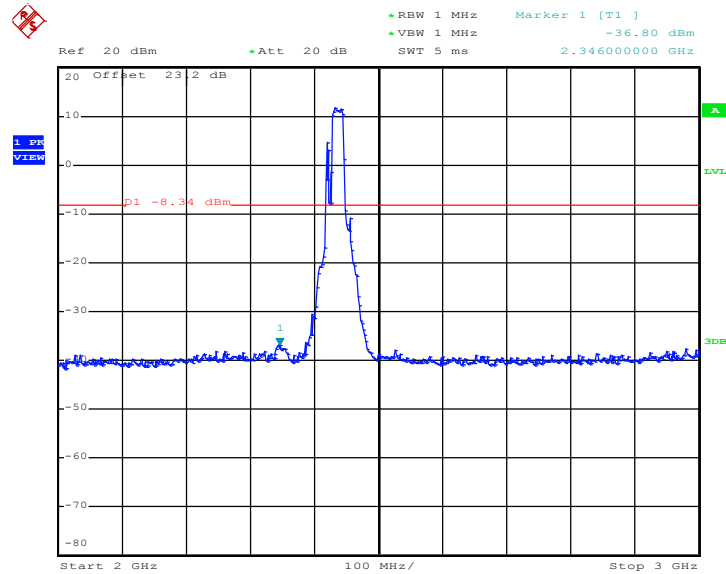
Test Mode :	Dipole Antenna Bluetooth 3DH1 (Ch18) + 802.11n (BW 20MHz) (Ch06)	Temperature :	24~26°C
Test Engineer :	Pinkston Tu	Relative Humidity :	50~53%

Conducted Spurious Emission Plot 30MHz ~ 2GHz



Date: 5.JUN.2012 01:54:17

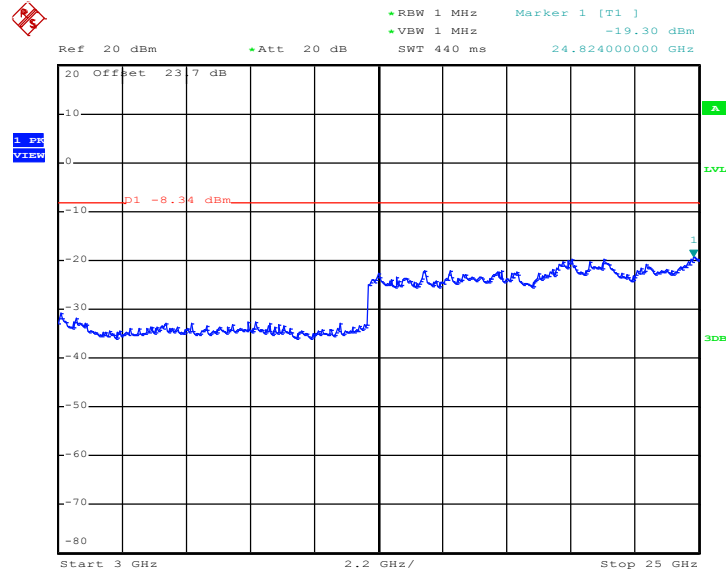
Conducted Spurious Emission Plot 2GHz ~ 3GHz



Date: 5.JUN.2012 00:06:54



Conducted Spurious Emission Plot 3GHz ~ 25GHz

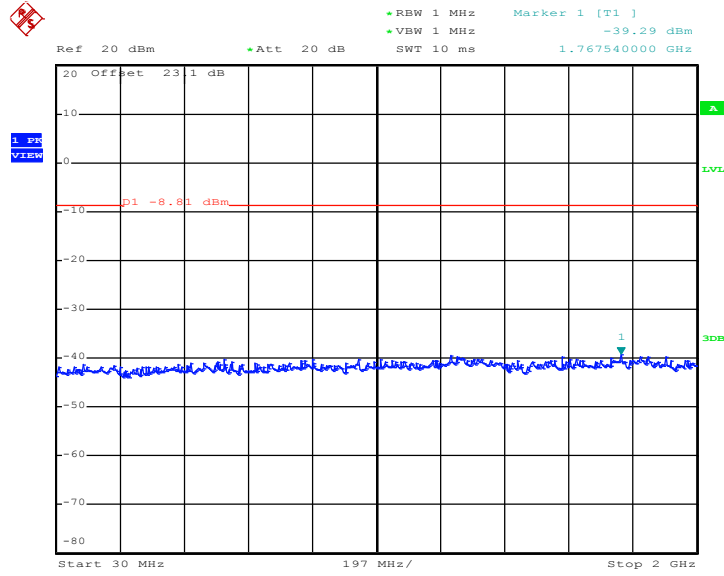


Date: 5.JUN.2012 01:56:24



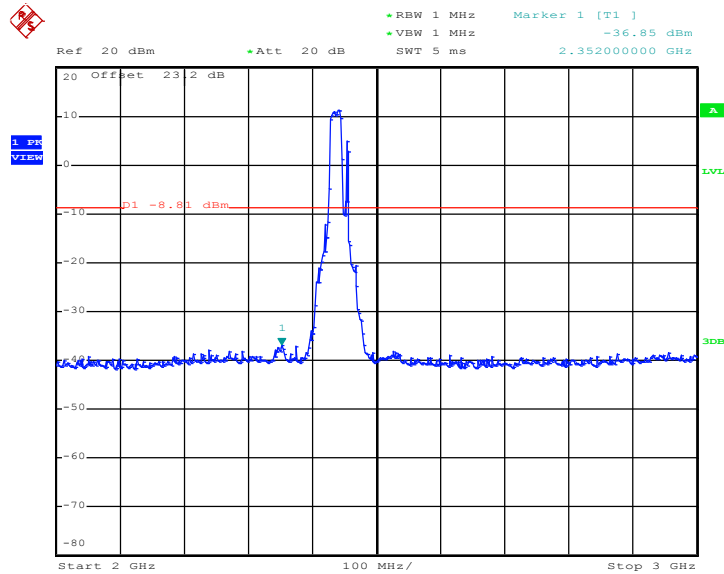
Test Mode :	Dipole Antenna Bluetooth 3DH1 (Ch52) + 802.11n (BW 20MHz) (Ch06)	Temperature :	24~26°C
Test Engineer :	Pinkston Tu	Relative Humidity :	50~53%

Conducted Spurious Emission Plot 30MHz ~ 2GHz



Date: 5.JUN.2012 01:34:11

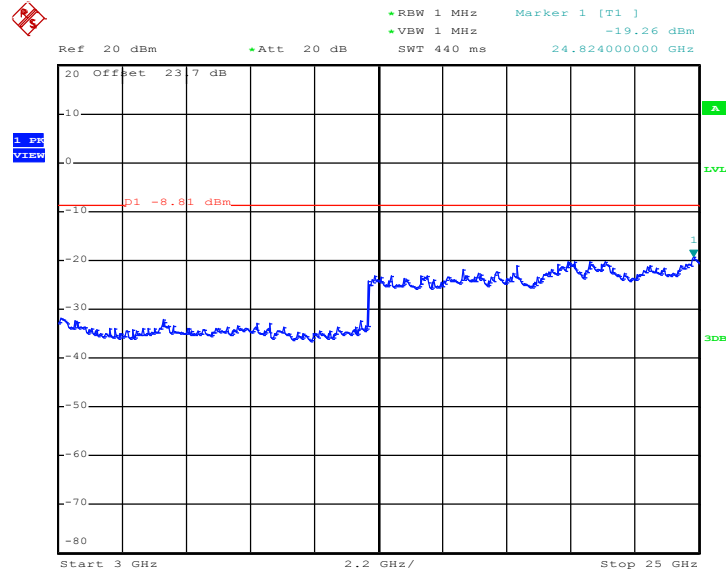
Conducted Spurious Emission Plot 2GHz ~ 3GHz



Date: 5.JUN.2012 00:04:54



Conducted Spurious Emission Plot 3GHz ~ 25GHz

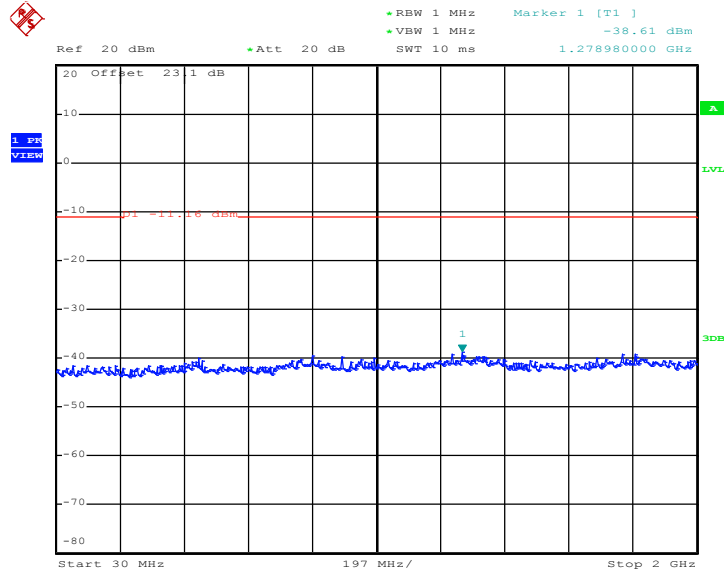


Date: 5.JUN.2012 01:29:36



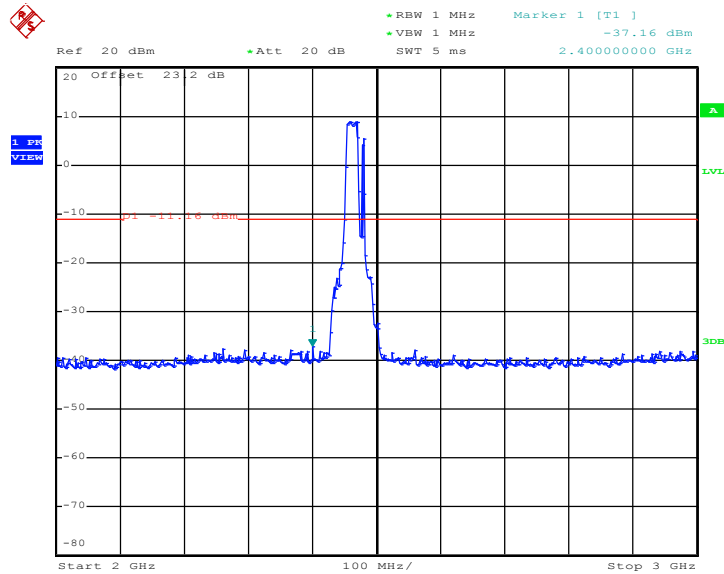
Test Mode :	Dipole Antenna Bluetooth 3DH1 (Ch77) + 802.11n (BW 20MHz) (Ch11)	Temperature :	24~26°C
Test Engineer :	Pinkston Tu	Relative Humidity :	50~53%

Conducted Spurious Emission Plot 30MHz ~ 2GHz



Date: 5.JUN.2012 01:35:49

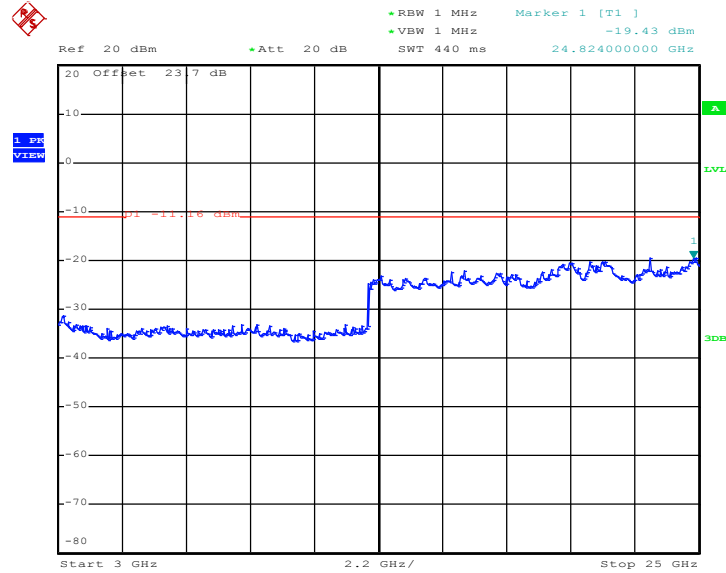
Conducted Spurious Emission Plot 2GHz ~ 3GHz



Date: 5.JUN.2012 00:02:11



Conducted Spurious Emission Plot 3GHz ~ 25GHz

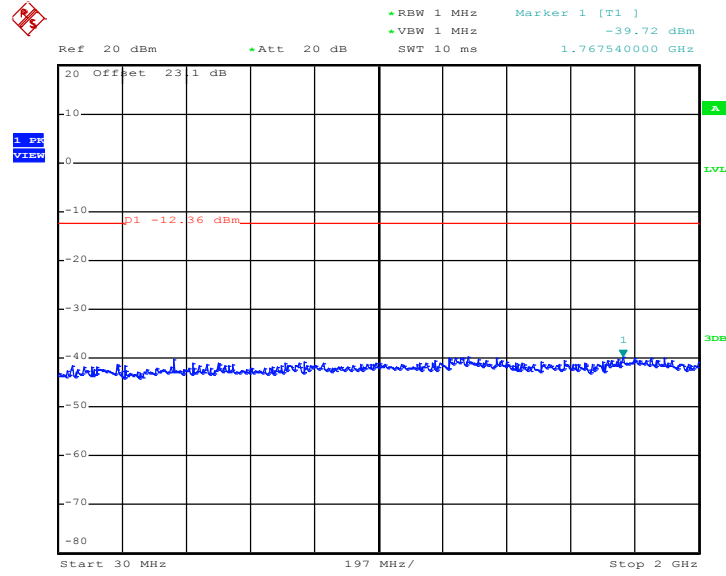


Date: 5.JUN.2012 01:36:53



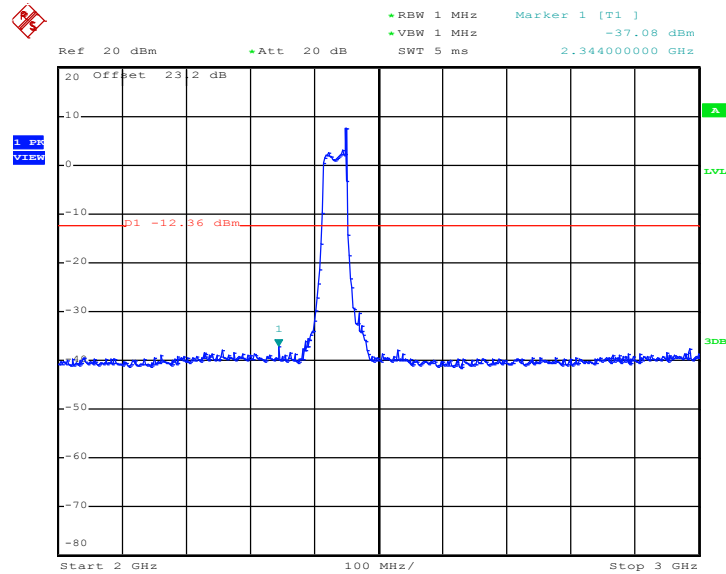
Test Mode :	Dipole Antenna Bluetooth 3DH1 (Ch47) + 802.11n (BW 40MHz) (Ch03)	Temperature :	24~26°C
Test Engineer :	Pinkston Tu	Relative Humidity :	50~53%

Conducted Spurious Emission Plot 30MHz ~ 2GHz



Date: 5.JUN.2012 01:42:10

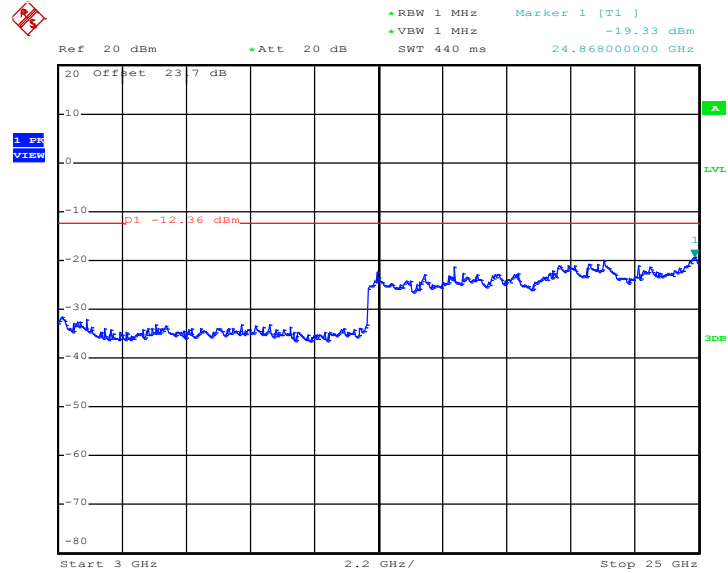
Conducted Spurious Emission Plot 2GHz ~ 3GHz



Date: 4.JUN.2012 23:59:22



Conducted Spurious Emission Plot 3GHz ~ 25GHz

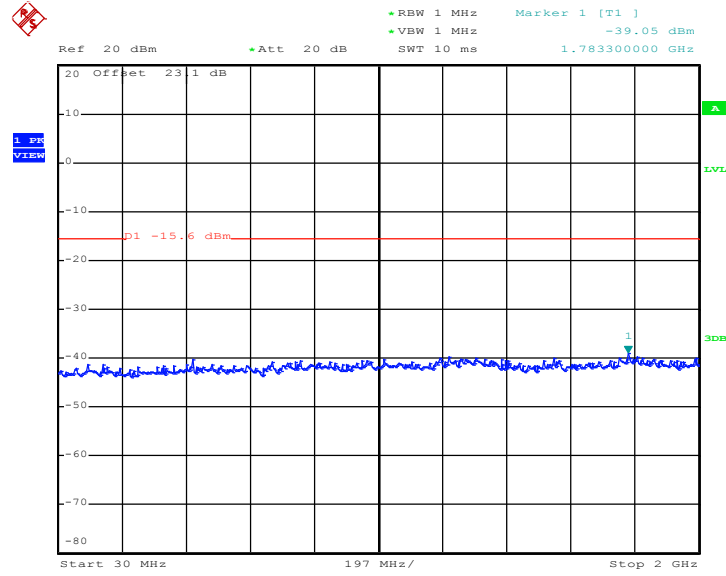


Date: 5.JUN.2012 01:39:21



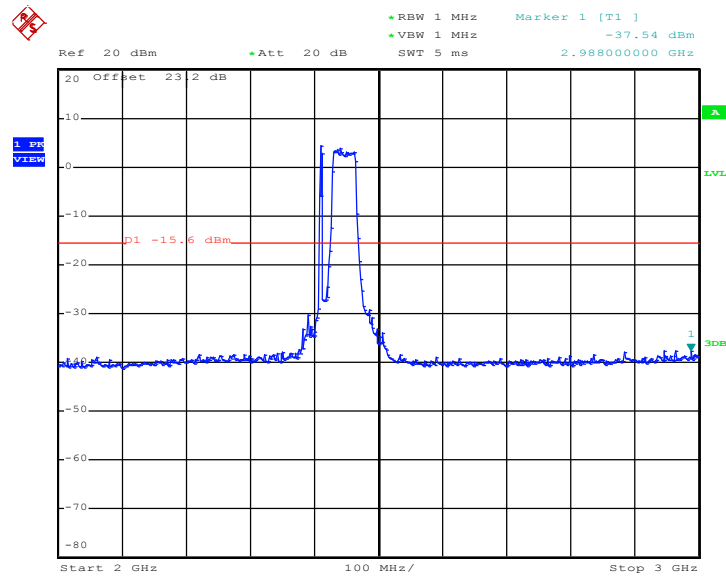
Test Mode :	Dipole Antenna Bluetooth 3DH1 (Ch08) + 802.11n (BW 40MHz) (Ch06)	Temperature :	24~26°C
Test Engineer :	Pinkston Tu	Relative Humidity :	50~53%

Conducted Spurious Emission Plot 30MHz ~ 2GHz



Date: 5.JUN.2012 01:43:28

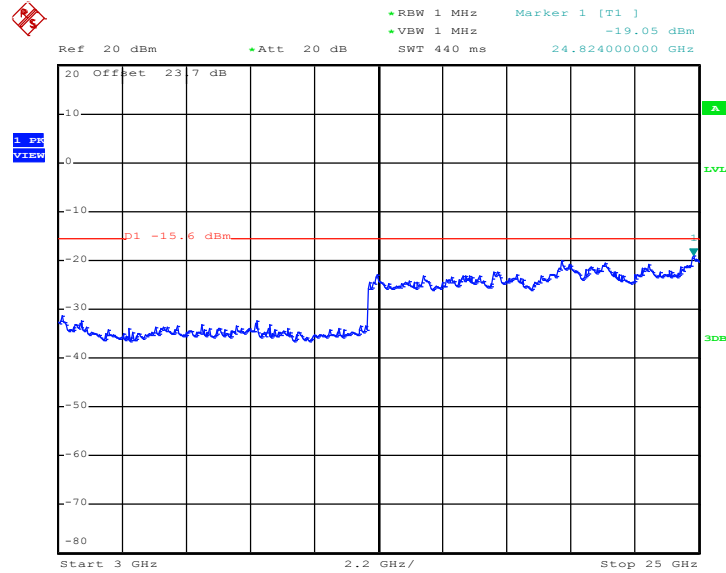
Conducted Spurious Emission Plot 2GHz ~ 3GHz



Date: 4.JUN.2012 23:49:27



Conducted Spurious Emission Plot 3GHz ~ 25GHz

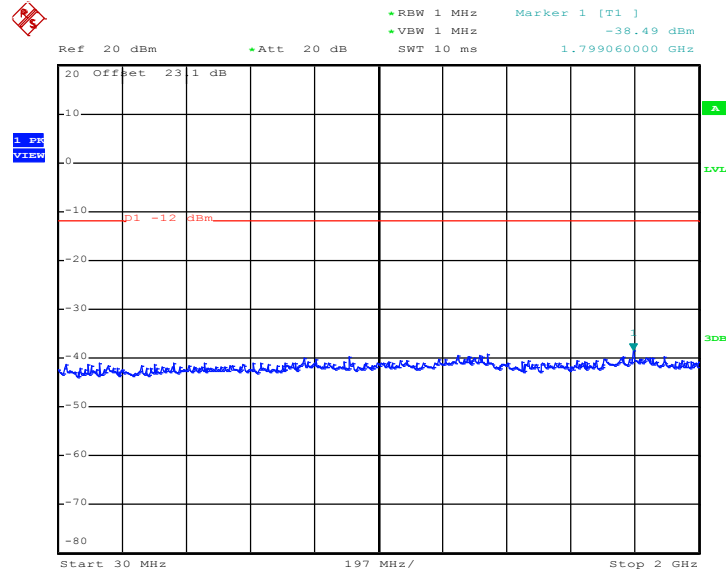


Date: 5.JUN.2012 01:44:21



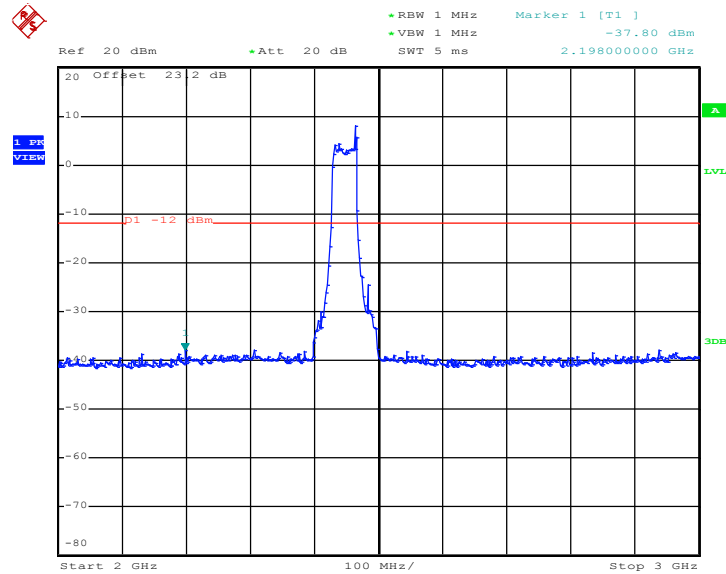
Test Mode :	Dipole Antenna Bluetooth 3DH1 (Ch62) + 802.11n (BW 40MHz) (Ch06)	Temperature :	24~26°C
Test Engineer :	Pinkston Tu	Relative Humidity :	50~53%

Conducted Spurious Emission Plot 30MHz ~ 2GHz



Date: 5.JUN.2012 01:46:11

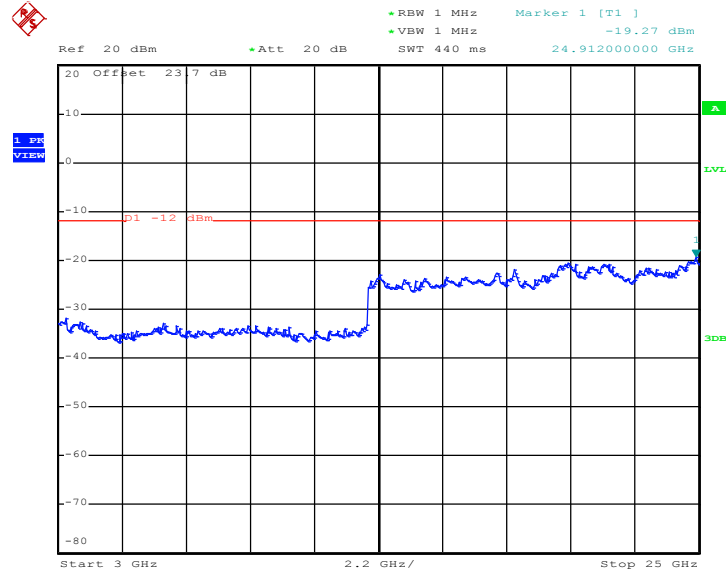
Conducted Spurious Emission Plot 2GHz ~ 3GHz



Date: 4.JUN.2012 23:46:18



Conducted Spurious Emission Plot 3GHz ~ 25GHz

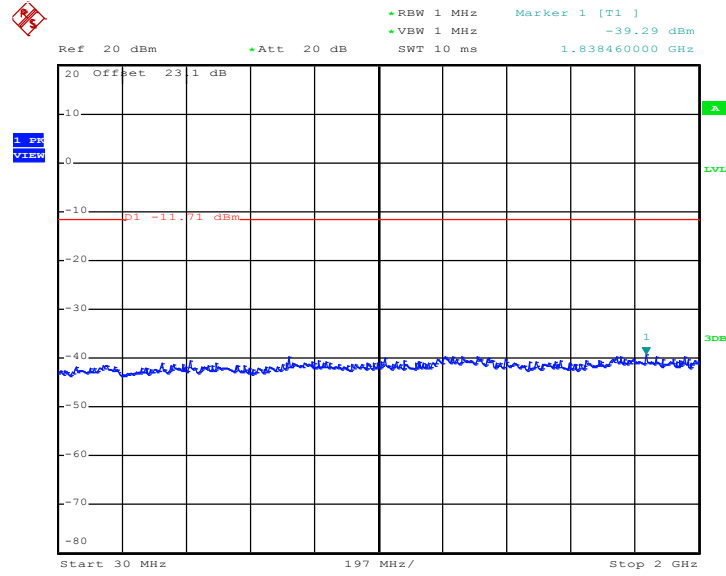


Date: 5.JUN.2012 01:45:24



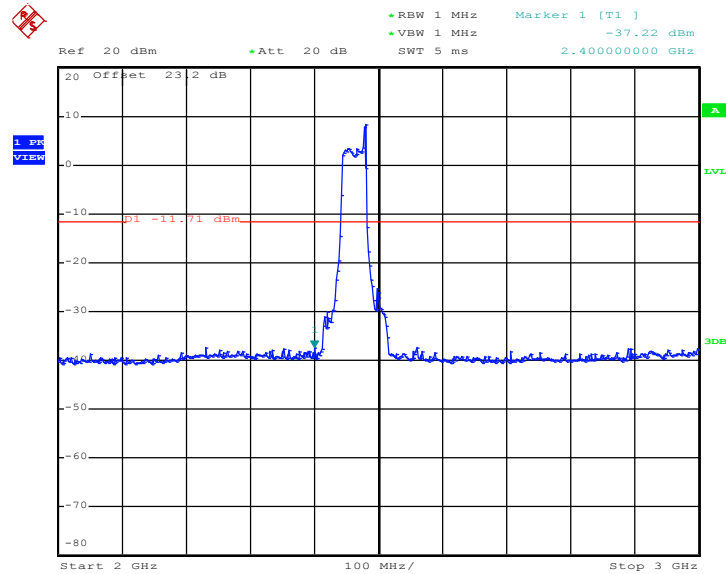
Test Mode :	Dipole Antenna Bluetooth 3DH1 (Ch77) + 802.11n (BW 40MHz) (Ch09)	Temperature :	24~26°C
Test Engineer :	Pinkston Tu	Relative Humidity :	50~53%

Conducted Spurious Emission Plot 30MHz ~ 2GHz



Date: 5.JUN.2012 01:47:35

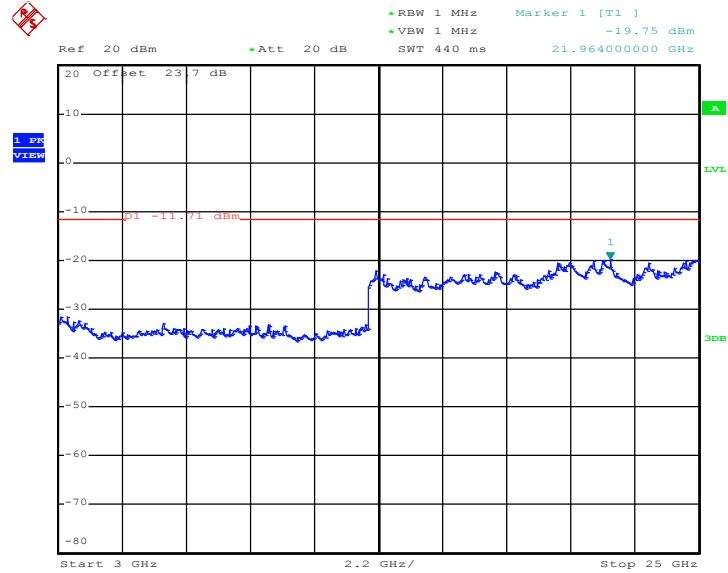
Conducted Spurious Emission Plot 2GHz ~ 3GHz



Date: 4.JUN.2012 23:57:08



Conducted Spurious Emission Plot 3GHz ~ 25GHz



Date: 5.JUN.2012 01:48:25



3.4 Antenna Requirements

3.4.1 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. For the fixed point-to-point operation, the power shall be reduced by one dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi. 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.

3.4.2 Antenna Connected Construction

The antennas type used in this product are Antenna 1 : PIFA Antenna with IPEX connector and Antenna 2 : Dipole Antenna with Reverse-SMA type RF connector. And it is considered to meet antenna requirement.

3.4.3 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

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSP40	100055	9kHz~40GHz	Jun. 13, 2011	Apr. 25, 2012 ~ Jun. 05, 2012	Jun. 12, 2012	Conducted (TH02-HY)
Power Meter	Anritsu	ML2495A	0932001	N/A	Sep. 18, 2011	Apr. 25, 2012 ~ Jun. 05, 2012	Sep. 17, 2012	Conducted (TH02-HY)
Spectrum Analyzer	R&S	ESU26	100390	20Hz ~ 26.5GHz	Dec. 22, 2011	May 29, 2012 ~ May 30, 2012	Dec. 21, 2012	Radiation (03CH05-HY)
Bilog Antenna	SCHAFFNER	CBL6111C	2725	30MHz ~ 2GHz	Oct. 22, 2011	May 29, 2012 ~ May 30, 2012	Oct. 21, 2012	Radiation (03CH05-HY)
Turn Table	HD	Deis HD 2000	420/611	0 ~ 360 degree	N/A	May 29, 2012 ~ May 30, 2012	N/A	Radiation (03CH05-HY)
Antenna Mast	HD	MA 240	240/666	1 m ~ 4 m	N/A	May 29, 2012 ~ May 30, 2012	N/A	Radiation (03CH05-HY)
Horn Antenna	ESCO	3117	66584	1GHz ~ 18GHz	Aug. 04, 2011	May 29, 2012 ~ May 30, 2012	Aug. 03, 2012	Radiation (03CH05-HY)
Pre Amplifier	COM-POWER	PA-103A	161075	10Hz ~ 1000MHz Gain:32dB	Feb. 27, 2012	May 29, 2012 ~ May 30, 2012	Feb. 26, 2013	Radiation (03CH05-HY)
Pre Amplifier	MITEQ	AMF-7D-00 101800-30-10P	159087	1GHz~18GHz	Feb. 27, 2012	May 29, 2012 ~ May 30, 2012	Feb. 26, 2013	Radiation (03CH05-HY)
Pre Amplifier	Agilent	8449B	3008A01917	1GHz~26.5GHz	Aug. 30, 2011	May 29, 2012 ~ May 30, 2012	Aug. 29, 2012	Radiation (03CH05-HY)

5 Uncertainty of Evaluation

Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Contribution	Uncertainty of X_i		$u(X_i)$
	dB	Probability Distribution	
Receiver Reading	0.41	Normal (k=2)	0.21
Antenna Factor Calibration	0.83	Normal (k=2)	0.42
Cable Loss Calibration	0.25	Normal (k=2)	0.13
Pre-Amplifier Gain Calibration	0.27	Normal (k=2)	0.14
RCV/SPA Specification	2.50	Rectangular	0.72
Antenna Factor Interpolation for Frequency	1.00	Rectangular	0.29
Site Imperfection	1.43	Rectangular	0.83
Mismatch	+0.39 / -0.41	U-Shape	0.28
Combined Standard Uncertainty $U_c(y)$	1.27		
Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_c(y)$)	2.54		

Uncertainty of Radiated Emission Measurement (1 GHz ~ 40 GHz)

Contribution	Uncertainty of X_i		$u(X_i)$	C_i	$C_i * u(X_i)$
	dB	Probability Distribution			
Receiver Reading	±0.10	Normal (k=2)	0.10	1	0.10
Antenna Factor Calibration	±1.70	Normal (k=2)	0.85	1	0.85
Cable Loss Calibration	±0.50	Normal (k=2)	0.25	1	0.25
Receiver Correction	±2.00	Rectangular	1.15	1	1.15
Antenna Factor Directional	±1.50	Rectangular	0.87	1	0.87
Site Imperfection	±2.80	Triangular	1.14	1	1.14
Mismatch Receiver VSWR $\Gamma_1 = 0.197$ Antenna VSWR $\Gamma_2 = 0.194$ Uncertainty = $20\text{Log}(1-\Gamma_1\Gamma_2)$	+0.34 / -0.35	U-Shape	0.244	1	0.244
Combined Standard Uncertainty $U_c(y)$	2.36				
Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_c(y)$)	4.72				



Appendix A. Photographs of EUT

Please refer to Sporton report number EP240322-06 as below.