



# FCC RF Test Report

APPLICANT : 4IPNET, INC.  
EQUIPMENT : Wireless Hotspot Gateway / Enterprise Access Point  
BRAND NAME : 4ipnet  
MODEL NAME : EAP260  
FCC ID : VZ9110003  
ENTERPRISE : BRAND NAME: 4IPNET  
ACCESS POINT MODEL NAME: EAP260  
ENTERPRISE : BRAND NAME: CIPHERIUM  
ACCESS POINT MODEL NAME: A260  
ENTERPRISE : BRAND NAME: USC  
ACCESS POINT MODEL NAME: A260  
WIRELESS HOTSPOT : BRAND NAME: 4IPNET  
GATEWAY MODEL NAME: HSG260  
WIRELESS HOTSPOT : BRAND NAME: CIPHERIUM  
GATEWAY MODEL NAME: W1161  
WIRELESS HOTSPOT : BRAND NAME: USC  
GATEWAY MODEL NAME: W1161  
STANDARD : FCC Part 15 Subpart C §15.247  
CLASSIFICATION : (DTS) Digital Transmission System

The product was received on Jun. 29, 2011 and completely tested on Nov. 10, 2011. 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 1<sup>st</sup> Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C.

SPORTON INTERNATIONAL INC.

TEL : 886-3-327-3456

FAX : 886-3-328-4978

FCC ID : VZ9110003

Page Number : 1 of 137

Report Issued Date : Apr. 26, 2012

Report Version : Rev. 02



# TABLE OF CONTENTS

**REVISION HISTORY ..... 3**

**SUMMARY OF TEST RESULT ..... 4**

**1 GENERAL DESCRIPTION ..... 5**

    1.1 Applicant ..... 5

    1.2 Manufacturer ..... 5

    1.3 Feature of Equipment Under Test ..... 6

    1.4 Testing Site ..... 7

    1.5 Applied Standards ..... 7

    1.6 Ancillary Equipment List ..... 7

**2 TEST CONFIGURATION OF EQUIPMENT UNDER TEST ..... 8**

    2.1 RF Power ..... 8

    2.2 Test Mode ..... 10

    2.3 Connection Diagram of Test System ..... 11

    2.4 RF Utility ..... 12

**3 TEST RESULT ..... 13**

    3.1 6dB Bandwidth Measurement ..... 13

    3.2 Output Power Measurement ..... 30

    3.3 Band Edges Measurement ..... 33

    3.4 Spurious Emission Measurement ..... 51

    3.5 Power Spectral Density Measurement ..... 76

    3.6 AC Conducted Emission Measurement ..... 93

    3.7 Radiated Emission Measurement ..... 97

    3.8 Antenna Requirements ..... 134

**4 LIST OF MEASURING EQUIPMENT ..... 135**

**5 UNCERTAINTY OF EVALUATION ..... 136**

**APPENDIX A. PHOTOGRAPHS OF EUT**

**APPENDIX B. SETUP PHOTOGRAPHS**



### REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR162914	Rev. 01	Initial issue of report	Apr. 25, 2012
FR162914	Rev. 02	Update report for revising equipment name	Apr. 26, 2012

**SUMMARY OF TEST RESULT**

Report Section	FCC Rule	IC Rule	Description	Limit	Result	Remark
3.1	15.247(a)(2)	A8.2(a)	6dB Bandwidth	$\geq 0.5\text{MHz}$	Pass	-
3.2	15.247(b)	A8.4	Power Output	$\leq 30\text{dBm}$	Pass	-
3.3	15.247(d)	A8.5	Frequency Band Edges	$\leq 20\text{dBc}$	Pass	-
3.4	15.247(d)	A8.5	Spurious Emission	$< 20\text{ dBc}$	Pass	-
3.5	15.247(e)	A8.2(b)	Power Spectral Density	$\leq 8\text{dBm}$	Pass	-
3.6	15.207	Gen 7.2.4	AC Conducted Emission	15.207(a)	Pass	Under limit 11.60 dB at 0.518 MHz
3.7	15.247(d)	A8.5	Transmitter Radiated Emission	15.209(a) & 15.247(d)	Pass	Under limit 1.30 dB at 2488.220 MHz
3.8	15.203 & 15.247(b)	A8.4	Antenna Requirement	N/A	Pass	-



# **1 General Description**

## **1.1 Applicant**

**4IPNET, INC.**

3F-3, No. 369, Fusing N. Rd., Taipei 105, Taiwan, R.O.C.

## **1.2 Manufacturer**

**4IPNET, INC.**

3F-3, No. 369, Fusing N. Rd., Taipei 105, Taiwan, R.O.C.

### 1.3 Feature of Equipment Under Test

Product Feature & Specification	
Equipment	Wireless Hotspot Gateway / Enterprise Access Point
Brand Name	4ipnet
Model Name	EAP260
FCC ID	VZ9110003
Integrated Module	Brand Name : Athores Model Name : AR9223
Tx/Rx Frequency Range	2400 MHz ~ 2483.5 MHz
Number of Channels	11
Carrier Frequency of Each Channel	2412+(n-1)*5 MHz; n=1~11
Channel Spacing	5 MHz
Maximum Output Power to Antenna	802.11b : 17.98 dBm (0.0628 W) 802.11g : 25.27 dBm (0.3365 W) 802.11n (BW 20MHz) : 19.18 dBm (0.0828 W) 802.11n (BW 40MHz) : 20.41 dBm (0.1099 W)
Antenna Type	Dipole Antenna with gain 5.00 dBi
Type of Modulation	802.11b : DSSS (BPSK / QPSK / CCK) 802.11g/n : OFDM (BPSK / QPSK / 16QAM / 64QAM)
EUT Stage	Production Unit

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

Brand	Model Name	Product Description
4ipnet	EAP260	Enterprise Access Point
Cipherium	A260	Enterprise Access Point
USC	A260	Enterprise Access Point
4ipnet	HSG260	Wireless Hotspot Gateway
Cipherium	W1161	Wireless Hotspot Gateway
USC	W1161	Wireless Hotspot Gateway

## 1.4 Testing Site

<b>Test Site</b>	SPORTON INTERNATIONAL INC.		
<b>Test Site Location</b>	No. 52, Hwa Ya 1 <sup>st</sup> Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL: +886-3-3273456 / FAX: +886-3-3284978		
<b>Test Site No.</b>	<b>Sporton Site No.</b>		<b>FCC/IC Registration No.</b>
	CO05-HY	03CH05-HY	722060/4086B-1

## 1.5 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 (Measurement Guidelines of DTS)
- ♦ 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.

## 1.6 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	P20G	FCC DoC	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
3.	USB Dongle	Apacer	AH220	N/A	N/A	N/A
4.	USB Dongle	Kingston	DT100G2	FCC DoC	N/A	N/A

## 2 Test Configuration of Equipment Under Test

### 2.1 RF Power

Preliminary tests were performed in different data rate and recorded the RF power output in the following table:

Band	2.4GHz 802.11b RF Power (dBm)					
Chain	A			B		
Channel	1	6	11	1	6	11
Frequency (MHz)	2412	2437	2462	2412	2437	2462
Peak Power	17.10	16.67	16.90	17.50	16.93	17.02

Band	2.4GHz 802.11b RF Power (dBm)								
Chain	A+B(A)			A+B(B)			A+B		
Channel	1	6	11	1	6	11	1	6	11
Frequency (MHz)	2412	2437	2462	2412	2437	2462	2412	2437	2462
Peak Power	14.83	14.36	14.39	15.11	14.75	14.82	17.98	17.57	17.62

Band	2.4GHz 802.11g RF Power (dBm)					
Chain	A			B		
Channel	1	6	11	1	6	11
Frequency (MHz)	2412	2437	2462	2412	2437	2462
Peak Power	24.47	23.44	23.68	25.22	25.05	25.19

Band	2.4GHz 802.11g RF Power (dBm)								
Chain	A+B(A)			A+B(B)			A+B		
Channel	1	6	11	1	6	11	1	6	11
Frequency (MHz)	2412	2437	2462	2412	2437	2462	2412	2437	2462
Peak Power	22.01	21.31	21.43	22.49	22.06	22.08	25.27	24.71	24.78





Band	2.4GHz 802.11n (BW 20MHz) RF Power (dBm)					
Chain	A			B		
Channel	1	6	11	1	6	11
Frequency (MHz)	2412	2437	2462	2412	2437	2462
Peak Power	18.25	18.42	18.19	18.08	18.39	18.54

Band	2.4GHz 802.11n (BW 20MHz) RF Power (dBm)								
Chain	A+B(A)			A+B(B)			A+B		
Channel	1	6	11	1	6	11	1	6	11
Frequency (MHz)	2412	2437	2462	2412	2437	2462	2412	2437	2462
Peak Power	16.07	16.03	16.04	16.14	16.10	16.29	19.12	19.08	19.18

Band	2.4GHz 802.11n (BW 40MHz) RF Power (dBm)					
Chain	A			B		
Channel	3	6	9	3	6	9
Frequency (MHz)	2422	2437	2452	2422	2437	2452
Peak Power	19.73	19.86	19.82	19.85	19.88	20.39

Band	2.4GHz 802.11n (BW 40MHz) RF Power (dBm)								
Chain	A+B(A)			A+B(B)			A+B		
Channel	3	6	9	3	6	9	3	6	9
Frequency (MHz)	2422	2437	2452	2422	2437	2452	2422	2437	2452
Peak Power	16.82	17.23	17.15	16.65	17.07	17.63	19.75	20.16	20.41

**Remark:**

1. All the test data for each data rate were verified, but only the worst case was reported.
2. 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), and 13.5Mbps for 802.11n (BW 40MHz) for all the test cases due to the highest RF output power.
3. The EUT is programmed to transmit signals continuously for all testing.



## 2.2 Test Mode

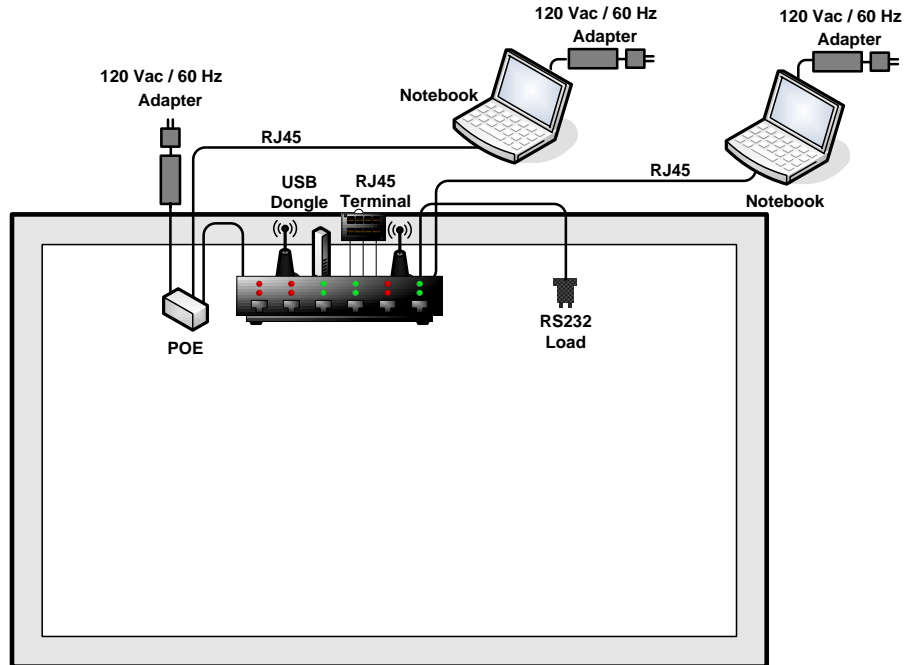
The EUT has been associated with peripherals pursuant to ANSI C63.4-2003 and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: conducted emission (150 KHz to 30 MHz), radiated emission (30 MHz to the 10th harmonic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

Pre-scanned tests were conducted to determine the final configuration from all possible combinations.

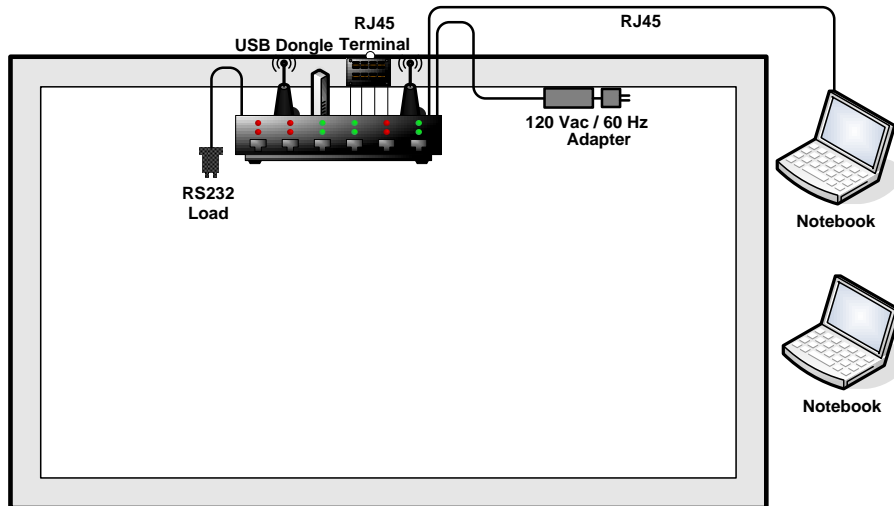
Test Cases		
Test Item	802.11b (Modulation : DSSS)	802.11g/n (Modulation : OFDM)
Conducted TCs	Mode 1 : 802.11b CH01_2412 MHz Mode 2 : 802.11b CH06_2437 MHz Mode 3 : 802.11b CH11_2462 MHz	Mode 4: 802.11g_CH01_2412 MHz Mode 5: 802.11g_CH06_2437 MHz Mode 6: 802.11g_CH11_2462 MHz Mode 7: 802.11n (BW 20M)_CH01_2412 MHz Mode 8: 802.11n (BW 20M)_CH06_2437 MHz Mode 9: 802.11n (BW 20M)_CH11_2462 MHz Mode 10: 802.11n (BW 40M)_CH03_2422 MHz Mode 11: 802.11n (BW 40M)_CH06_2437 MHz Mode 12: 802.11n (BW 40M)_CH09_2452 MHz
Radiated TCs	Mode 1 : 802.11b CH01_2412 MHz (Chain A+B) Mode 2 : 802.11b CH06_2437 MHz (Chain A+B) Mode 3 : 802.11b CH11_2462 MHz (Chain A+B) Mode 4 : 802.11b CH11_2462 MHz (Chain A) Mode 5 : 802.11b CH11_2462 MHz (Chain B)	Mode 6: 802.11g_CH01_2412 MHz (Chain A+B) Mode 7: 802.11g_CH06_2437 MHz (Chain A+B) Mode 8: 802.11g_CH11_2462 MHz (Chain A+B) Mode 9: 802.11g_CH11_2462 MHz (Chain A) Mode 10: 802.11g_CH11_2462 MHz (Chain B) Mode 11: 802.11n (BW 20M)_CH01_2412 MHz (Chain A+B) Mode 12: 802.11n (BW 20M)_CH06_2437 MHz (Chain A+B) Mode 13: 802.11n (BW 20M)_CH11_2462 MHz (Chain A+B) Mode 14: 802.11n (BW 20M)_CH11_2462 MHz (Chain A) Mode 15: 802.11n (BW 20M)_CH11_2462 MHz (Chain B) Mode 16: 802.11n (BW 40M)_CH03_2422 MHz (Chain A+B) Mode 17: 802.11n (BW 40M)_CH06_2437 MHz (Chain A+B) Mode 18: 802.11n (BW 40M)_CH09_2452 MHz (Chain A+B) Mode 19: 802.11n (BW 40M)_CH09_2452 MHz (Chain A) Mode 20: 802.11n (BW 40M)_CH09_2452 MHz (Chain B)
AC Conducted Emission	Mode 1 : WLAN Link + LAN Link + USB Dongle + RS232 Load + Adapter 1	

## 2.3 Connection Diagram of Test System

<WLAN Tx Mode>



<AC Conducted Emission Mode>





## **2.4 RF Utility**

The programmed RF utility “art” is installed in EUT 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 6dB Bandwidth Measurement

##### 3.1.1 Limit of 6dB Bandwidth

The minimum 6 dB bandwidth shall be at least 500 KHz.

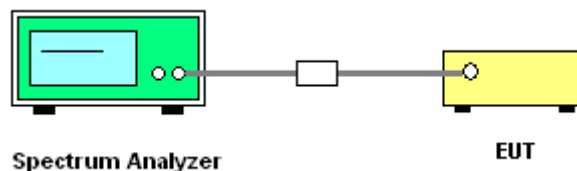
##### 3.1.2 Measuring Instruments

See list of measuring instruments of this test report.

##### 3.1.3 Test Procedures

1. The testing follows FCC KDB Publication No. 558074 (Measurement Guidelines of DTS).
2. The RF output of EUT was connected to the spectrum analyzer by a low loss cable.
3. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 100 KHz.  
In order to make an accurate measurement, set the span greater than RBW. The 6 dB bandwidth must be greater than 500 KHz.
4. The marker-delta reading at this point is the 6 dB bandwidth of the emission.

##### 3.1.4 Test Setup



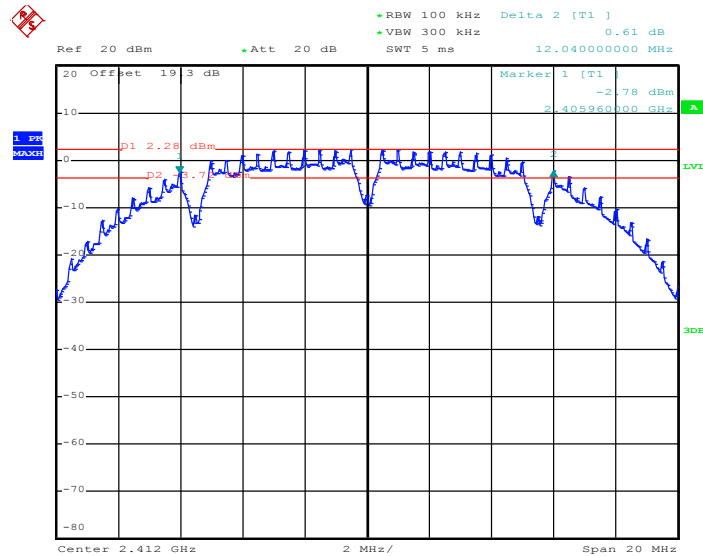


3.1.5 Test Result of 6dB Bandwidth

Test Mode :	Mode 1, 2, 3	Temperature :	25~27°C
Test Engineer :	Hank Yu	Relative Humidity :	55~57%

Channel	Frequency (MHz)	802.11b 6dB Bandwidth (MHz)		6dB Bandwidth Min. Limit (MHz)	Pass/Fail
		Chain A	Chain B		
01	2412	12.04	12.04	0.5	Pass
06	2437	12.04	12.54	0.5	Pass
11	2462	12.02	12.08	0.5	Pass

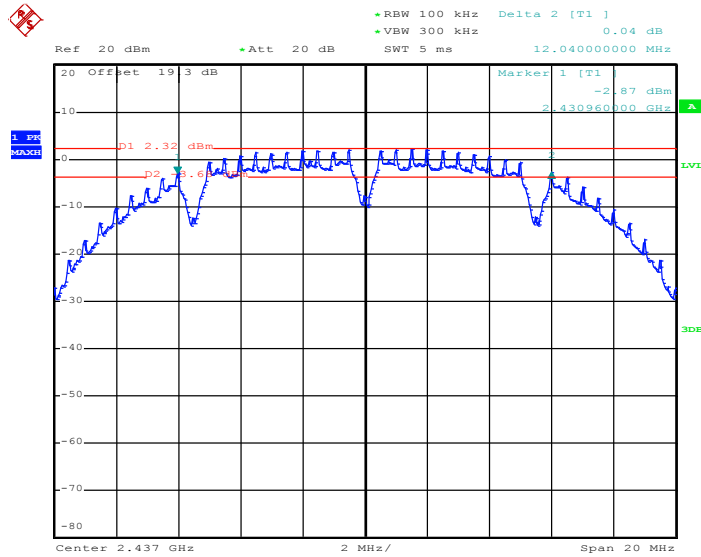
6 dB Bandwidth Plot on 802.11b Channel 01 – Chain A



Date: 9.NOV.2011 13:39:12

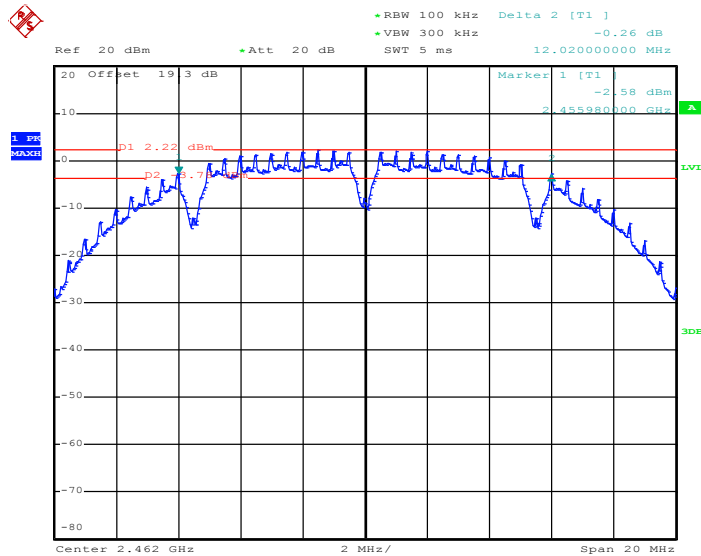


6 dB Bandwidth Plot on 802.11b Channel 06 – Chain A



Date: 9.NOV.2011 13:43:02

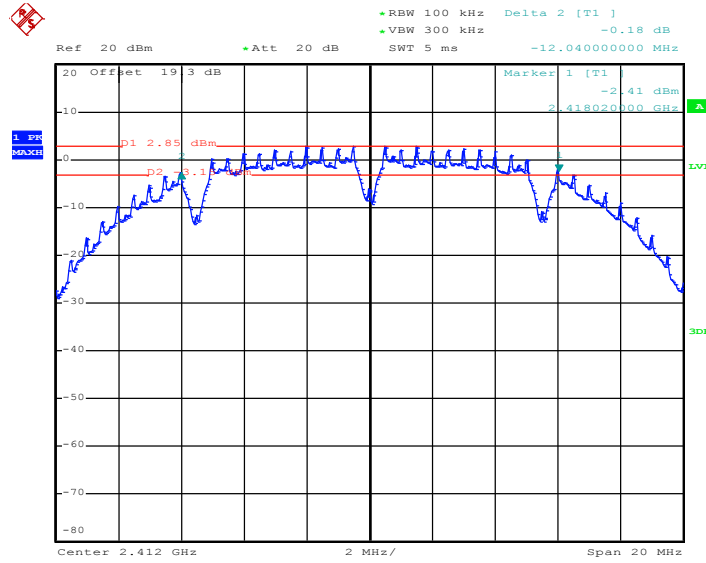
6 dB Bandwidth Plot on 802.11b Channel 11 – Chain A



Date: 9.NOV.2011 13:37:00

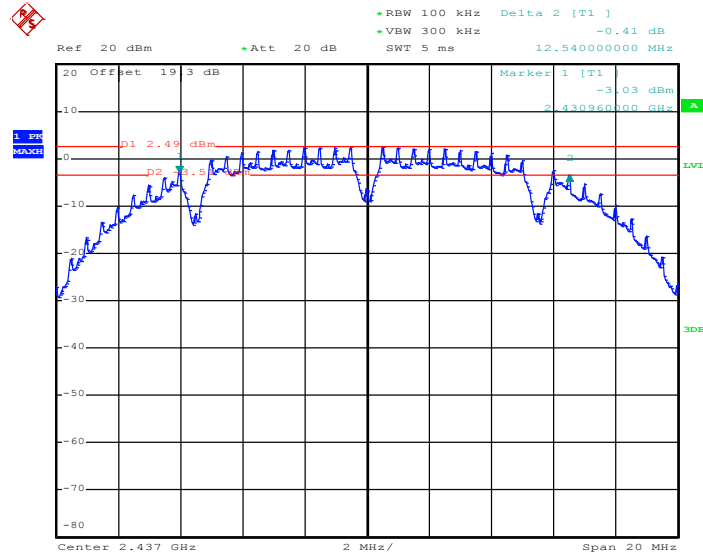


6 dB Bandwidth Plot on 802.11b Channel 01 – Chain B



Date: 9.NOV.2011 13:27:41

6 dB Bandwidth Plot on 802.11b Channel 06 – Chain B

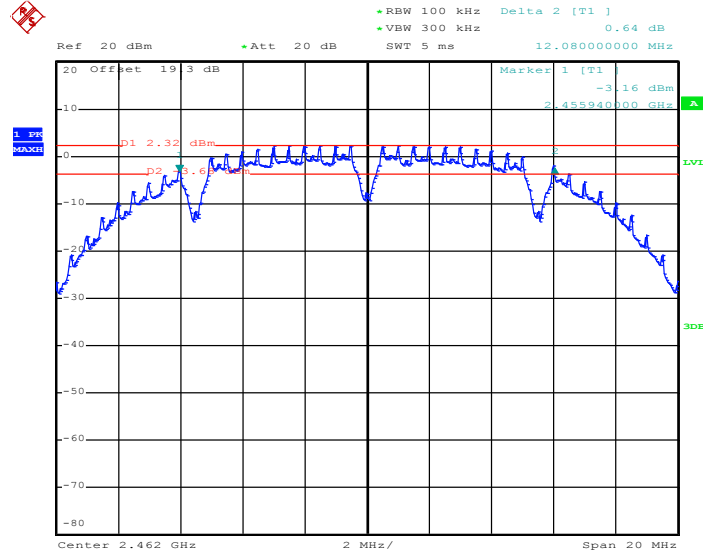


Date: 9.NOV.2011 13:31:42





6 dB Bandwidth Plot on 802.11b Channel 11 – Chain B



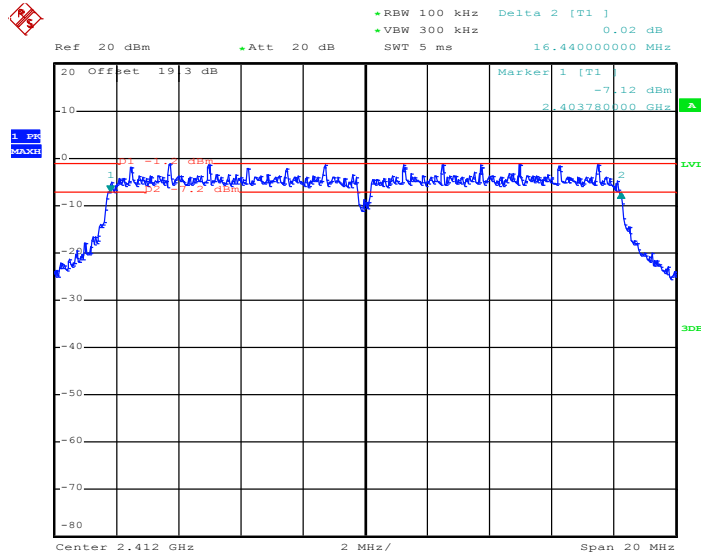
Date: 9.NOV.2011 13:33:27



Test Mode :	Mode 4, 5, 6	Temperature :	25~27°C
Test Engineer :	Hank Yu	Relative Humidity :	55~57%

Channel	Frequency (MHz)	802.11g 6dB Bandwidth (MHz)		6dB Bandwidth Min. Limit (MHz)	Pass/Fail
		Chain A	Chain B		
01	2412	16.44	16.32	0.5	Pass
06	2437	16.36	16.36	0.5	Pass
11	2462	16.36	16.36	0.5	Pass

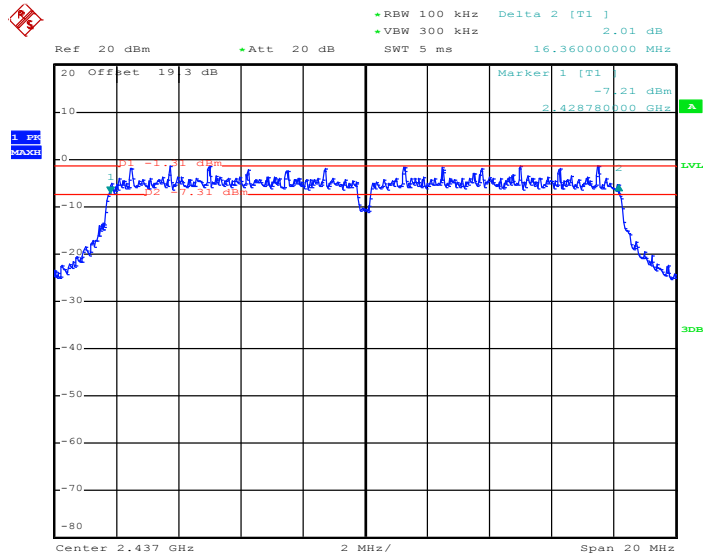
6 dB Bandwidth Plot on 802.11g Channel 01 – Chain A



Date: 9.NOV.2011 13:52:35

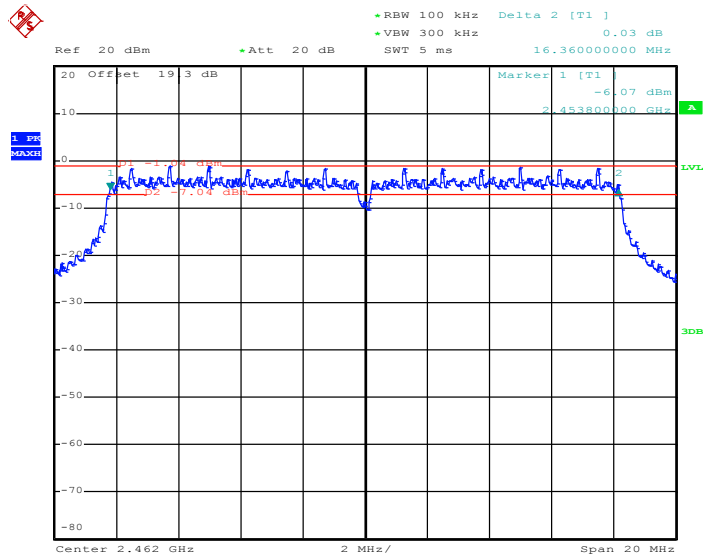


6 dB Bandwidth Plot on 802.11g Channel 06 – Chain A



Date: 9.NOV.2011 13:56:16

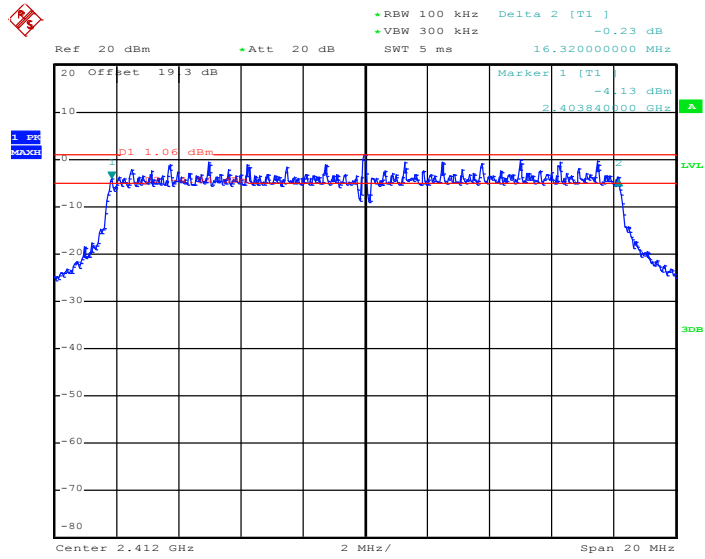
6 dB Bandwidth Plot on 802.11g Channel 11 – Chain A



Date: 9.NOV.2011 13:49:42

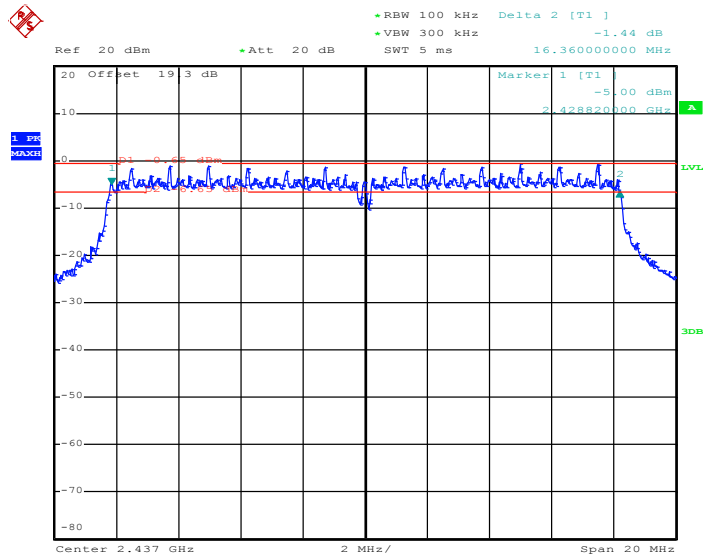


6 dB Bandwidth Plot on 802.11g Channel 01 – Chain B



Date: 9.NOV.2011 14:04:46

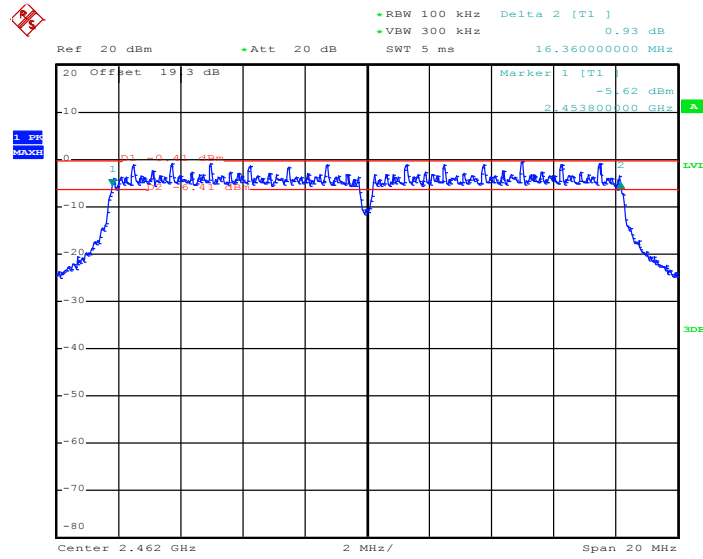
6 dB Bandwidth Plot on 802.11g Channel 06 – Chain B



Date: 9.NOV.2011 13:58:23



6 dB Bandwidth Plot on 802.11g Channel 11 – Chain B



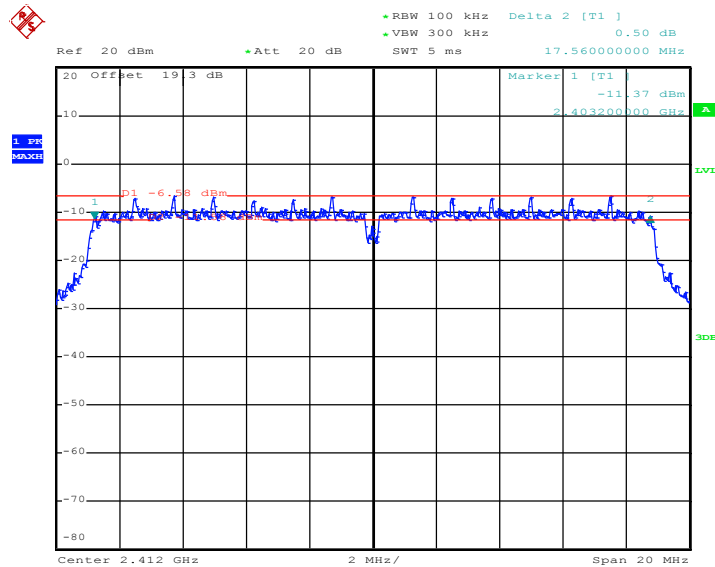
Date: 9.NOV.2011 14:00:45



Test Mode :	Mode 7, 8, 9	Temperature :	25~27°C
Test Engineer :	Hank Yu	Relative Humidity :	55~57%

Channel	Frequency (MHz)	802.11n (BW 20MHz) 6dB Bandwidth (MHz)		6dB Bandwidth Min. Limit (MHz)	Pass/Fail
		Chain A	Chain B		
01	2412	17.56	17.60	0.5	Pass
06	2437	17.52	17.60	0.5	Pass
11	2462	17.56	17.60	0.5	Pass

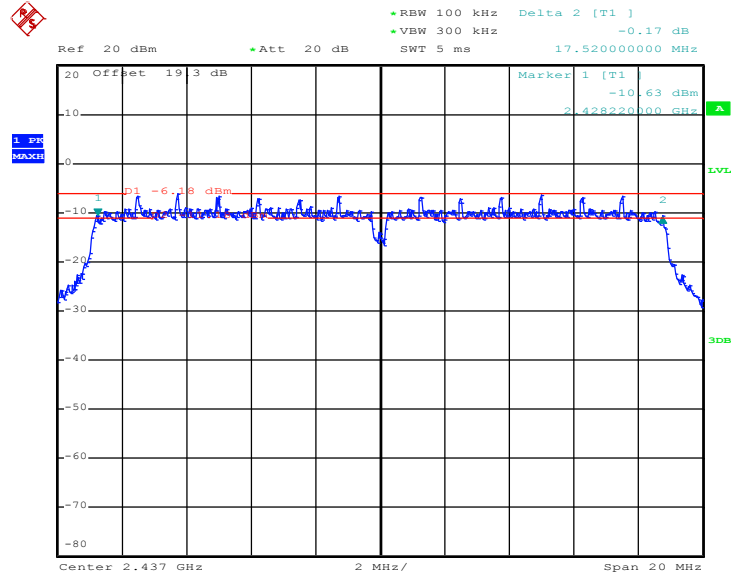
6 dB Bandwidth Plot on 802.11n(BW 20MHz) Channel 01 - Chain A



Date: 9.NOV.2011 11:55:40

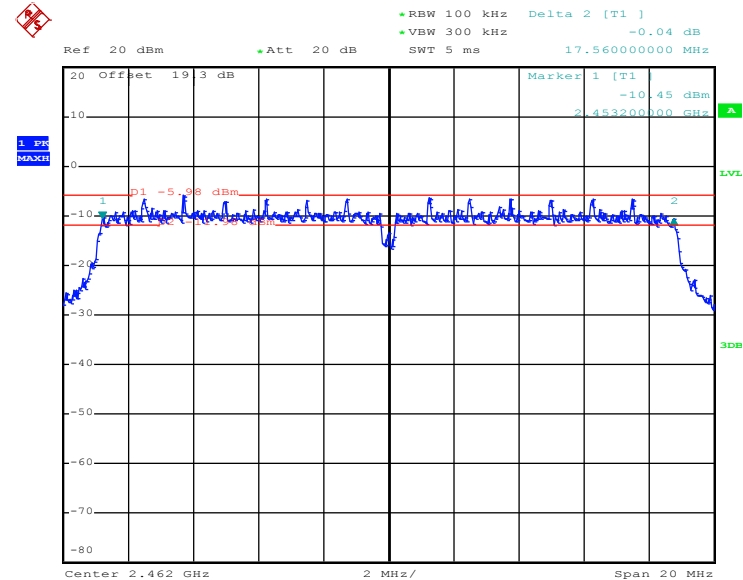


6 dB Bandwidth Plot on 802.11n(BW 20MHz) Channel 06 - Chain A



Date: 9.NOV.2011 11:53:26

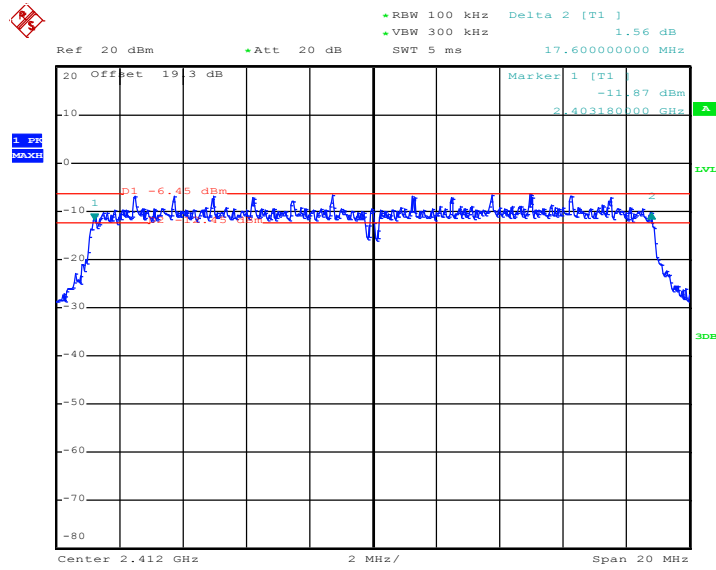
6 dB Bandwidth Plot on 802.11n(BW 20MHz) Channel 11 - Chain A



Date: 9.NOV.2011 11:58:55

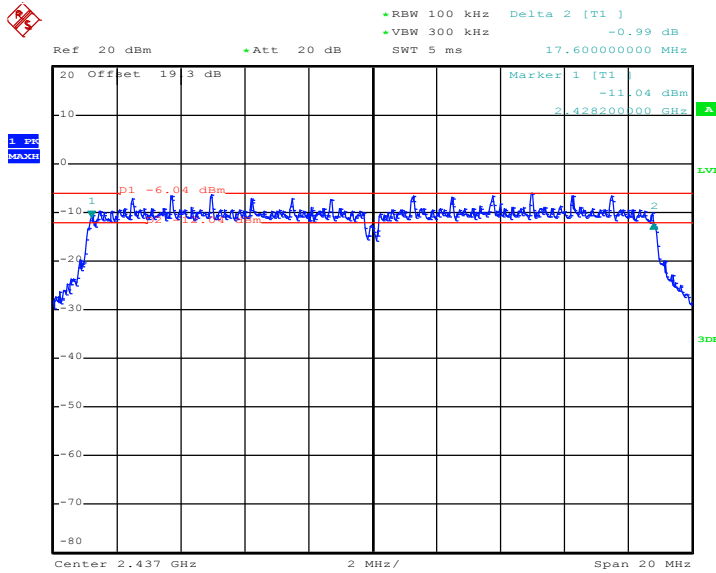


6 dB Bandwidth Plot on 802.11n(BW 20MHz) Channel 01 - Chain B



Date: 9.NOV.2011 12:27:37

6 dB Bandwidth Plot on 802.11n(BW 20MHz) Channel 06 - Chain B

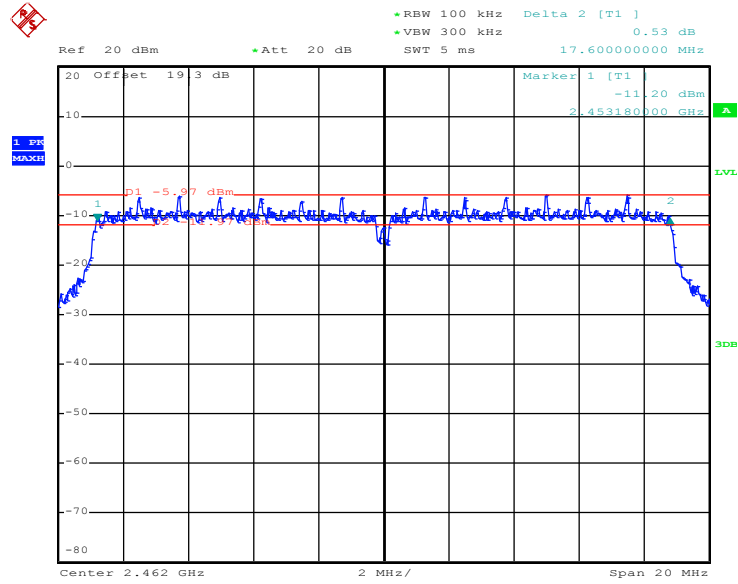


Date: 9.NOV.2011 12:22:56





6 dB Bandwidth Plot on 802.11n(BW 20MHz) Channel 11 - Chain B



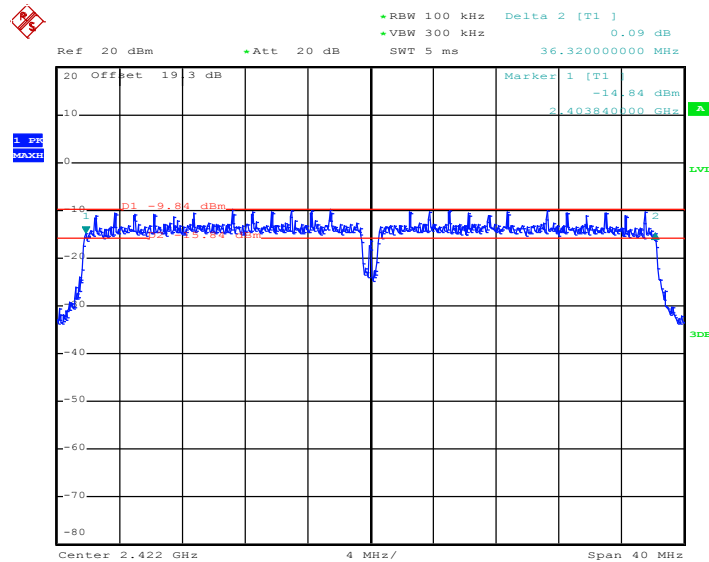
Date: 9.NOV.2011 12:25:47



Test Mode :	Mode 10, 11, 12	Temperature :	25~27°C
Test Engineer :	Hank Yu	Relative Humidity :	55~57%

Channel	Frequency (MHz)	802.11n (BW 40MHz) 6dB Bandwidth (MHz)		6dB Bandwidth Min. Limit (MHz)	Pass/Fail
		Chain A	Chain B		
03	2422	36.32	36.32	0.5	Pass
06	2437	36.32	36.32	0.5	Pass
09	2452	36.32	36.32	0.5	Pass

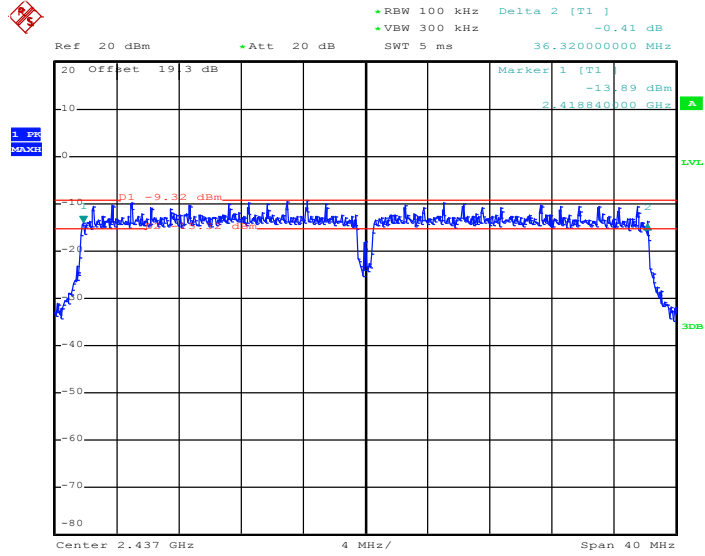
6 dB Bandwidth Plot on 802.11n(BW 40MHz) Channel 03 – Chain A



Date: 9.NOV.2011 11:43:38

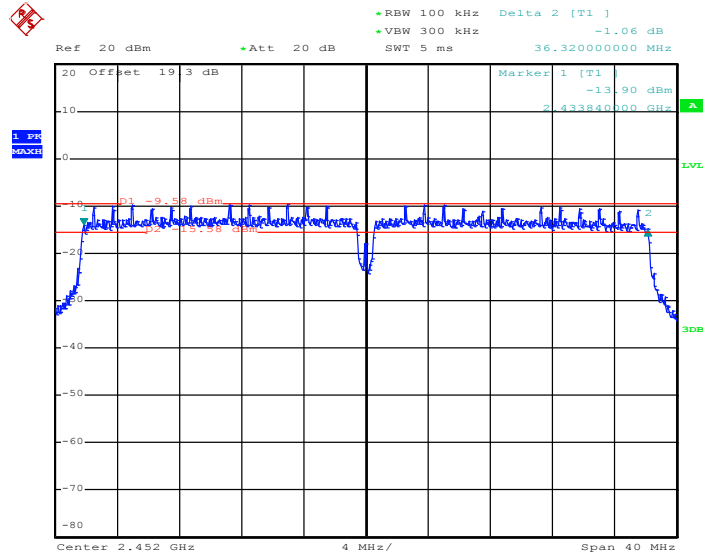


6 dB Bandwidth Plot on 802.11n(BW 40MHz) Channel 06 – Chain A



Date: 9.NOV.2011 11:49:13

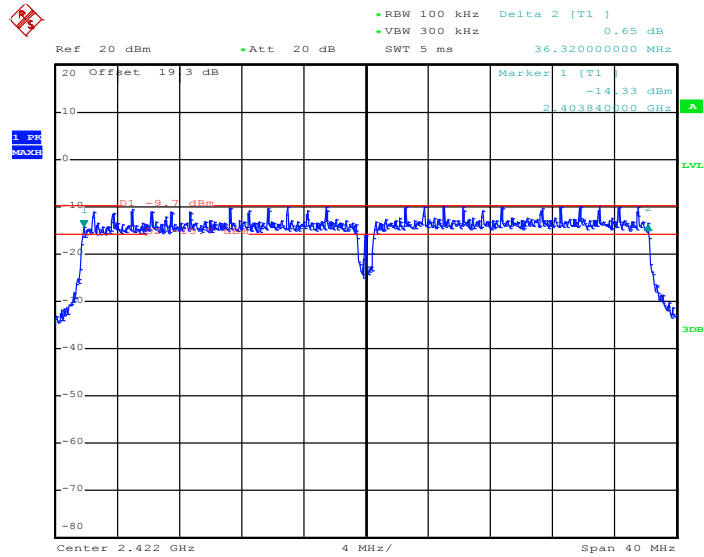
6 dB Bandwidth Plot on 802.11n(BW 40MHz) Channel 09 – Chain A



Date: 9.NOV.2011 11:47:06

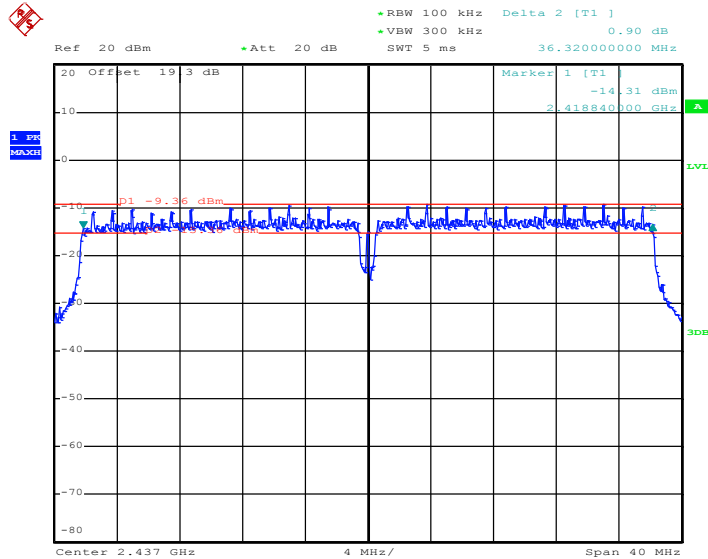


6 dB Bandwidth Plot on 802.11n(BW 40MHz) Channel 03 – Chain B



Date: 9.NOV.2011 11:37:31

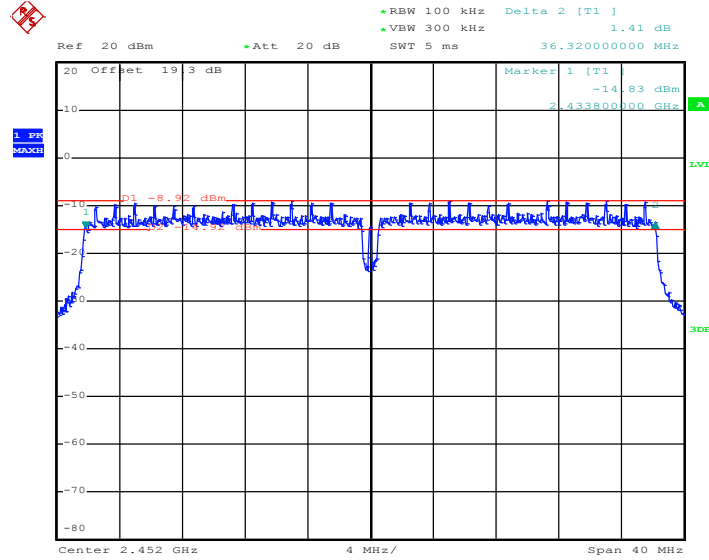
6 dB Bandwidth Plot on 802.11n(BW 40MHz) Channel 06 – Chain B



Date: 9.NOV.2011 11:35:45



6 dB Bandwidth Plot on 802.11n(BW 40MHz) Channel 09 – Chain B



Date: 9.NOV.2011 11:29:51

## 3.2 Output Power Measurement

### 3.2.1 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.

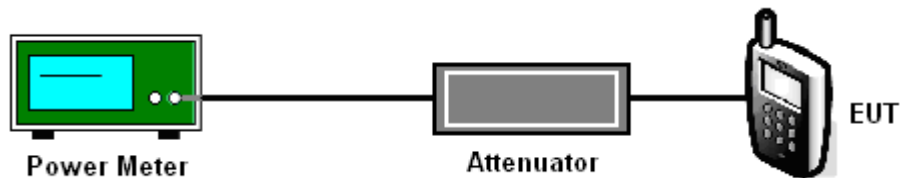
### 3.2.2 Measuring Instruments

See list of measuring instruments of this test report.

### 3.2.3 Test Procedures

1. The testing follows FCC KDB Publication No. 558074 (Measurement Guidelines of DTS).
2. The RF output of EUT was connected to the power meter by a low loss cable.
3. Measure the power by power meter.

### 3.2.4 Test Setup





3.2.5 Test Result of Output Power

Test Mode :	Mode 1, 2, 3	Temperature :	25~27°C
Test Engineer :	Hank Yu	Relative Humidity :	55~57%

Channel	Frequency (MHz)	802.11b Measured Output Power (dBm)			Max. Limits (dBm)	Pass/Fail
		Chain A+B(A)	Chain A+B(B)	Total Power		
01	2412	14.83	15.11	17.98	30	Pass
06	2437	14.36	14.75	17.57	30	Pass
11	2462	14.39	14.82	17.62	30	Pass

Test Mode :	Mode 4, 5, 6	Temperature :	25~27°C
Test Engineer :	Hank Yu	Relative Humidity :	55~57%

Channel	Frequency (MHz)	802.11g Measured Output Power (dBm)			Max. Limits (dBm)	Pass/Fail
		Chain A+B(A)	Chain A+B(B)	Total Power		
01	2412	22.01	22.49	25.27	30	Pass
06	2437	21.31	22.06	24.71	30	Pass
11	2462	21.43	22.08	24.78	30	Pass

Test Mode :	Mode 7, 8, 9	Temperature :	25~27°C
Test Engineer :	Hank Yu	Relative Humidity :	55~57%

Channel	Frequency (MHz)	802.11n (BW 20MHz) Measured Output Power (dBm)			Max. Limits (dBm)	Pass/Fail
		Chain A+B(A)	Chain A+B(B)	Total Power		
01	2412	16.07	16.14	19.12	30	Pass
06	2437	16.03	16.10	19.08	30	Pass
11	2462	16.04	16.29	19.18	30	Pass



Test Mode :	Mode 10, 11, 12	Temperature :	25~27
Test Engineer :	Hank Yu	Relative Humidity :	55~57

Channel	Frequency (MHz)	802.11n (BW 40MHz) Measured Output Power (dBm)			Max. Limits (dBm)	Pass/Fail
		Chain A+B(A)	Chain A+B(B)	Total Power		
03	2422	16.82	16.65	19.75	30	Pass
06	2437	17.23	17.07	20.16	30	Pass
09	2452	17.15	17.63	20.41	30	Pass



### 3.3 Band Edges Measurement

#### 3.3.1 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.

#### 3.3.2 Measuring Instruments

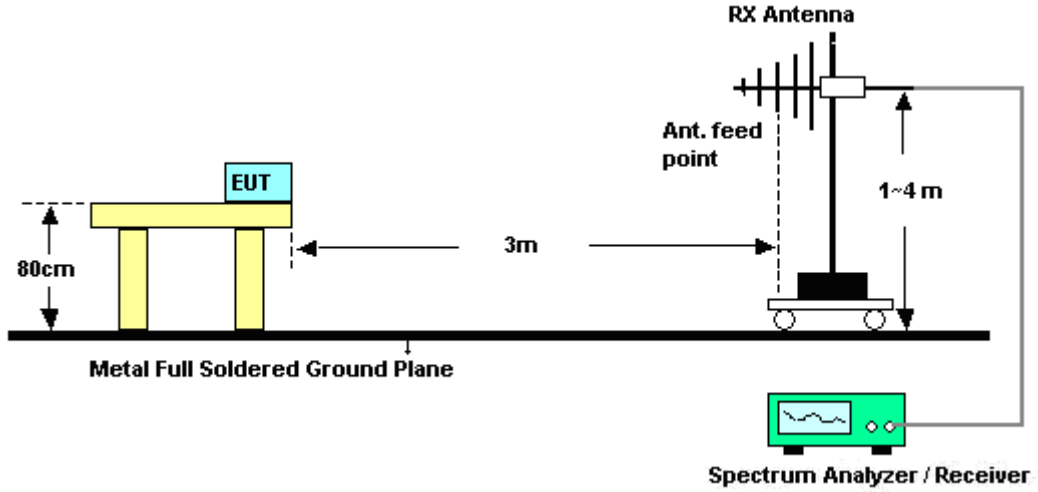
See list of measuring instruments of this test report.

#### 3.3.3 Test Procedures

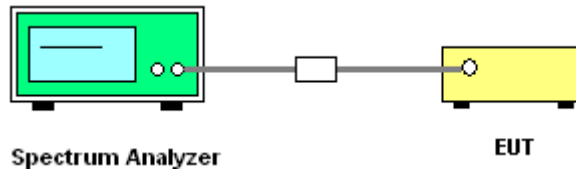
1. The testing follows the guidelines in ANSI C63.4-2003 and FCC KDB Publication No. 558074 (Measurement Guidelines of DTS).
2. Conducted emission test: Set RBW = 100 KHz, Video bandwidth (VBW)  $\geq$  RBW. Band edge emissions must be at least 20 dB down from the highest emission level within the authorized band as measured with a 100 KHz RBW. Note: If the device complies with the use of power option 2 the attenuation under this paragraph shall be 30 dB instead of 20 dB.
3. Radiated emission test: Apply to band edge emissions that fall in the restricted bands listed in FCC Section 15.205. The maximum permitted average field strength is listed in FCC Section 15.209. A pre-amp is necessary for this measurement. For measurements above 1 GHz, set RBW = 1MHz, VBW = 10 Hz, Sweep=Auto. If the emission is pulsed, modify the unit for continuous operation; use the settings shown above, then correct the reading by subtracting the peak-average correction factor, derived from the appropriate duty cycle calculation as in FCC Section 15.35(b) and (c).

### 3.3.4 Test Setup

#### <Radiated Band Edges>



#### <Conducted Band Edges>





3.3.5 Test Result of Radiated Band Edges

Test Mode :	Mode 1	Temperature :	23~28°C
Test Band :	802.11b	Relative Humidity :	53~58%
Test Channel :	01	Test Engineer :	Wii Chang

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
2382.77	55.59	-18.41	74	53.09	32	4.58	34.08	102	269	Peak
2382.77	44.74	-9.26	54	42.24	32	4.58	34.08	102	269	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	61.41	-12.59	74	58.89	32.02	4.58	34.08	111	324	Peak
2386	50.85	-3.15	54	48.33	32.02	4.58	34.08	111	324	Average

Test Mode :	Mode 3	Temperature :	23~28°C
Test Band :	802.11b	Relative Humidity :	53~58%
Test Channel :	11	Test Engineer :	Wii Chang

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
2487.46	56.56	-17.44	74	53.91	32.09	4.64	34.08	100	280	Peak
2487.46	44.39	-9.61	54	41.74	32.09	4.64	34.08	100	280	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
2488.03	61.5	-12.5	74	58.84	32.1	4.64	34.08	100	360	Peak
2488.03	50.98	-3.02	54	48.32	32.1	4.64	34.08	100	360	Average



Test Mode :	Mode 4	Temperature :	23~28°C
Test Band :	802.11b	Relative Humidity :	53~58%
Test Channel :	11	Test Engineer :	Wii Chang

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
2488.22	55.59	-18.41	74	52.93	32.1	4.64	34.08	126	277	Peak
2488.22	44.46	-9.54	54	41.8	32.1	4.64	34.08	126	277	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
2488.22	61.01	-12.99	74	58.35	32.1	4.64	34.08	114	4	Peak
2488.22	52.7	-1.3	54	50.04	32.1	4.64	34.08	114	4	Average

Test Mode :	Mode 5	Temperature :	23~28°C
Test Band :	802.11b	Relative Humidity :	53~58%
Test Channel :	11	Test Engineer :	Wii Chang

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
2487.08	55.74	-18.26	74	53.09	32.09	4.64	34.08	144	320	Peak
2487.08	44.2	-9.8	54	41.55	32.09	4.64	34.08	144	320	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
2483.5	59.98	-14.02	74	57.33	32.09	4.64	34.08	119	4	Peak
2483.5	50.56	-3.44	54	47.91	32.09	4.64	34.08	119	4	Average



Test Mode :	Mode 6	Temperature :	23~28°C
Test Band :	802.11g	Relative Humidity :	53~58%
Test Channel :	01	Test Engineer :	Wii Chang

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
2387.14	61.38	-12.62	74	58.86	32.02	4.58	34.08	102	266	Peak
2387.14	44.64	-9.36	54	42.12	32.02	4.58	34.08	102	266	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
2389.8	68.16	-5.84	74	65.64	32.02	4.58	34.08	105	4	Peak
2389.8	50.58	-3.42	54	48.06	32.02	4.58	34.08	105	4	Average

Test Mode :	Mode 8	Temperature :	23~28°C
Test Band :	802.11g	Relative Humidity :	53~58%
Test Channel :	11	Test Engineer :	Wii Chang

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
2484.99	58.14	-15.86	74	55.49	32.09	4.64	34.08	100	280	Peak
2484.99	44.13	-9.87	54	41.48	32.09	4.64	34.08	100	280	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
2484.42	68.54	-5.46	74	65.89	32.09	4.64	34.08	118	1	Peak
2484.42	50.81	-3.19	54	48.16	32.09	4.64	34.08	118	1	Average



Test Mode :	Mode 9	Temperature :	23~28°C
Test Band :	802.11g	Relative Humidity :	53~58%
Test Channel :	11	Test Engineer :	Wii Chang

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
2484.8	58.83	-15.17	74	56.18	32.09	4.64	34.08	100	264	Peak
2484.8	45.38	-8.62	54	42.73	32.09	4.64	34.08	100	264	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
2483.5	63.79	-10.21	74	61.14	32.09	4.64	34.08	100	324	Peak
2483.5	50.26	-3.74	54	47.61	32.09	4.64	34.08	100	324	Average

Test Mode :	Mode 10	Temperature :	23~28°C
Test Band :	802.11g	Relative Humidity :	53~58%
Test Channel :	11	Test Engineer :	Wii Chang

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
2483.5	58.69	-15.31	74	56.04	32.09	4.64	34.08	100	283	Peak
2483.5	44.77	-9.23	54	42.12	32.09	4.64	34.08	100	283	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
2483.5	68.95	-5.05	74	66.3	32.09	4.64	34.08	119	4	Peak
2483.5	51.37	-2.63	54	48.72	32.09	4.64	34.08	119	4	Average



Test Mode :	Mode 11	Temperature :	23~28°C
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	53~58%
Test Channel :	01	Test Engineer :	Wii Chang

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
2310	55.81	-18.19	74	53.42	31.95	4.53	34.09	102	270	Peak
2310	42.86	-11.14	54	40.47	31.95	4.53	34.09	102	270	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
2389.61	66.08	-7.92	74	63.56	32.02	4.58	34.08	100	32	Peak
2389.61	48.91	-5.09	54	46.39	32.02	4.58	34.08	100	32	Average

Test Mode :	Mode 13	Temperature :	23~28°C
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	53~58%
Test Channel :	11	Test Engineer :	Wii Chang

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
2483.85	55.69	-18.31	74	53.04	32.09	4.64	34.08	100	279	Peak
2483.85	42.96	-11.04	54	40.31	32.09	4.64	34.08	100	279	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
2483.85	68.66	-5.34	74	66.01	32.09	4.64	34.08	115	2	Peak
2483.85	50.01	-3.99	54	47.36	32.09	4.64	34.08	115	2	Average



Test Mode :	Mode 14	Temperature :	23~28°C
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	53~58%
Test Channel :	11	Test Engineer :	Wii Chang

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
2483.66	55.99	-18.01	74	53.34	32.09	4.64	34.08	100	264	Peak
2483.66	43.28	-10.72	54	40.63	32.09	4.64	34.08	100	264	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
2483.66	61.8	-12.2	74	59.15	32.09	4.64	34.08	100	322	Peak
2483.66	46.02	-7.98	54	43.37	32.09	4.64	34.08	100	322	Average

Test Mode :	Mode 15	Temperature :	23~28°C
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	53~58%
Test Channel :	11	Test Engineer :	Wii Chang

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
2483.85	56.23	-17.77	74	53.58	32.09	4.64	34.08	100	283	Peak
2483.85	43.15	-10.85	54	40.5	32.09	4.64	34.08	100	283	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
2483.66	60.54	-13.46	74	57.89	32.09	4.64	34.08	128	327	Peak
2483.66	45.2	-8.8	54	42.55	32.09	4.64	34.08	128	327	Average





Test Mode :	Mode 16	Temperature :	23~28°C
Test Band :	802.11n (BW 40MHz)	Relative Humidity :	53~58%
Test Channel :	03	Test Engineer :	Wii Chang

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
2387.71	57.66	-16.34	74	55.14	32.02	4.58	34.08	100	288	Peak
2387.71	43.31	-10.69	54	40.79	32.02	4.58	34.08	100	288	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
2389.99	65.19	-8.81	74	62.67	32.02	4.58	34.08	100	0	Peak
2389.99	46.98	-7.02	54	44.46	32.02	4.58	34.08	100	0	Average

Test Mode :	Mode 18	Temperature :	23~28°C
Test Band :	802.11n (BW 40MHz)	Relative Humidity :	53~58%
Test Channel :	09	Test Engineer :	Wii Chang

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
2483.85	57.74	-16.26	74	55.09	32.09	4.64	34.08	100	280	Peak
2483.85	43.41	-10.59	54	40.76	32.09	4.64	34.08	100	280	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
2484.04	66.16	-7.84	74	63.51	32.09	4.64	34.08	118	4	Peak
2484.04	47.89	-6.11	54	45.24	32.09	4.64	34.08	118	4	Average



Test Mode :	Mode 19	Temperature :	23~28°C
Test Band :	802.11n (BW 40MHz)	Relative Humidity :	53~58%
Test Channel :	09	Test Engineer :	Wii Chang

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
2484.8	59.18	-14.82	74	56.53	32.09	4.64	34.08	101	253	Peak
2484.8	44.3	-9.7	54	41.65	32.09	4.64	34.08	101	253	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
2484.04	67.01	-6.99	74	64.36	32.09	4.64	34.08	100	32	Peak
2484.04	50.47	-3.53	54	47.82	32.09	4.64	34.08	100	32	Average

Test Mode :	Mode 20	Temperature :	23~28°C
Test Band :	802.11n (BW 40MHz)	Relative Humidity :	53~58%
Test Channel :	09	Test Engineer :	Wii Chang

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
2483.5	59.89	-14.11	74	57.24	32.09	4.64	34.08	100	285	Peak
2483.5	44.39	-9.61	54	41.74	32.09	4.64	34.08	100	285	Average

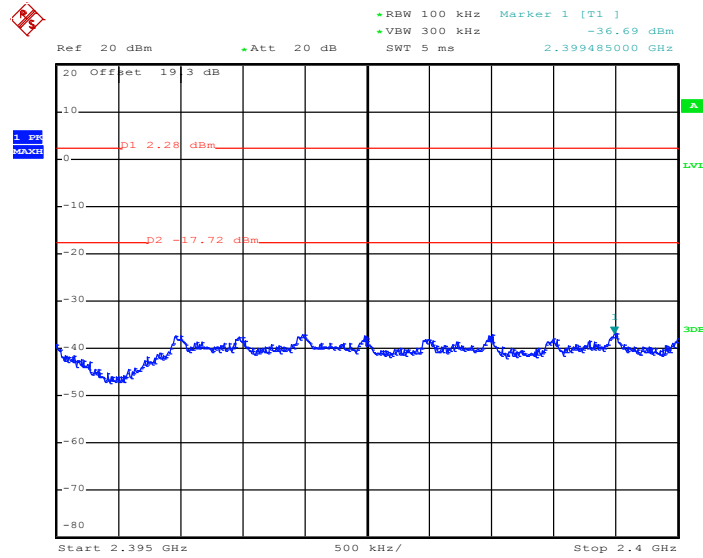
ANTENNA POLARITY : VERTICAL										
Frequency ( MHz )	Level ( dBuV/m )	Over Limit ( dB )	Limit Line ( dBuV/m )	Read Level ( dBuV )	Antenna Factor ( dB )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Remark
2484.04	68.46	-5.54	74	65.81	32.09	4.64	34.08	118	5	Peak
2484.04	51.71	-2.29	54	49.06	32.09	4.64	34.08	118	5	Average



### 3.3.6 Test Plots of Conducted Band Edges

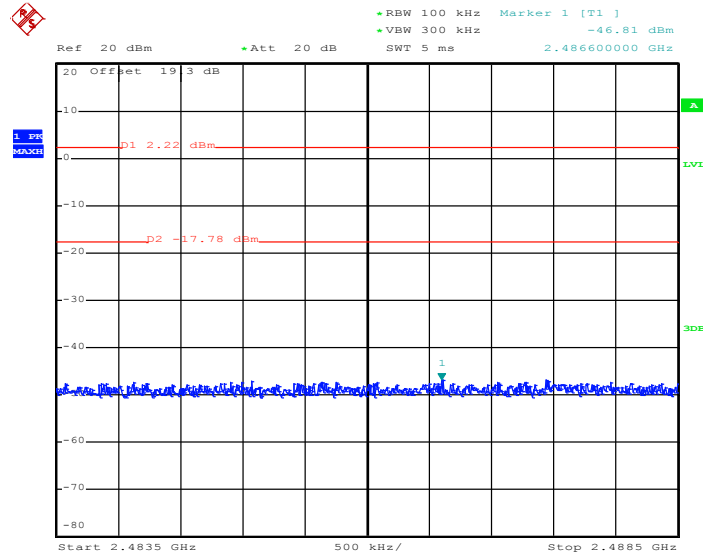
Test Mode :	Mode 1 and 3	Temperature :	25~27°C
Test Band :	802.11b	Relative Humidity :	55~57%
Test Channel :	01 and 11	Test Engineer :	Hank Yu

Low Band Edge Plot on 802.11b Channel 01 – Chain A



Date: 9.NOV.2011 13:40:20

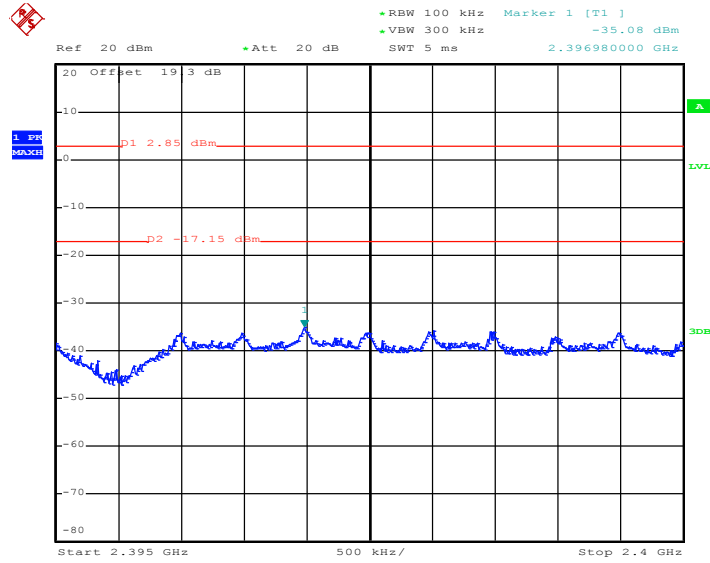
High Band Edge Plot on 802.11b Channel 11 - Chain A



Date: 9.NOV.2011 13:37:47

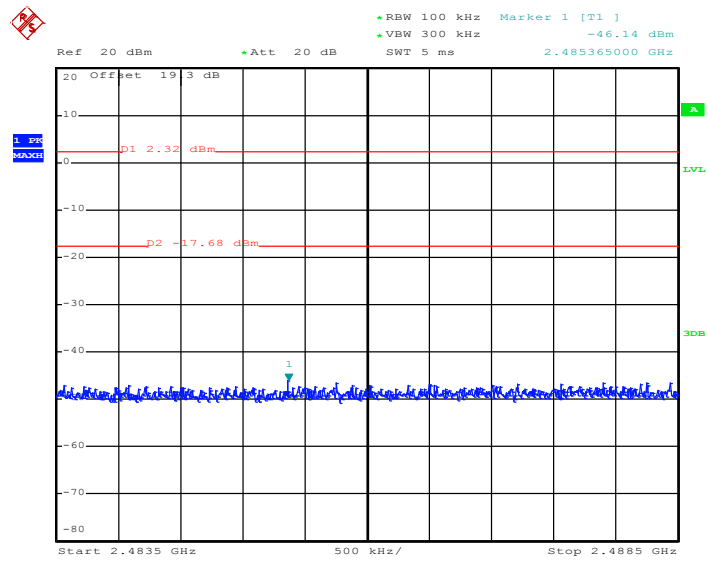


Low Band Edge Plot on 802.11b Channel 01 – Chain B



Date: 9.NOV.2011 13:28:48

High Band Edge Plot on 802.11b Channel 11 - Chain B

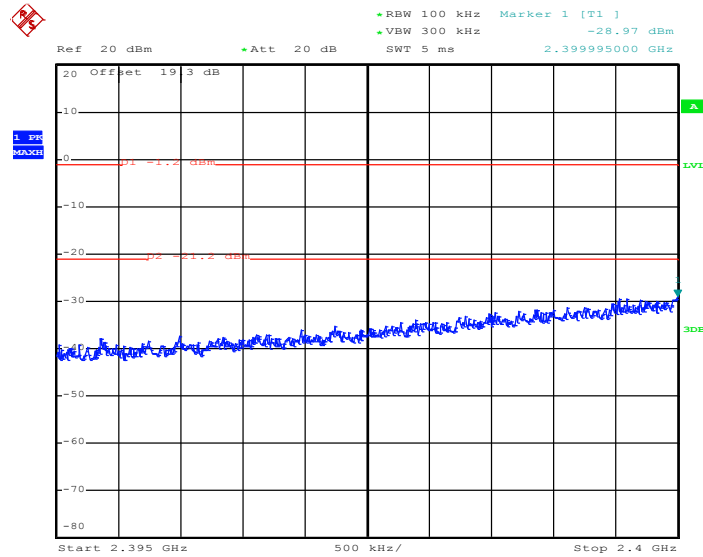


Date: 9.NOV.2011 13:34:13



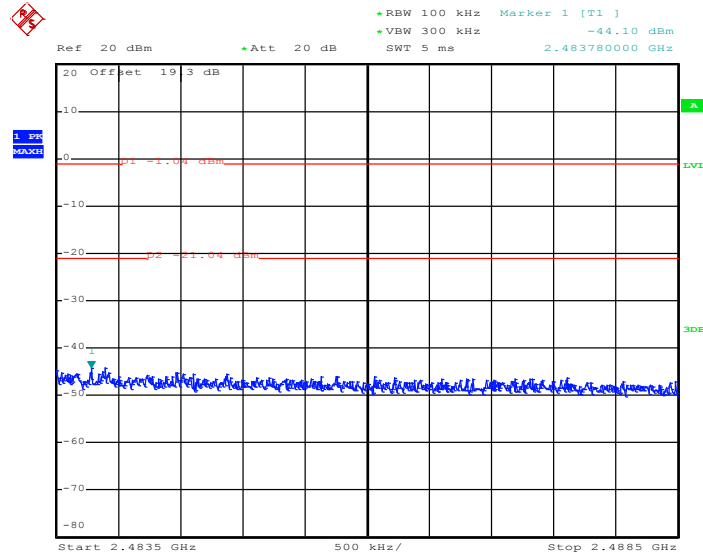
Test Mode :	Mode 4 and 6	Temperature :	25~27°C
Test Band :	802.11g	Relative Humidity :	55~57%
Test Channel :	01 and 11	Test Engineer :	Hank Yu

Low Band Edge Plot on 802.11g Channel 01 - Chain A



Date: 9.NOV.2011 13:53:43

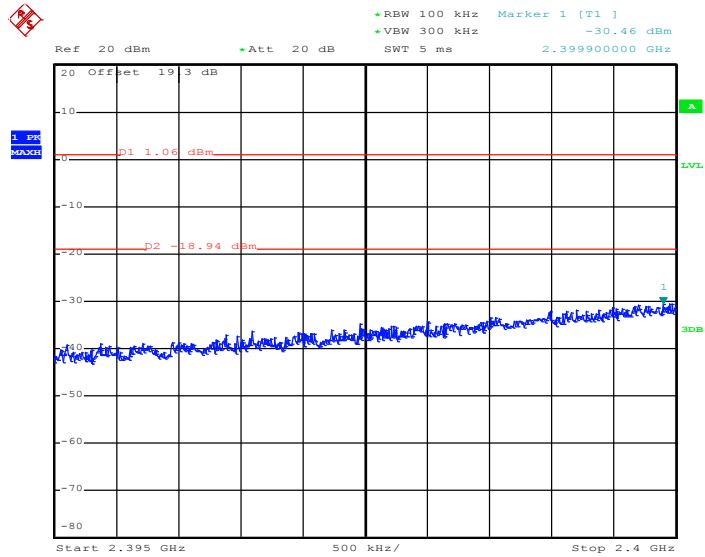
High Band Edge Plot on 802.11g Channel 11 - Chain A



Date: 9.NOV.2011 13:50:28

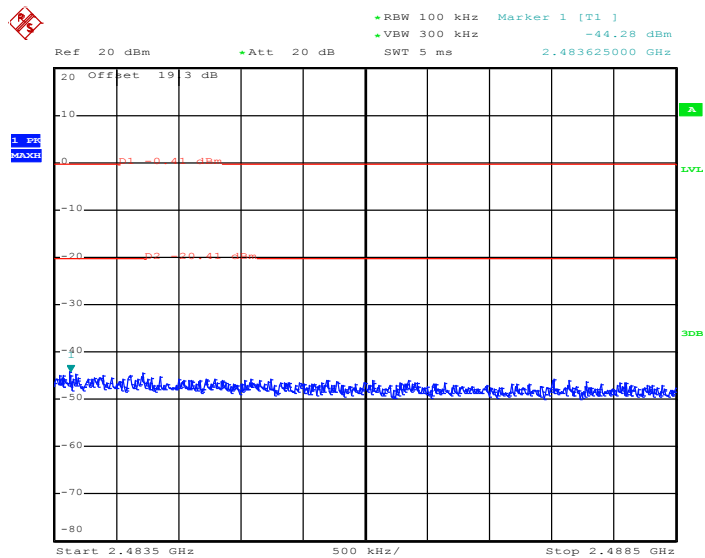


Low Band Edge Plot on 802.11g Channel 01 - Chain B



Date: 9.NOV.2011 14:05:54

High Band Edge Plot on 802.11g Channel 11 - Chain B

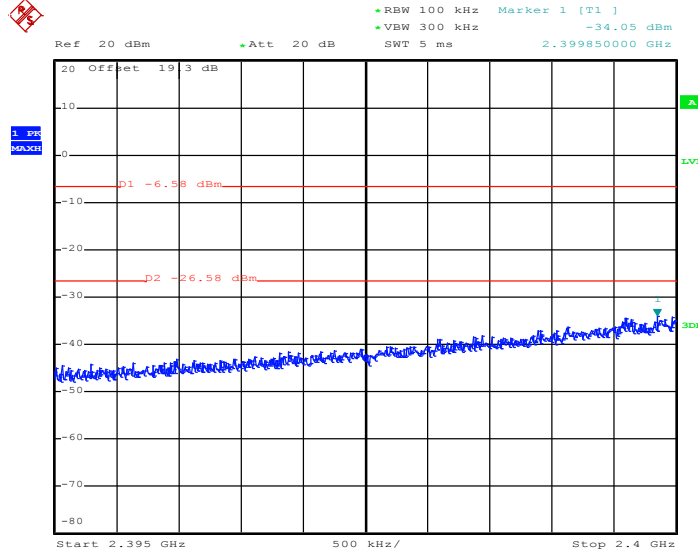


Date: 9.NOV.2011 14:02:06



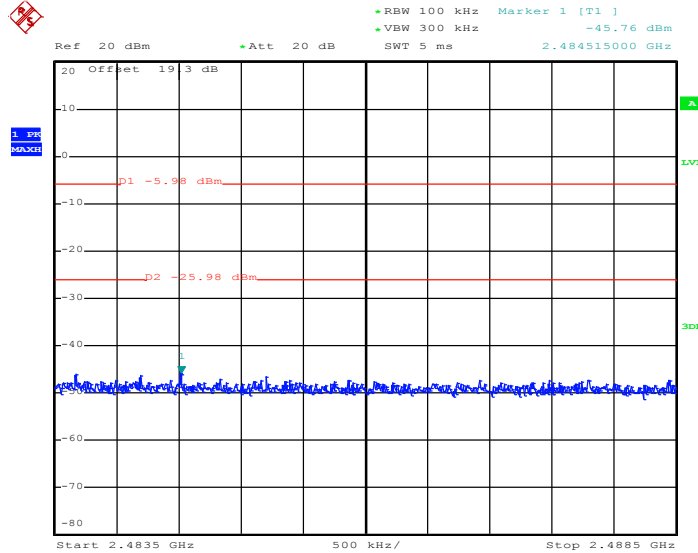
Test Mode :	Mode 7 and 9	Temperature :	25~27°C
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	55~57%
Test Channel :	01 and 11	Test Engineer :	Hank Yu

Low Band Edge Plot on 802.11n (BW 20MHz) Channel 01 – Chain A



Date: 9.NOV.2011 11:56:48

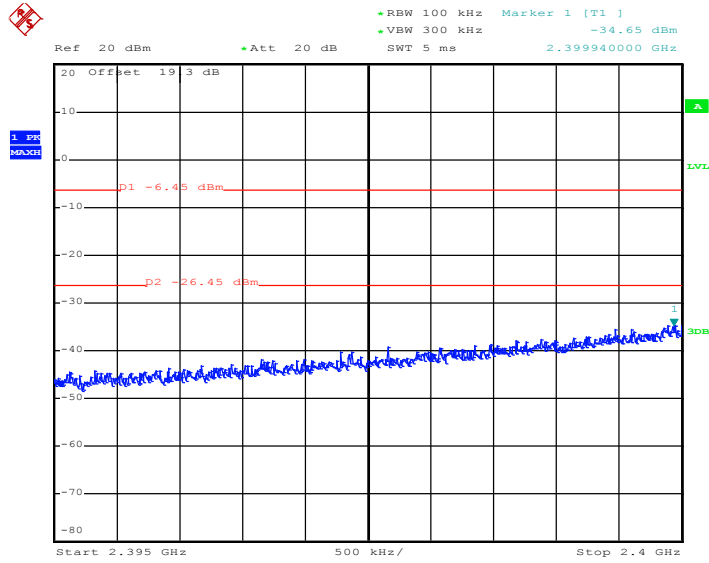
High Band Edge Plot on 802.11n (BW 20MHz) Channel 11 – Chain A



Date: 9.NOV.2011 11:59:41

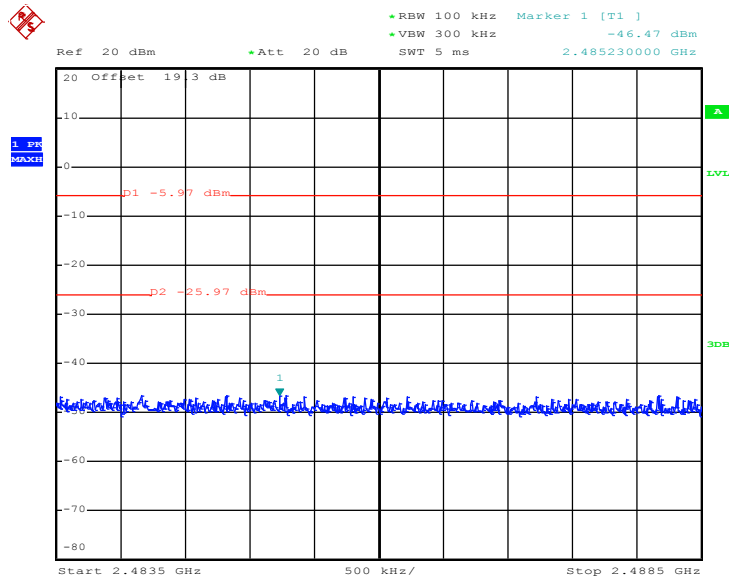


Low Band Edge Plot on 802.11n (BW 20MHz) Channel 01 – Chain B



Date: 9.NOV.2011 12:28:45

High Band Edge Plot on 802.11n (BW 20MHz) Channel 11 – Chain B



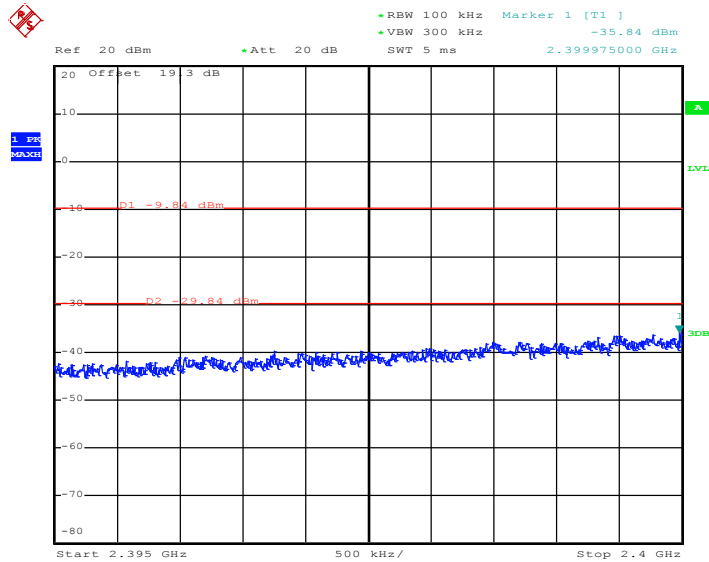
Date: 9.NOV.2011 12:26:34





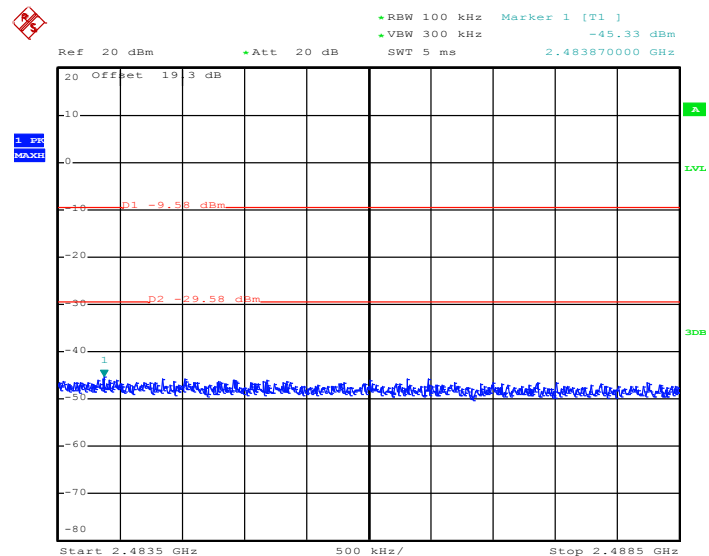
Test Mode :	Mode 10 and 12	Temperature :	25~27°C
Test Band :	802.11n (BW 40MHz)	Relative Humidity :	55~57%
Test Channel :	03 and 09	Test Engineer :	Hank Yu

Low Band Edge Plot on 802.11n (BW 40MHz) Channel 03 – Chain A



Date: 9.NOV.2011 11:44:46

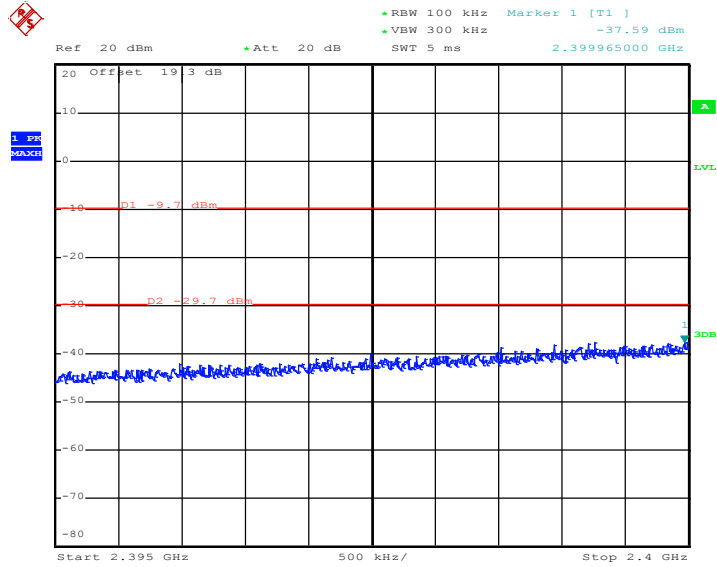
High Band Edge Plot on 802.11n (BW 40MHz) Channel 09 – Chain A



Date: 9.NOV.2011 11:47:31

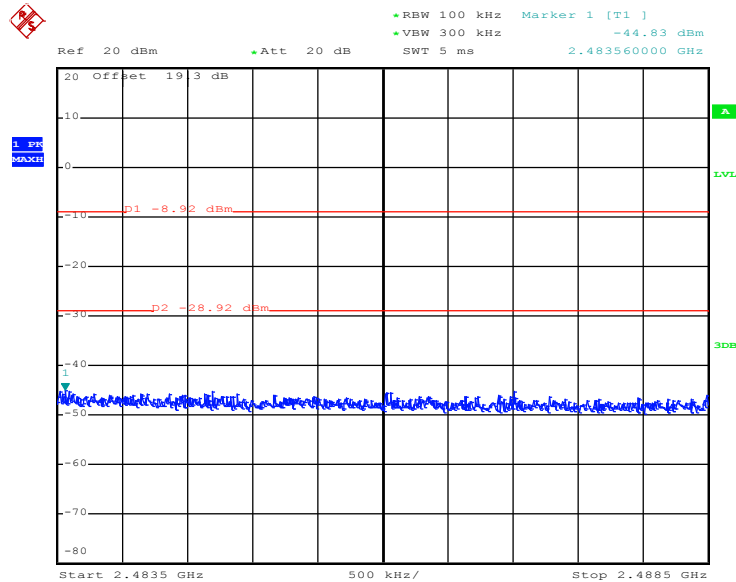


Low Band Edge Plot on 802.11n (BW 40MHz) Channel 03 – Chain B



Date: 9.NOV.2011 11:38:39

High Band Edge Plot on 802.11n (BW 40MHz) Channel 09 – Chain B



Date: 9.NOV.2011 11:30:16

## 3.4 Spurious Emission Measurement

### 3.4.1 Limit of Spurious Emission Measurement

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

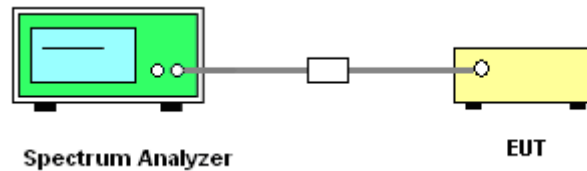
### 3.4.2 Measuring Instruments

See list of measuring instruments of this test report.

### 3.4.3 Test Procedure

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

### 3.4.4 Test Setup

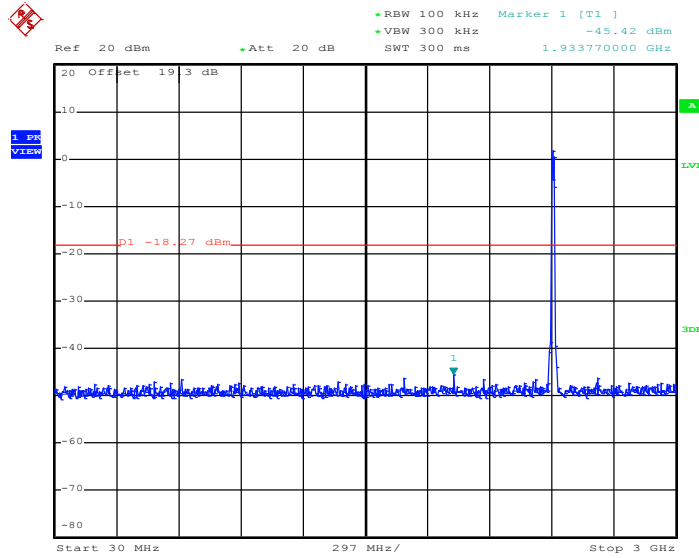




### 3.4.5 Test Plots of Spurious Emission

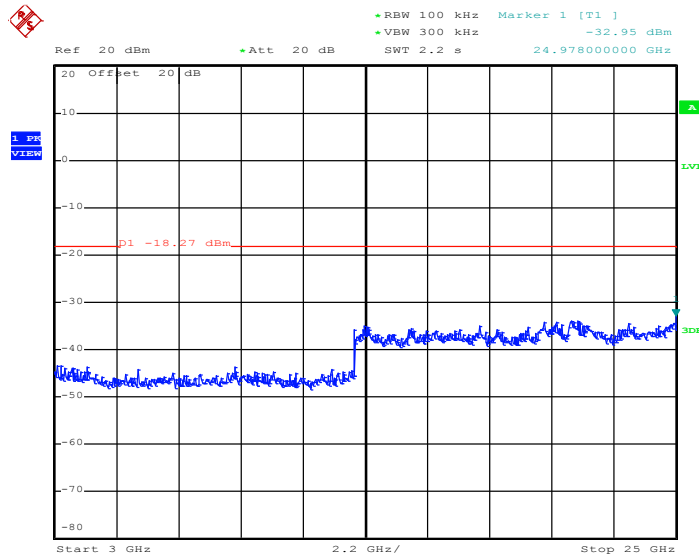
Test Mode :	Mode 1	Temperature :	25~27°C
Test Band :	802.11b	Relative Humidity :	55~57%
Test Channel :	01	Test Engineer :	Hank Yu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz – Chain A



Date: 9.NOV.2011 10:59:41

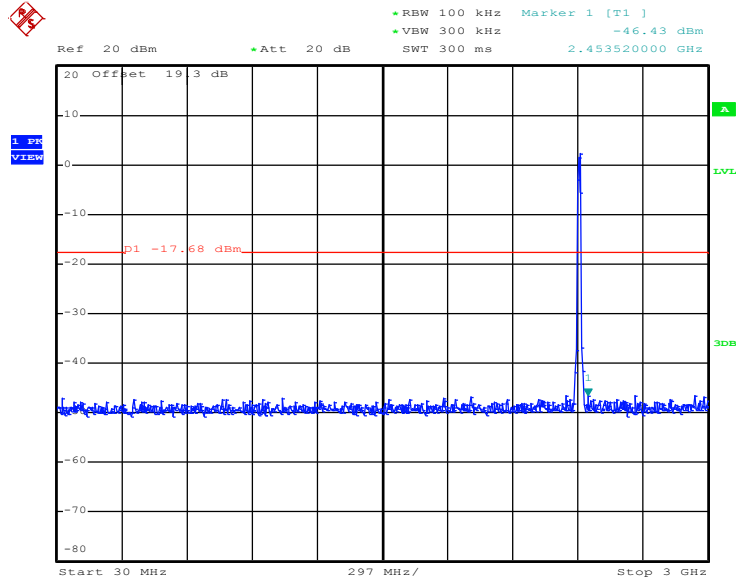
Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz – Chain A



Date: 9.NOV.2011 10:59:58

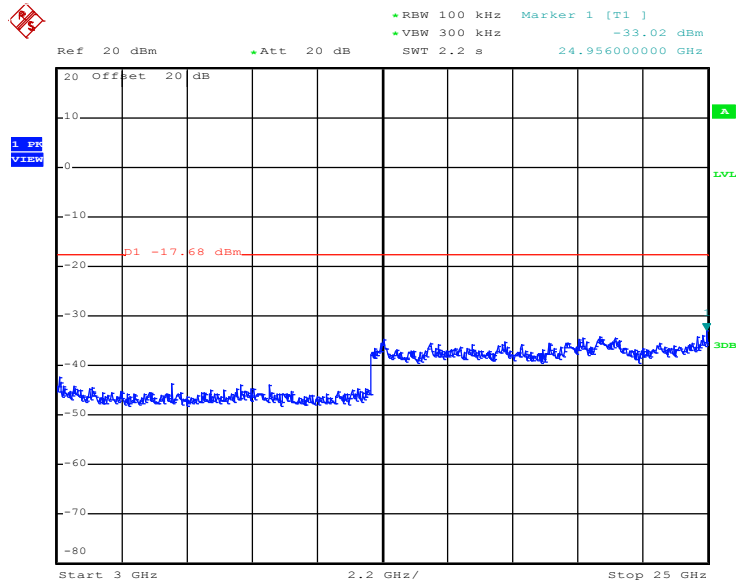


Conducted Spurious Emission Plot between 30MHz ~ 3 GHz – Chain B



Date: 9.NOV.2011 11:03:42

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz – Chain B

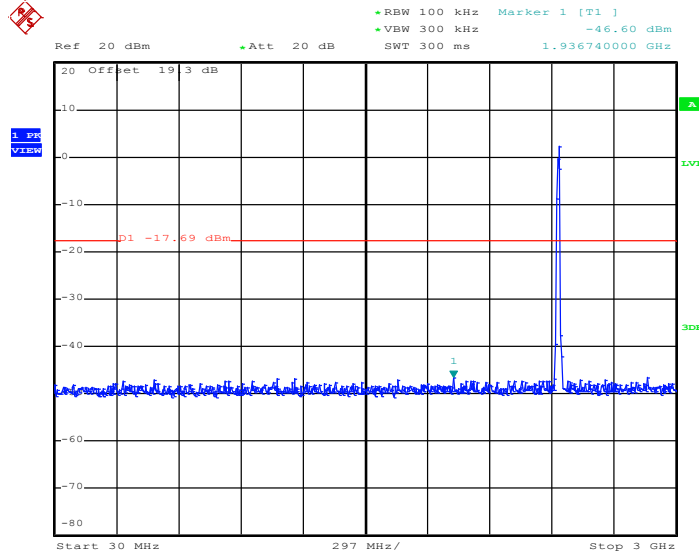


Date: 9.NOV.2011 11:03:59



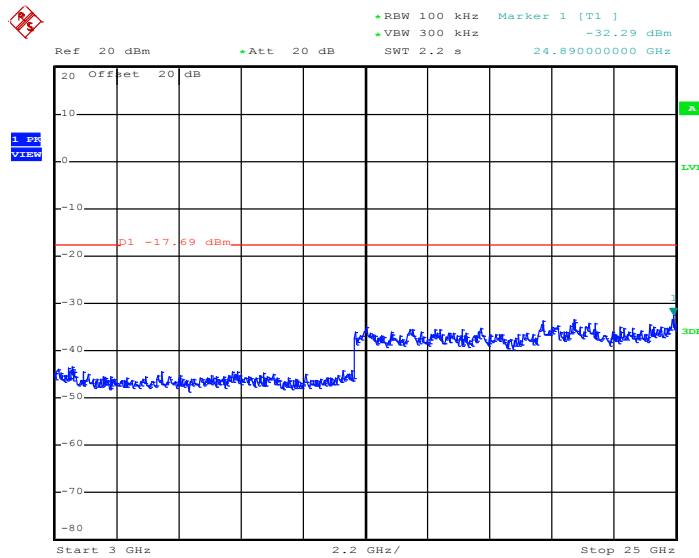
Test Mode :	Mode 2	Temperature :	25~27°C
Test Band :	802.11b	Relative Humidity :	55~57%
Test Channel :	06	Test Engineer :	Hank Yu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz – Chain A



Date: 9.NOV.2011 10:58:36

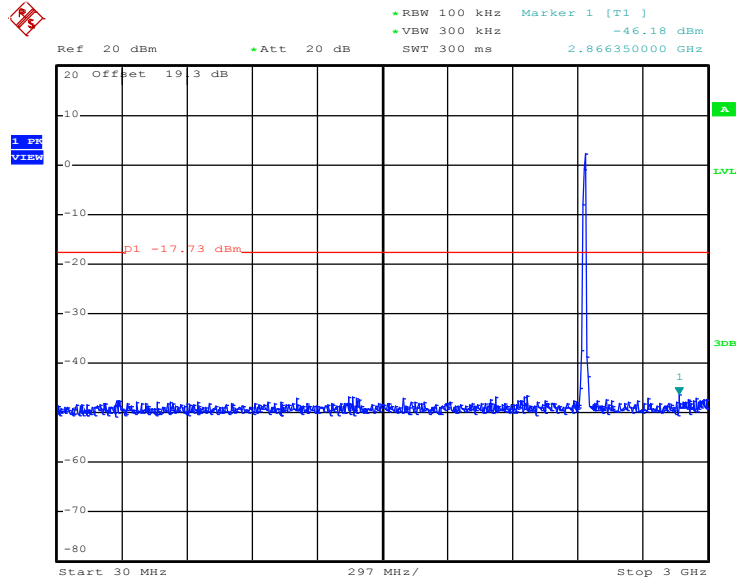
Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz – Chain A



Date: 9.NOV.2011 10:58:53

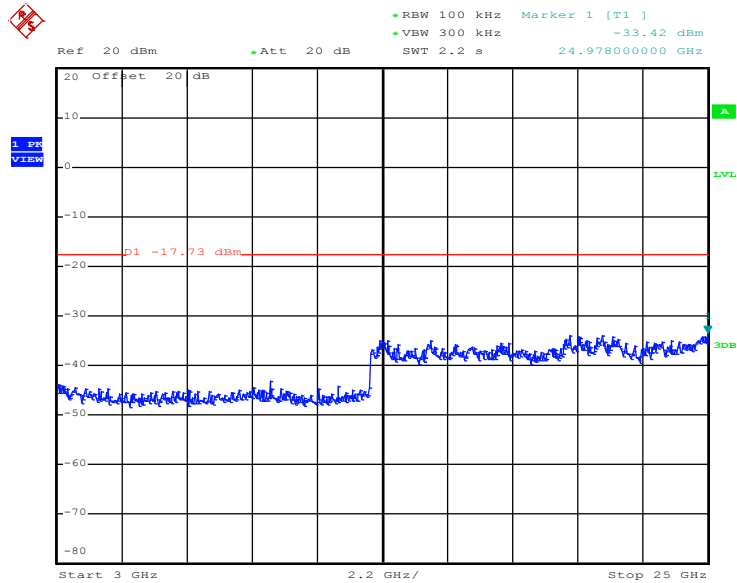


Conducted Spurious Emission Plot between 30MHz ~ 3 GHz – Chain B



Date: 9.NOV.2011 11:04:49

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz – Chain B

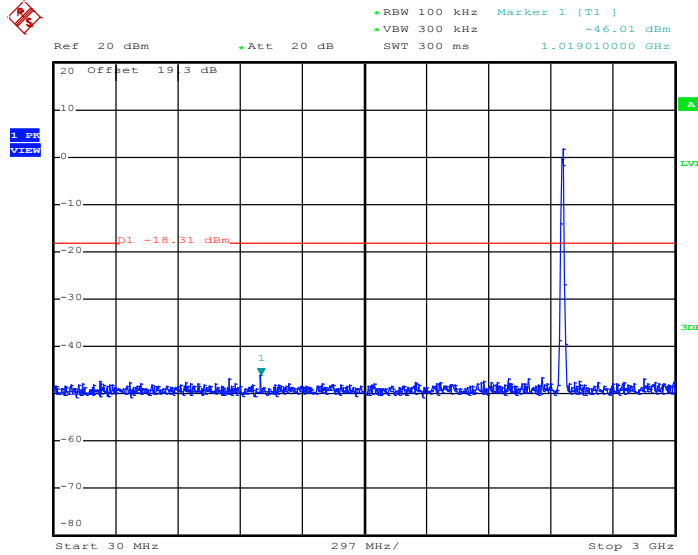


Date: 9.NOV.2011 11:05:06



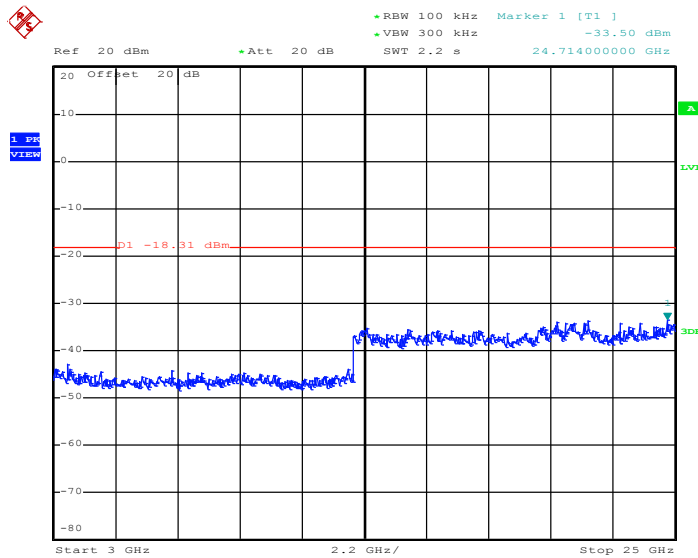
Test Mode :	Mode 3	Temperature :	25~27°C
Test Band :	802.11b	Relative Humidity :	55~57%
Test Channel :	11	Test Engineer :	Hank Yu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz – Chain A



Date: 9.NOV.2011 10:53:24

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz – Chain A

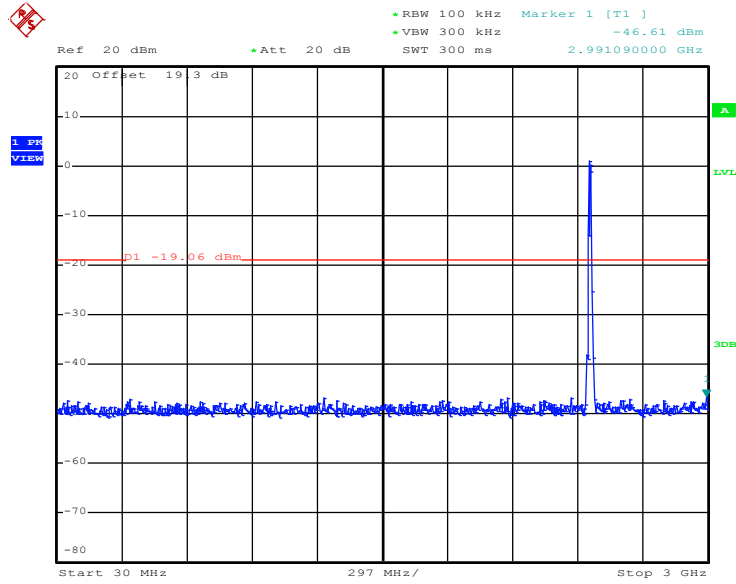


Date: 9.NOV.2011 10:53:41



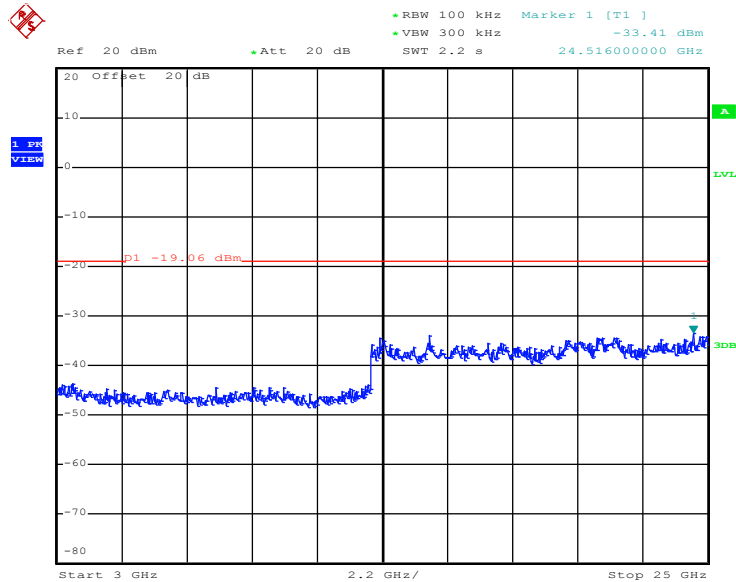


Conducted Spurious Emission Plot between 30MHz ~ 3 GHz – Chain B



Date: 9.NOV.2011 11:05:44

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz – Chain B

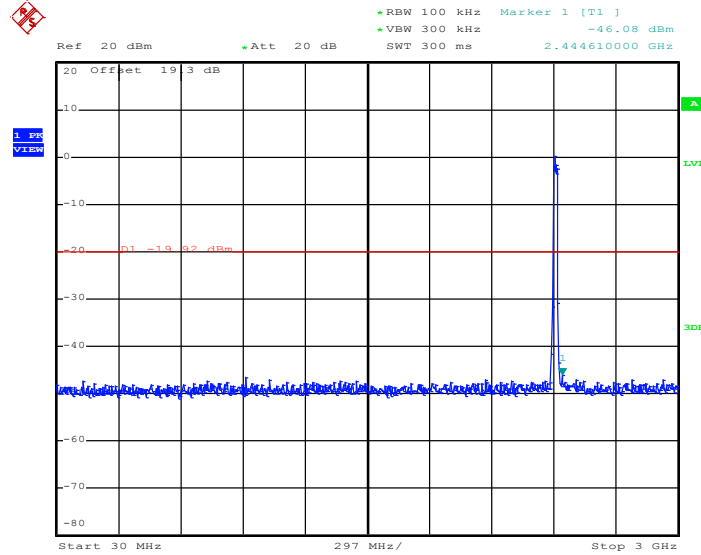


Date: 9.NOV.2011 11:06:02



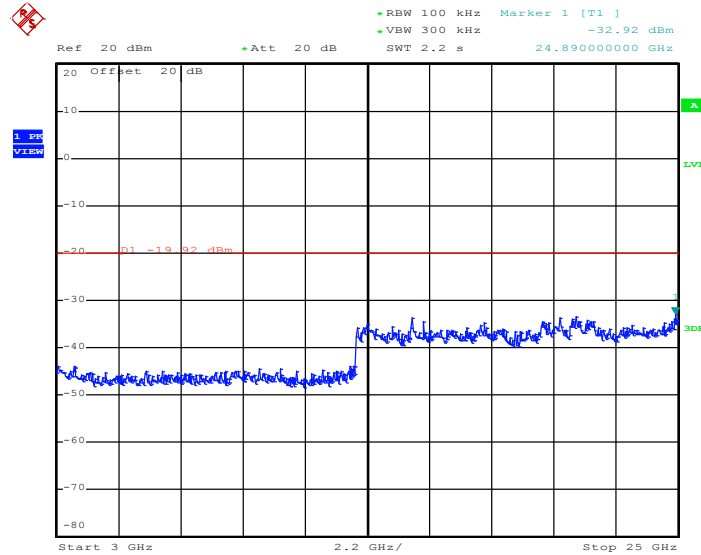
Test Mode :	Mode 4	Temperature :	25~27°C
Test Band :	802.11g	Relative Humidity :	55~57%
Test Channel :	01	Test Engineer :	Hank Yu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz – Chain A



Date: 9.NOV.2011 11:10:53

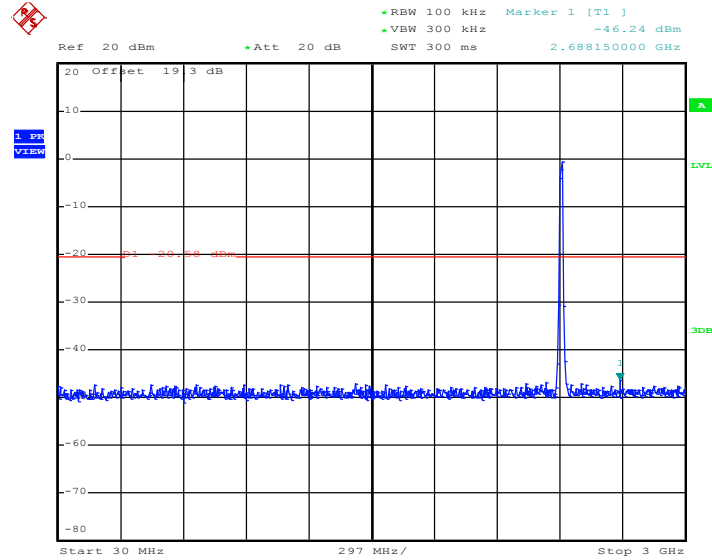
Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz – Chain A



Date: 9.NOV.2011 11:11:10

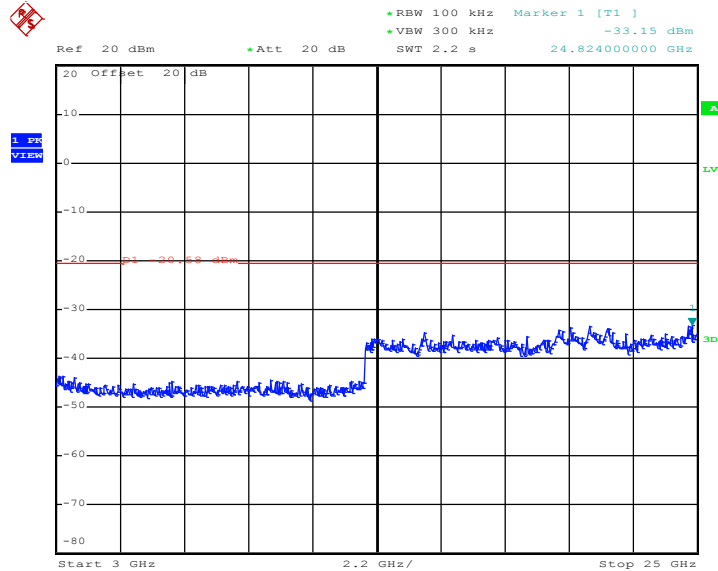


Conducted Spurious Emission Plot between 30MHz ~ 3 GHz –  
Chain B



Date: 9.NOV.2011 11:09:25

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz –  
Chain B

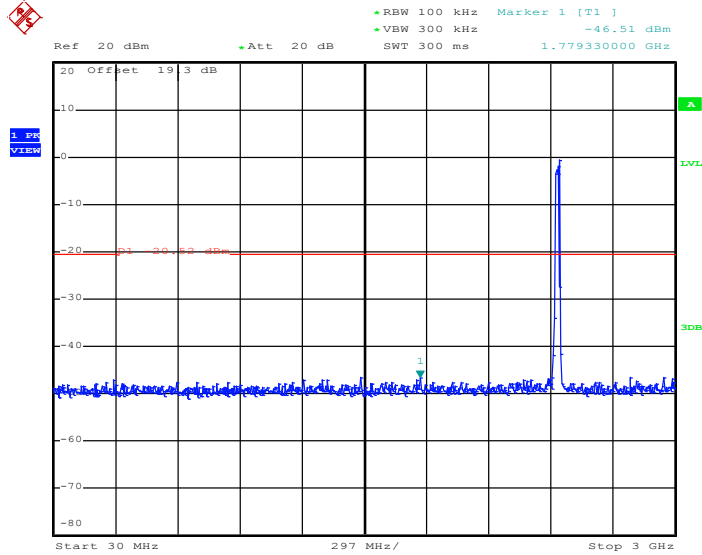


Date: 9.NOV.2011 11:09:42



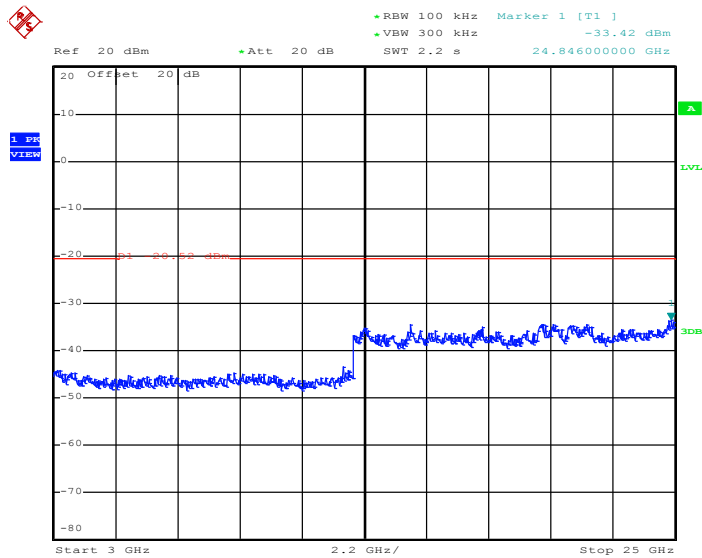
Test Mode :	Mode 5	Temperature :	25~27
Test Band :	802.11g	Relative Humidity :	55~57
Test Channel :	06	Test Engineer :	Hank Yu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz – Chain A



Date: 9.NOV.2011 11:12:19

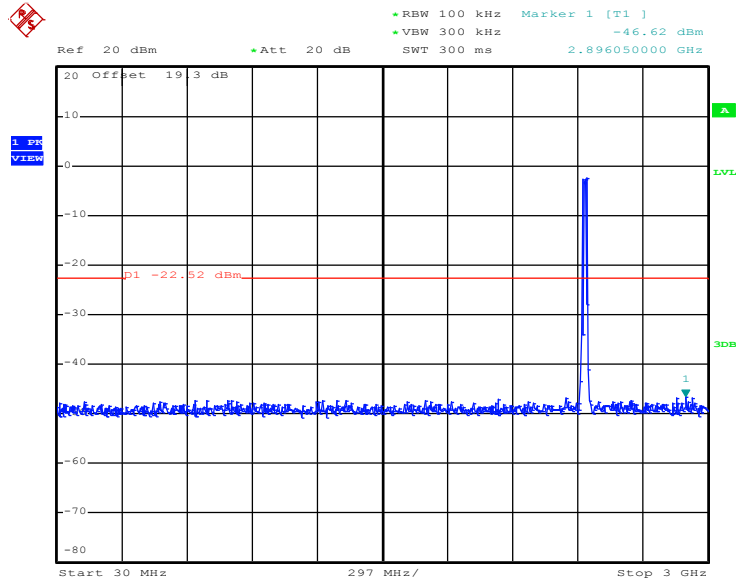
Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz – Chain A



Date: 9.NOV.2011 11:12:36

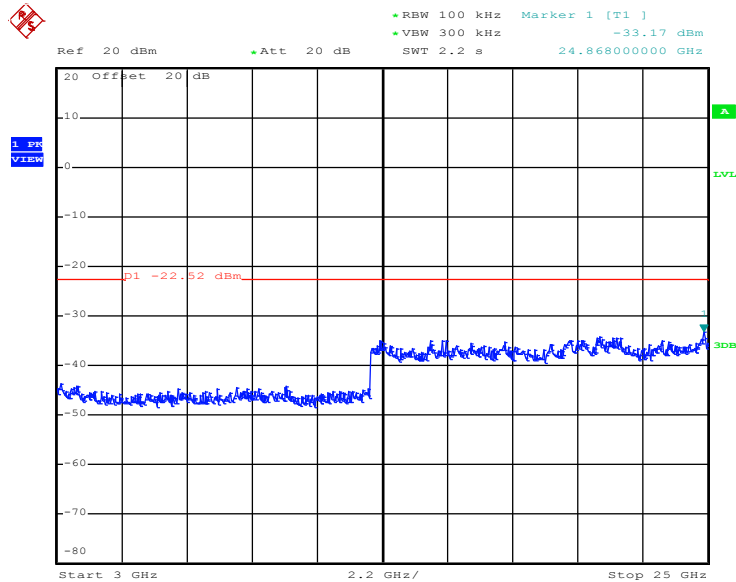


Conducted Spurious Emission Plot between 30MHz ~ 3 GHz – Chain B



Date: 9.NOV.2011 11:08:39

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz – Chain B

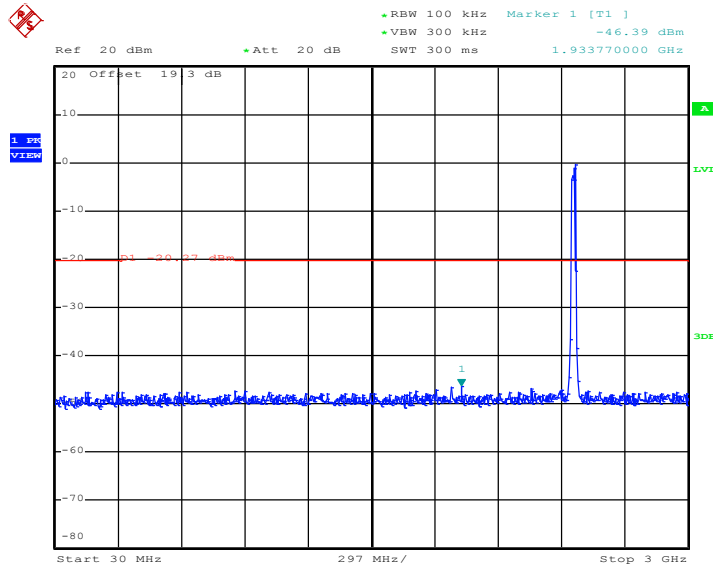


Date: 9.NOV.2011 11:08:57



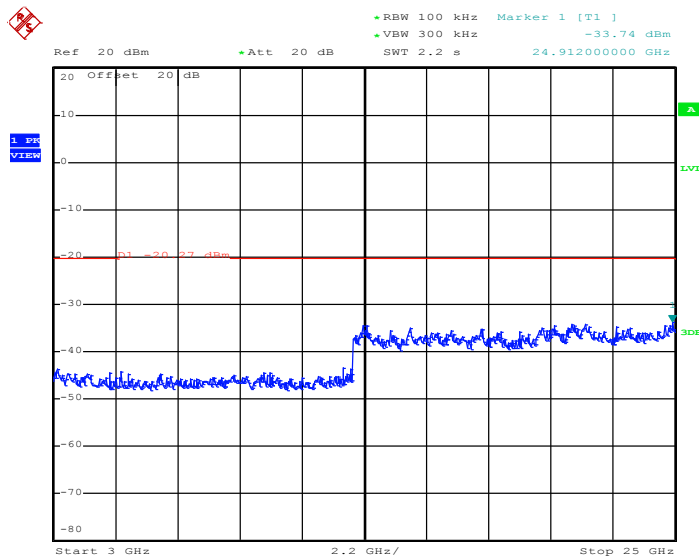
Test Mode :	Mode 6	Temperature :	25~27°C
Test Band :	802.11g	Relative Humidity :	55~57%
Test Channel :	11	Test Engineer :	Hank Yu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz – Chain A



Date: 9.NOV.2011 11:13:08

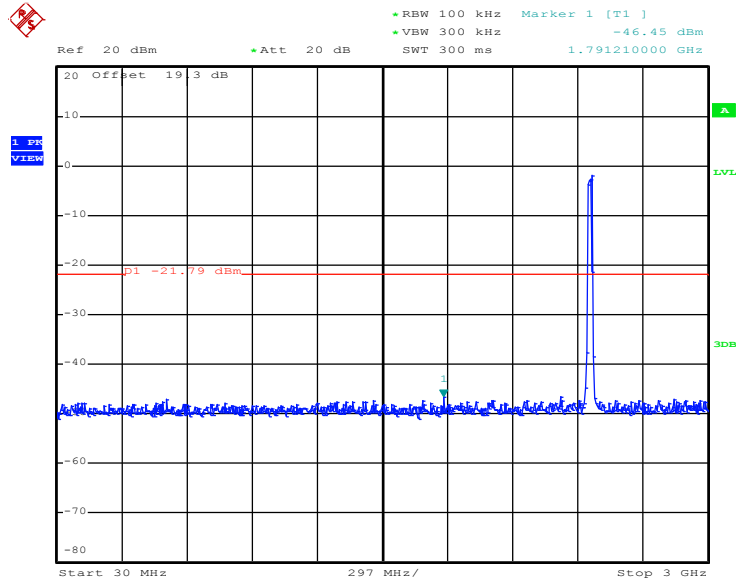
Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz – Chain A



Date: 9.NOV.2011 11:13:25

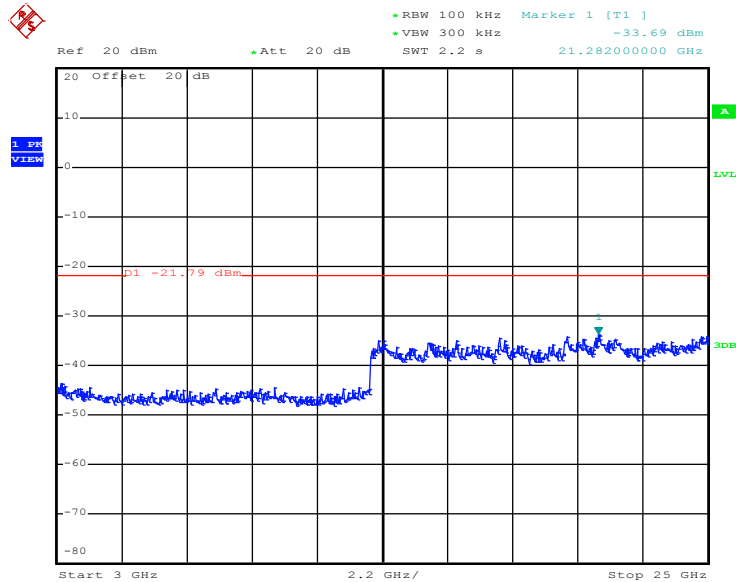


Conducted Spurious Emission Plot between 30MHz ~ 3 GHz – Chain B



Date: 9.NOV.2011 11:07:58

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz – Chain B

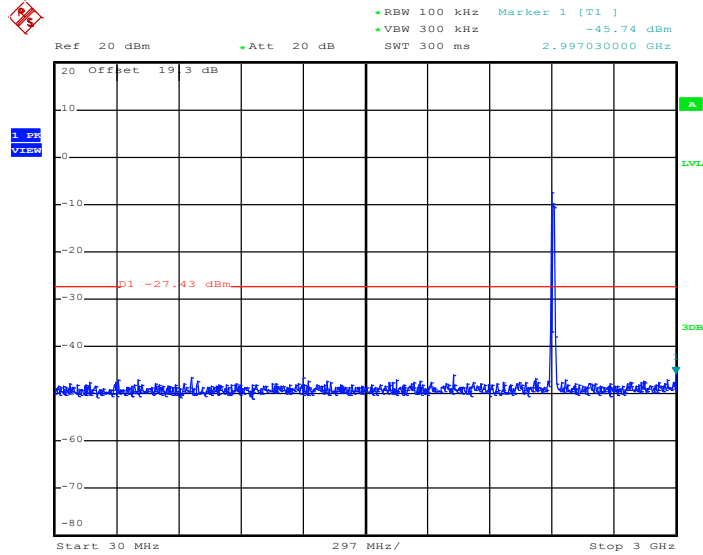


Date: 9.NOV.2011 11:08:15



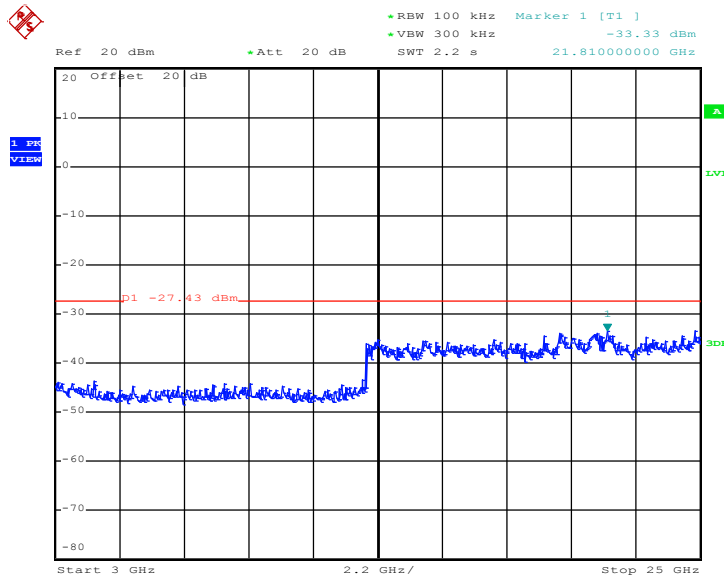
Test Mode :	Mode 7	Temperature :	25~27°C
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	55~57%
Test Channel :	01	Test Engineer :	Hank Yu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz – Chain A



Date: 9.NOV.2011 11:23:53

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz – Chain A

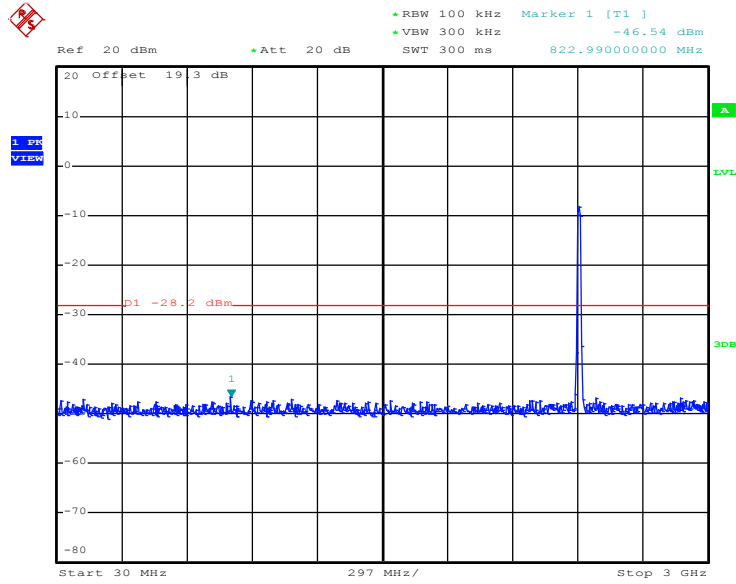


Date: 9.NOV.2011 11:24:10



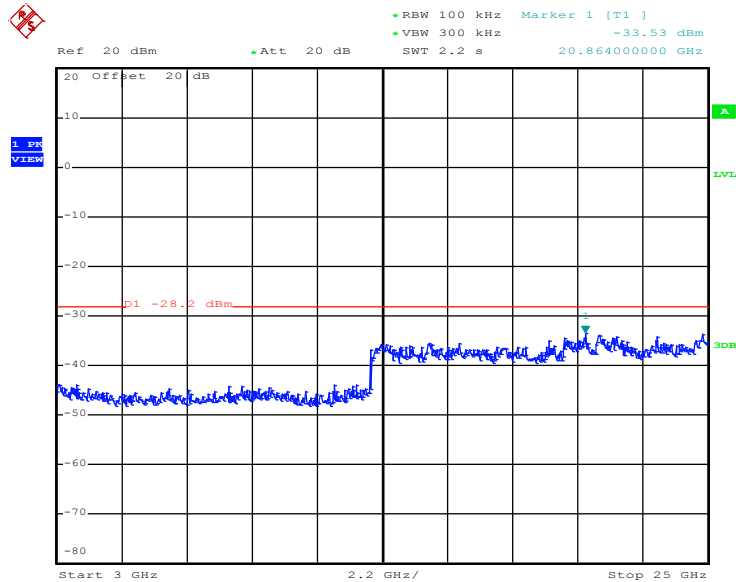


Conducted Spurious Emission Plot between 30MHz ~ 3 GHz – Chain B



Date: 9.NOV.2011 11:20:51

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz – Chain B

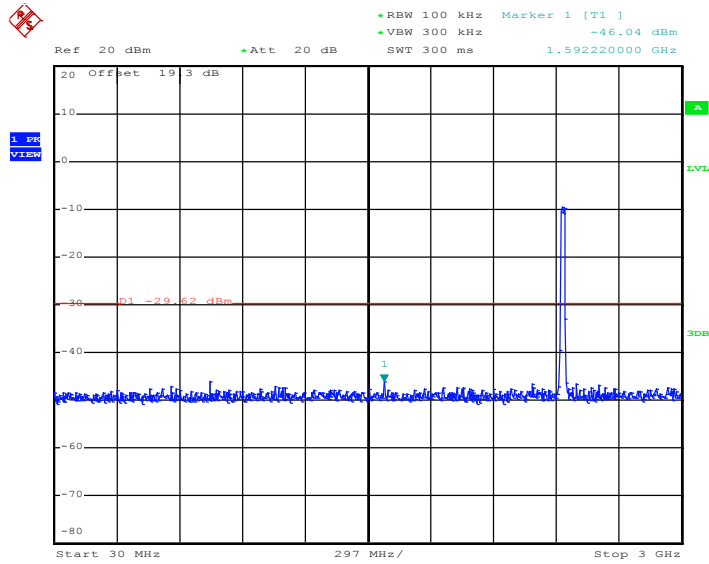


Date: 9.NOV.2011 11:21:08



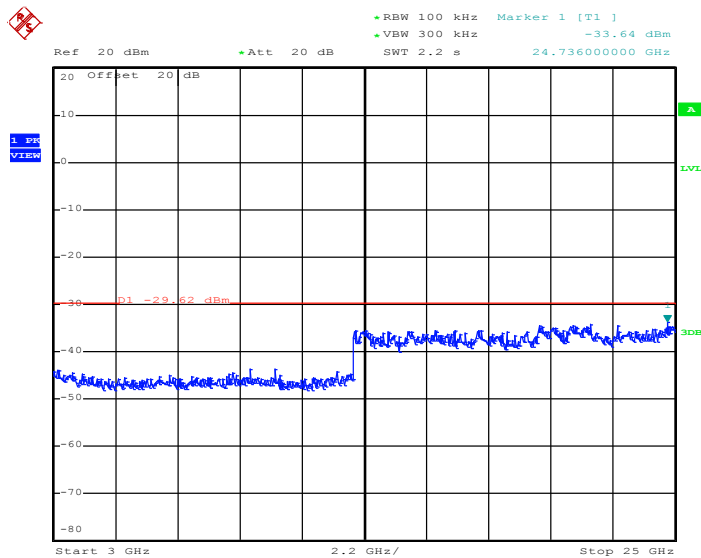
Test Mode :	Mode 8	Temperature :	25~27°C
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	55~57%
Test Channel :	06	Test Engineer :	Hank Yu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz – Chain A



Date: 9.NOV.2011 11:15:02

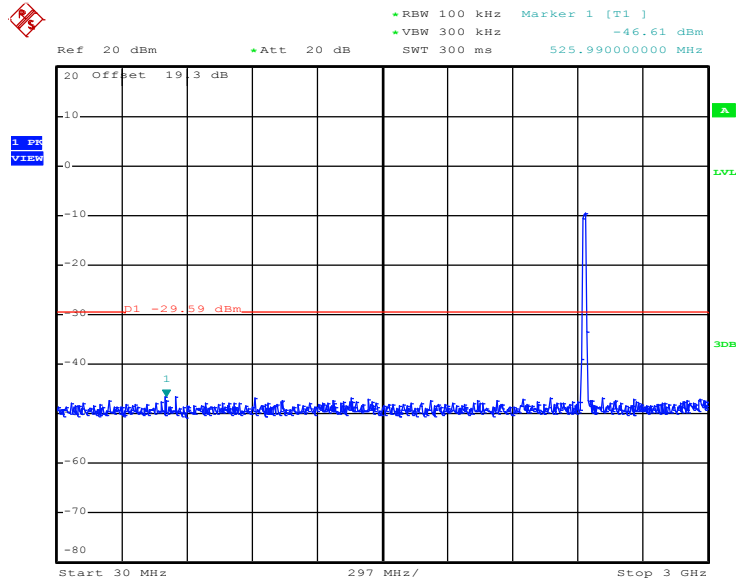
Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz – Chain A



Date: 9.NOV.2011 11:15:19

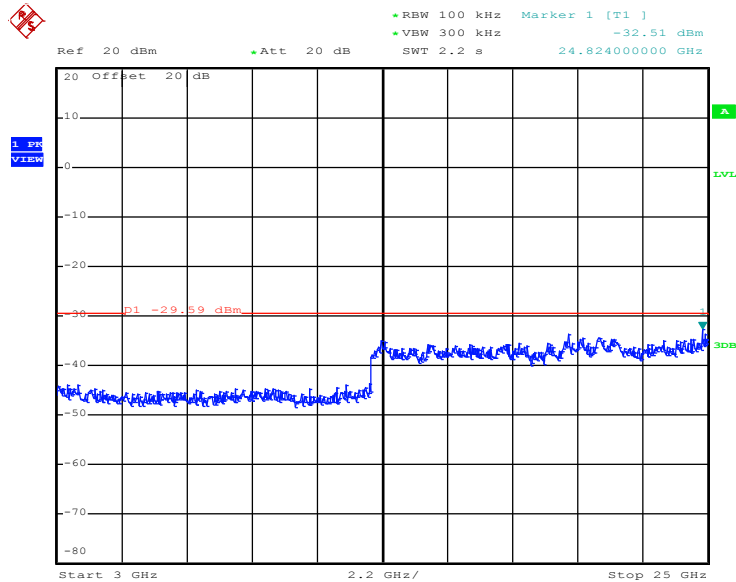


Conducted Spurious Emission Plot between 30MHz ~ 3 GHz – Chain B



Date: 9.NOV.2011 11:22:01

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz – Chain B

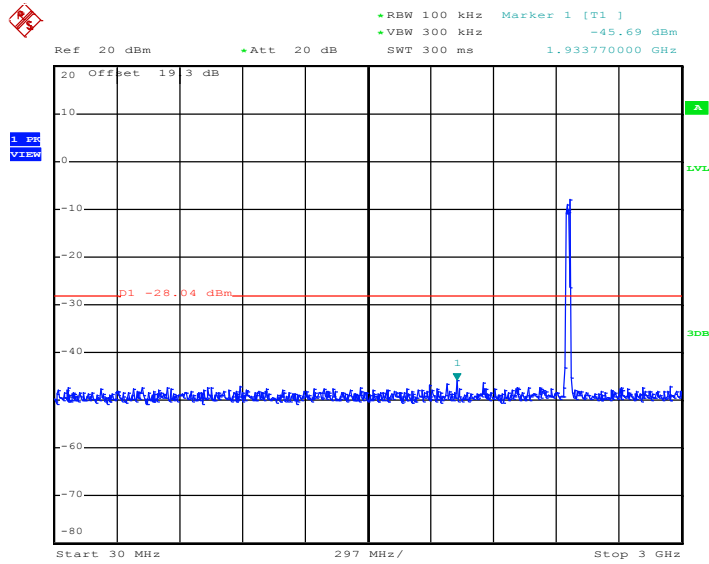


Date: 9.NOV.2011 11:22:18



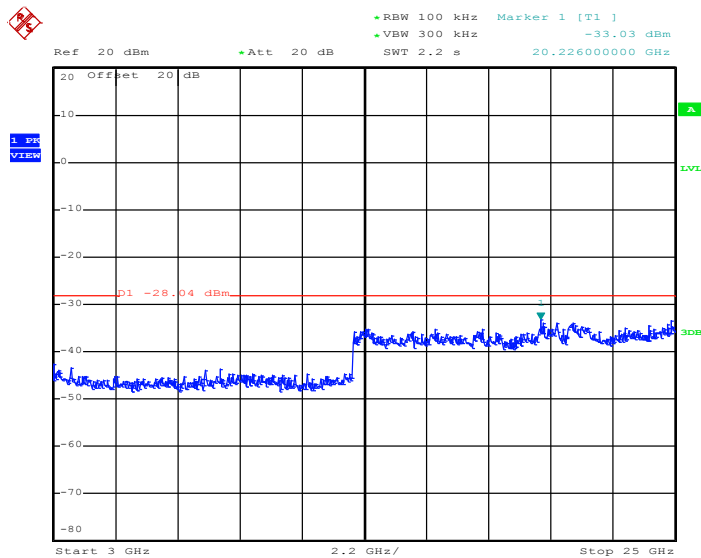
Test Mode :	Mode 9	Temperature :	25~27°C
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	55~57%
Test Channel :	11	Test Engineer :	Hank Yu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz – Chain A



Date: 9.NOV.2011 11:14:17

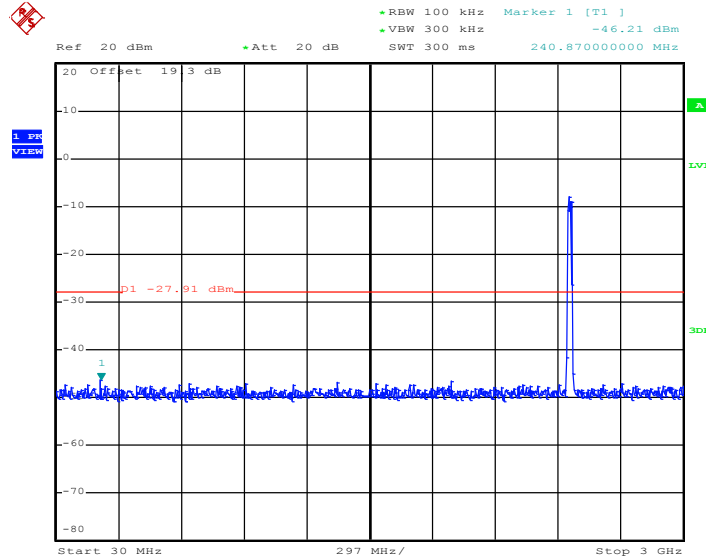
Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz – Chain A



Date: 9.NOV.2011 11:14:34

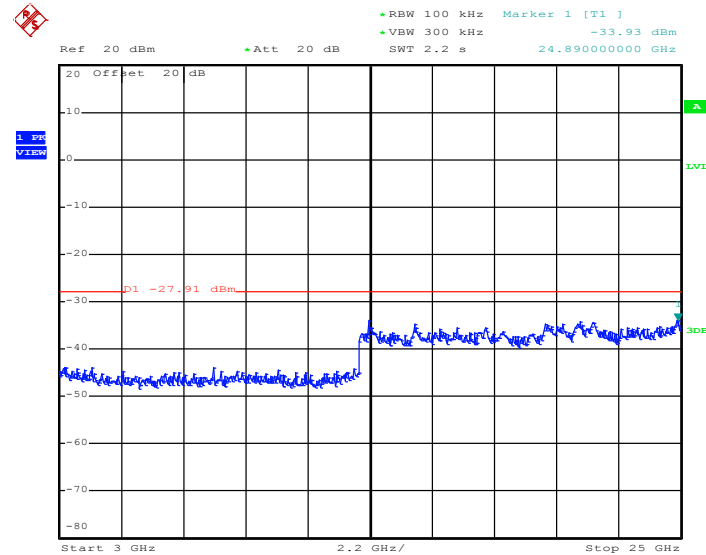


Conducted Spurious Emission Plot between 30MHz ~ 3 GHz –  
Chain B



Date: 9.NOV.2011 11:22:43

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz –  
Chain B

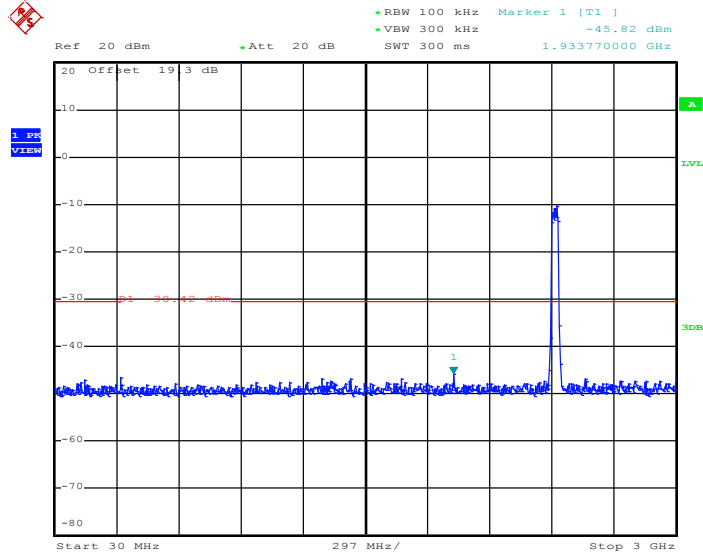


Date: 9.NOV.2011 11:23:00



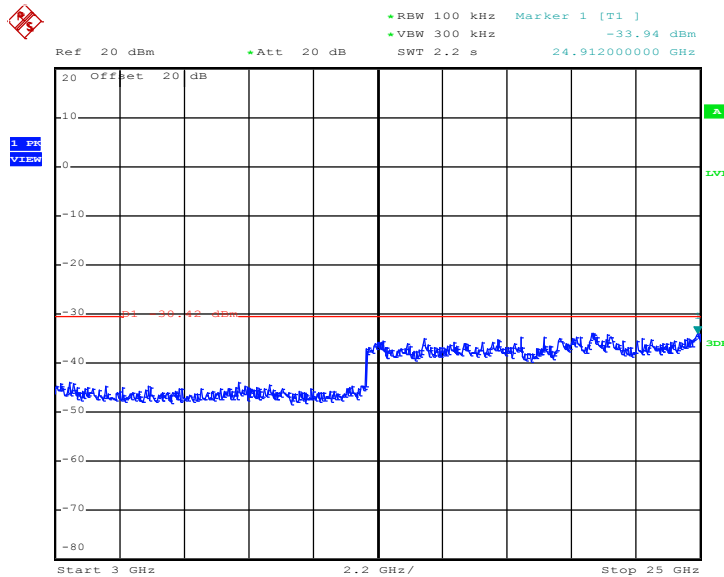
Test Mode :	Mode 10	Temperature :	25~27°C
Test Band :	802.11n (BW 40MHz)	Relative Humidity :	55~57%
Test Channel :	03	Test Engineer :	Hank Yu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz - Chain A



Date: 9.NOV.2011 11:25:53

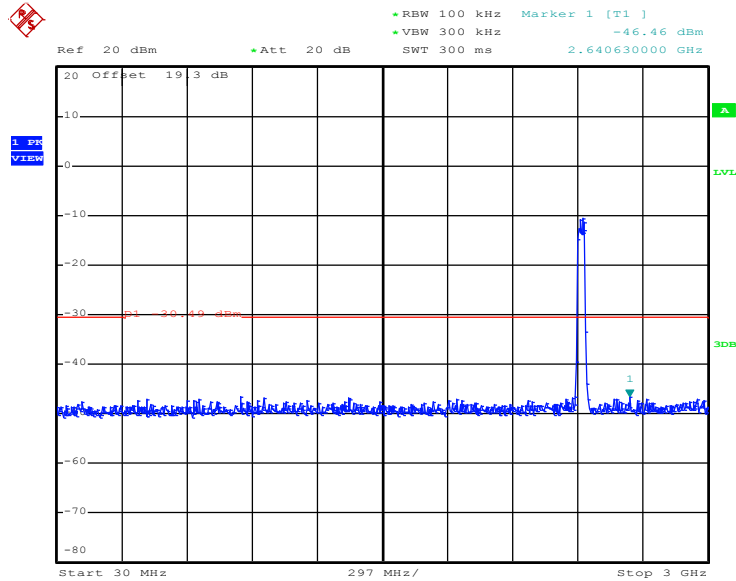
Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz - Chain A



Date: 9.NOV.2011 11:26:10

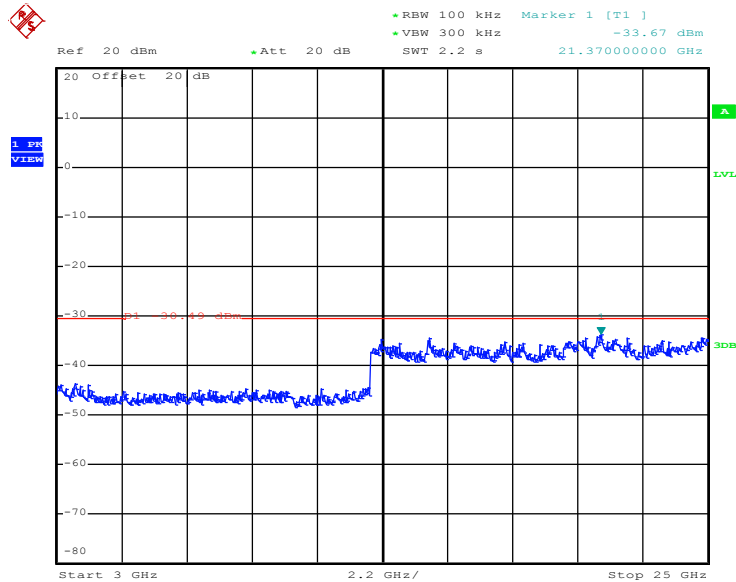


Conducted Spurious Emission Plot between 30MHz ~ 3 GHz - Chain B



Date: 9.NOV.2011 11:39:26

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz - Chain B

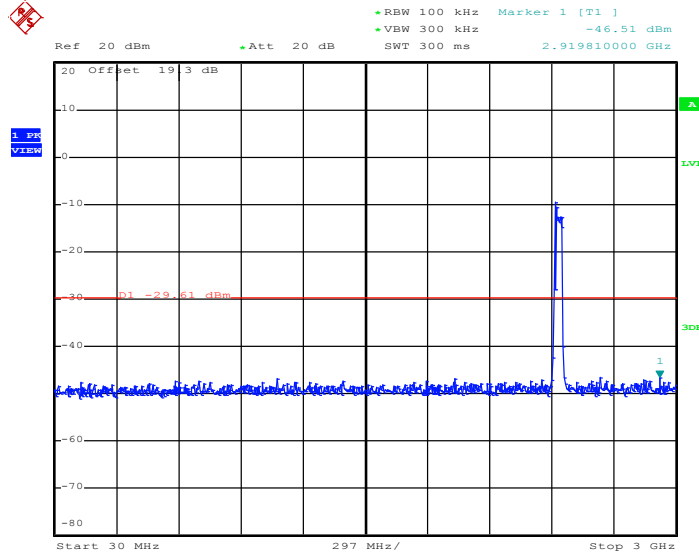


Date: 9.NOV.2011 11:39:43



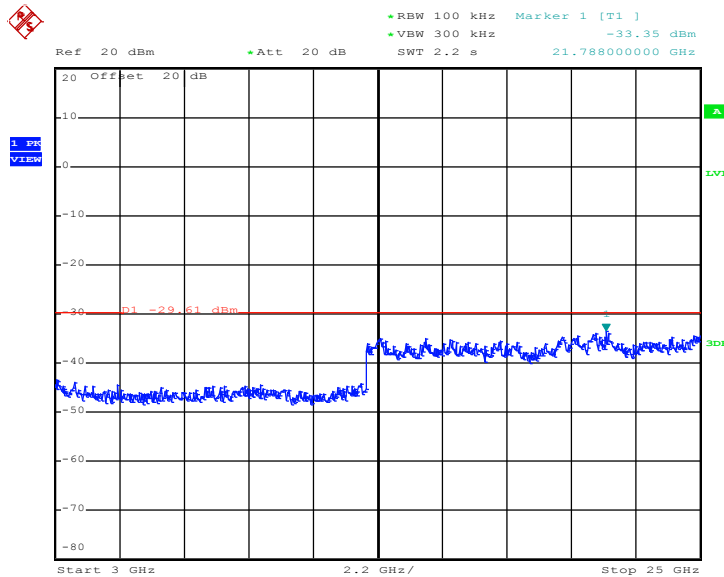
Test Mode :	Mode 11	Temperature :	25~27°C
Test Band :	802.11n (BW 40MHz)	Relative Humidity :	55~57%
Test Channel :	06	Test Engineer :	Hank Yu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz – Chain A



Date: 9.NOV.2011 11:26:37

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz – Chain A

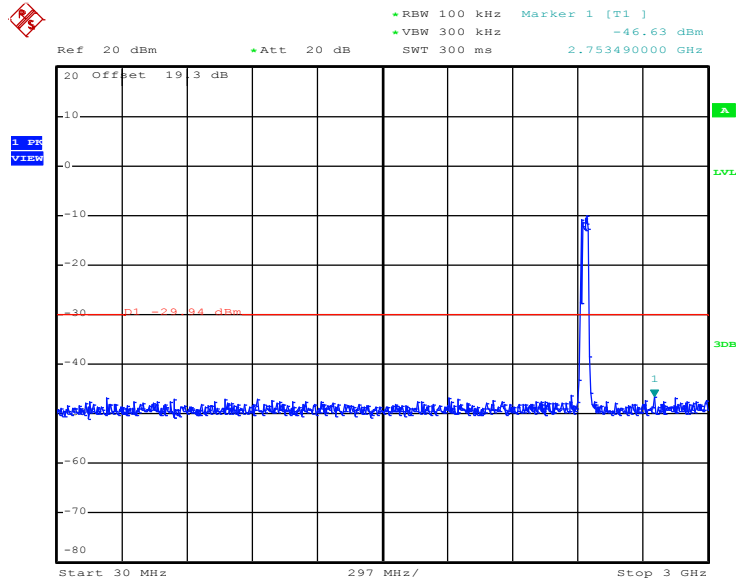


Date: 9.NOV.2011 11:26:54



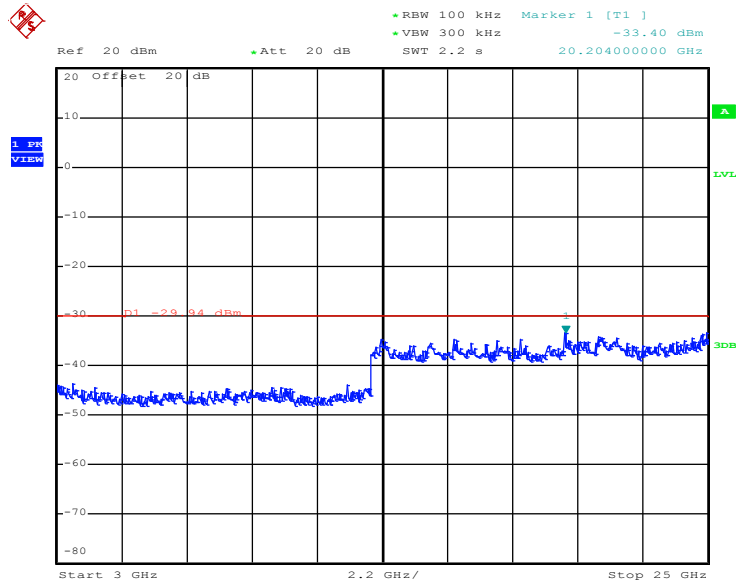


Conducted Spurious Emission Plot between 30MHz ~ 3 GHz – Chain B



Date: 9.NOV.2011 11:36:31

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz – Chain B

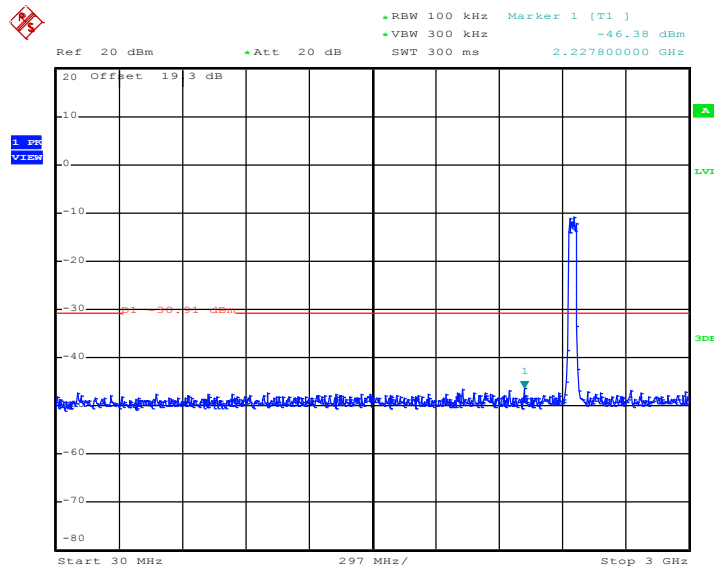


Date: 9.NOV.2011 11:36:48



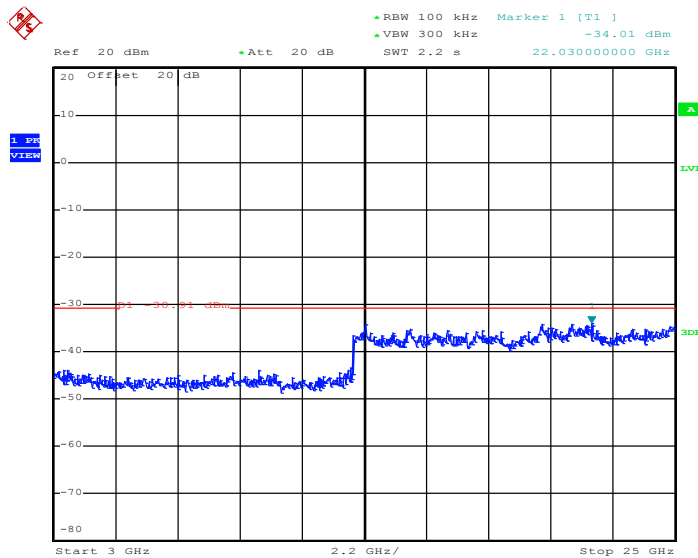
Test Mode :	Mode 12	Temperature :	25~27°C
Test Band :	802.11n (BW 40MHz)	Relative Humidity :	55~57%
Test Channel :	09	Test Engineer :	Hank Yu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz – Chain A



Date: 9.NOV.2011 11:27:20

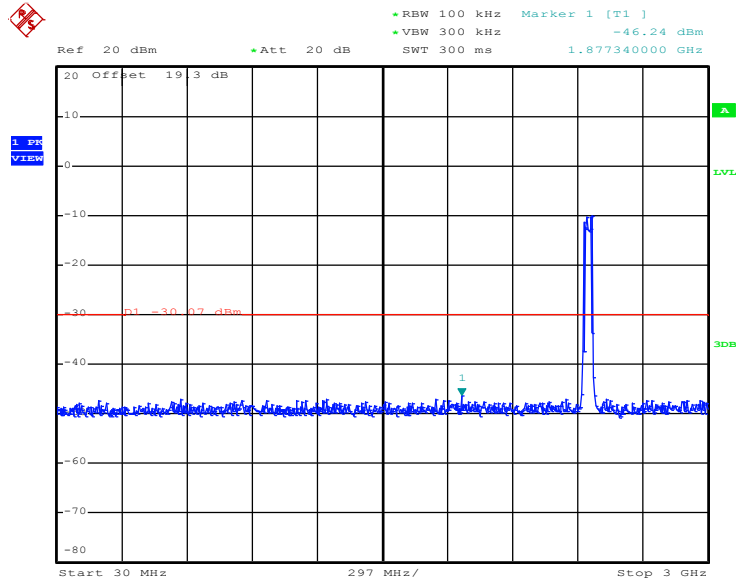
Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz – Chain A



Date: 9.NOV.2011 11:27:37

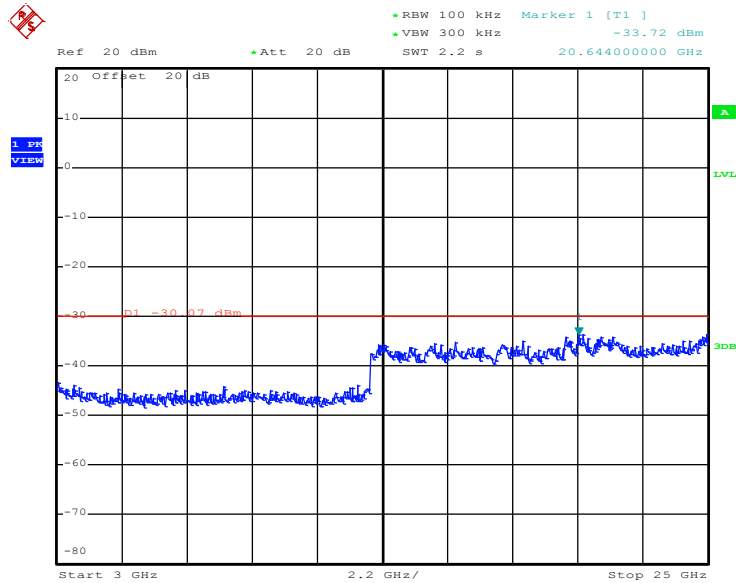


Conducted Spurious Emission Plot between 30MHz ~ 3 GHz – Chain B



Date: 9.NOV.2011 11:31:24

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz – Chain B



Date: 9.NOV.2011 11:31:41

## 3.5 Power Spectral Density Measurement

### 3.5.1 Limit of Power Spectral Density

The peak power spectral density shall not be greater than 8dBm in any 3KHz band at any time interval of continuous transmission.

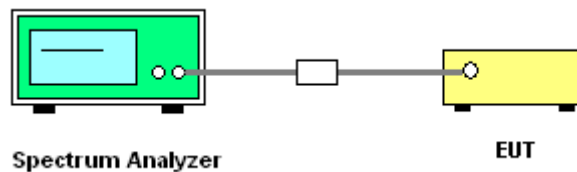
### 3.5.2 Measuring Instruments

See list of measuring instruments of this test report.

### 3.5.3 Test Procedures

1. The test follows FCC KDB Publication No. 558074 (Measurement Guidelines of DTS).
2. The RF output of EUT was connected to the spectrum analyzer by a low loss cable.
3. Take the measured data from spectrum analyzer.

### 3.5.4 Test Setup

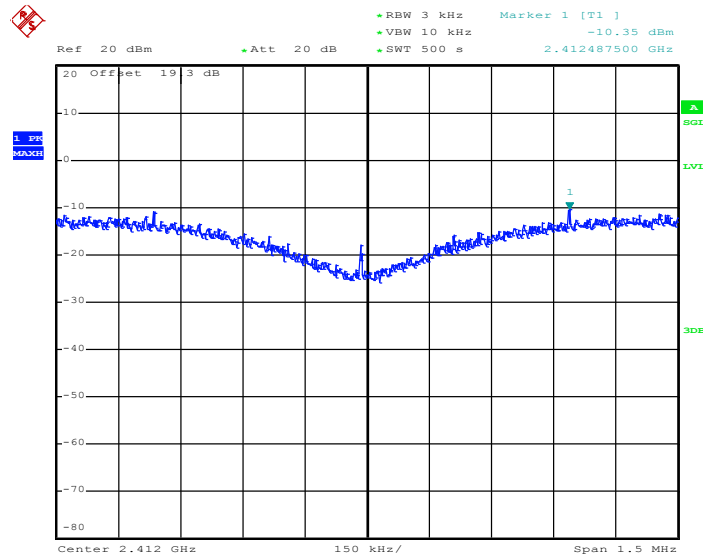


### 3.5.5 Test Result of Power Spectral Density

Test Mode :	Mode 1, 2, 3	Temperature :	25~27°C
Test Engineer :	Hank Yu	Relative Humidity :	55~57%

Channel	Frequency (MHz)	802.11b Measured PSD (dBm)			Max. Limits (dBm)	Pass/Fail
		Chain A+B(A)	Chain A+B(B)	Summation		
01	2412	-10.35	-10.32	-7.32	8	Pass
06	2437	-11.68	-10.48	-8.03	8	Pass
11	2462	-11.00	-10.46	-7.71	8	Pass

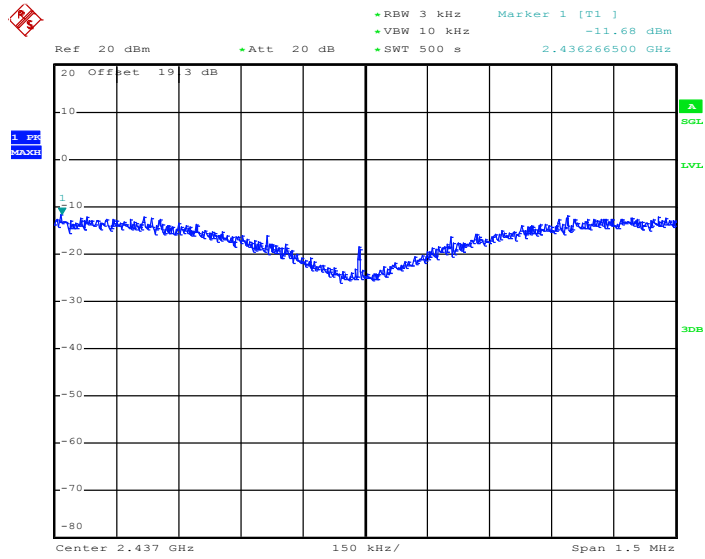
PSD Plot on 802.11b Channel 01 – Chain A



Date: 9.NOV.2011 15:09:41

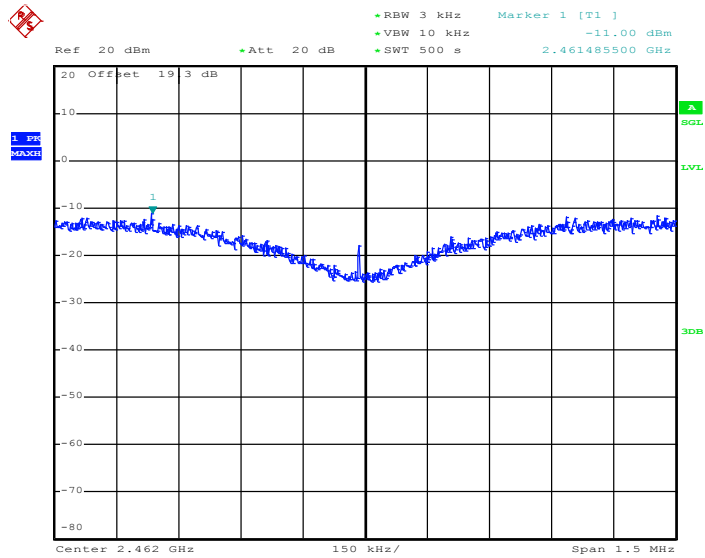


PSD Plot on 802.11b Channel 06 – Chain A



Date: 9.NOV.2011 15:28:56

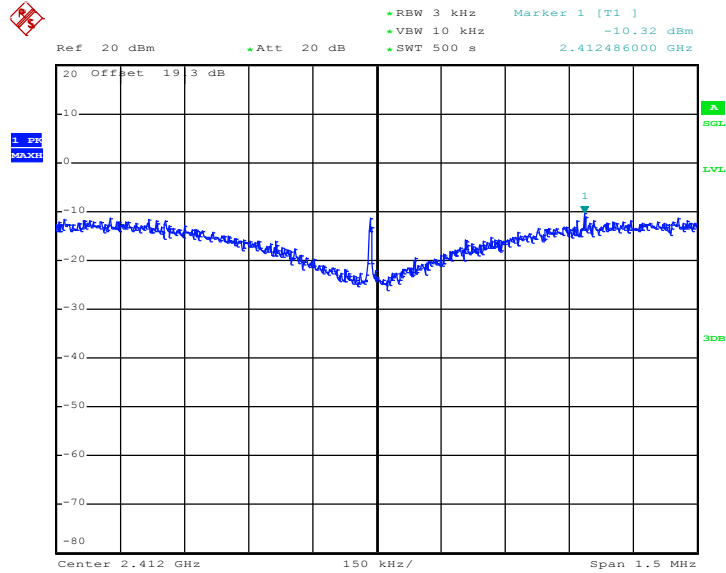
PSD Plot on 802.11b Channel 11 – Chain A



Date: 9.NOV.2011 15:19:02

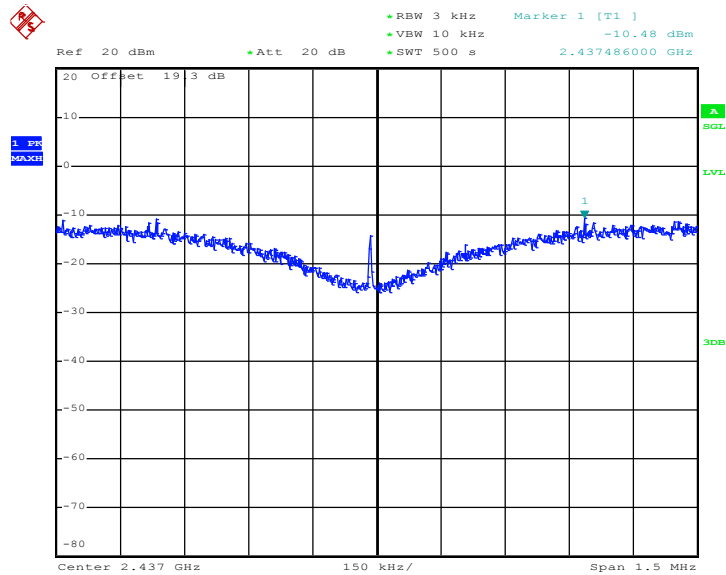


PSD Plot on 802.11b Channel 01 – Chain B



Date: 9.NOV.2011 15:52:00

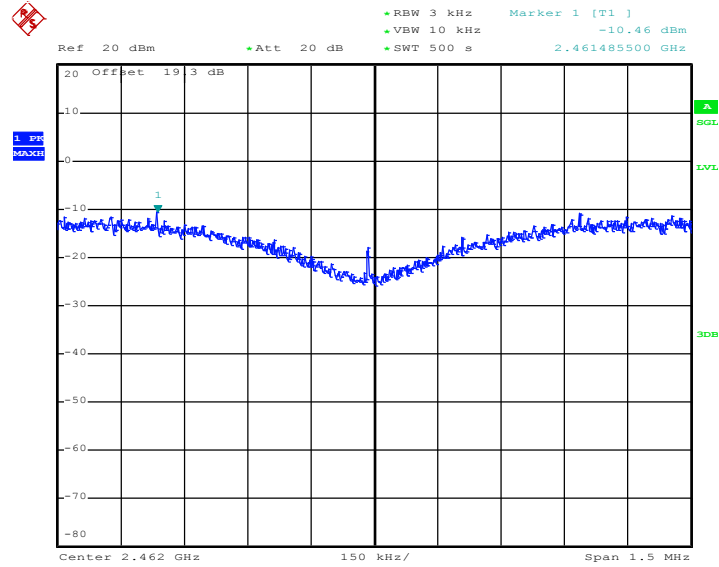
PSD Plot on 802.11b Channel 06 – Chain B



Date: 9.NOV.2011 15:41:33



PSD Plot on 802.11b Channel 11 – Chain B



Date: 9.NOV.2011 16:33:05

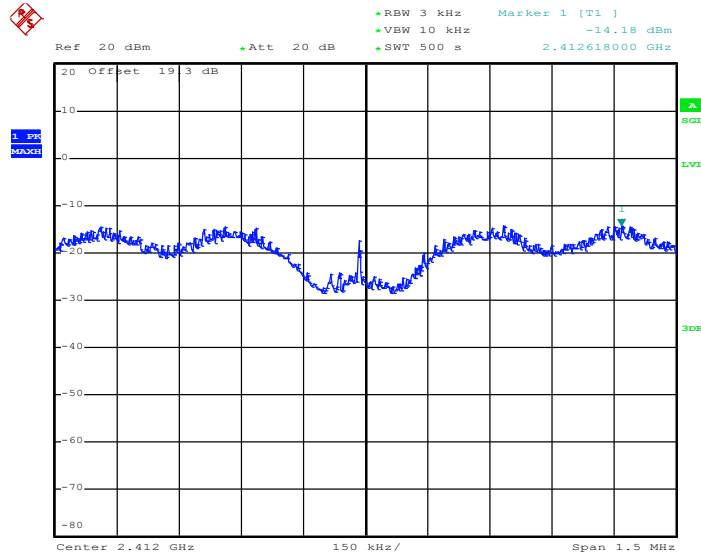




Test Mode :	Mode 4, 5, 6	Temperature :	25~27°C
Test Engineer :	Hank Yu	Relative Humidity :	55~57%

Channel	Frequency (MHz)	802.11g Measured PSD (dBm)			Max. Limits (dBm)	Pass/Fail
		Chain A+B(A)	Chain A+B(B)	Summation		
01	2412	-14.18	-0.62	-0.43	8	Pass
06	2437	-14.51	-7.05	-6.33	8	Pass
11	2462	-14.60	-13.61	-11.07	8	Pass

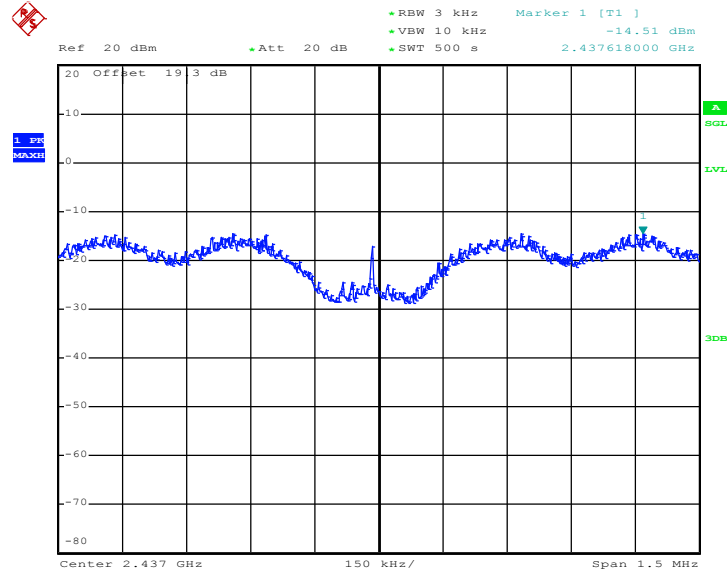
PSD Plot on 802.11g Channel 01 – Chain A



Date: 9.NOV.2011 15:00:41

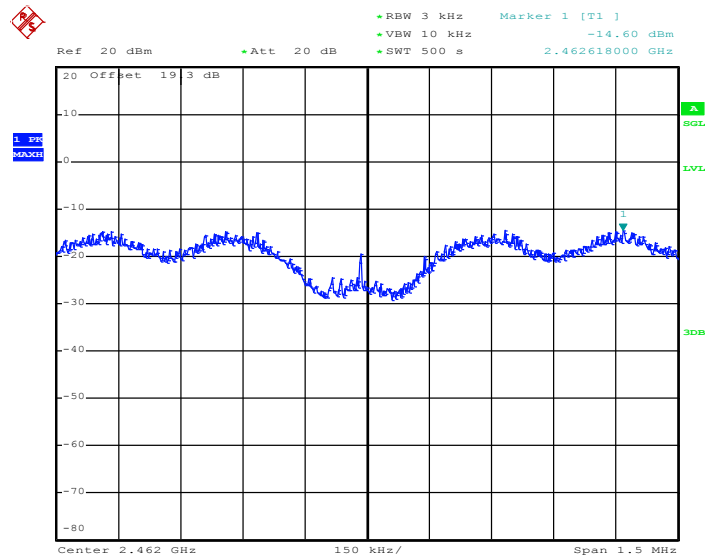


PSD Plot on 802.11g Channel 06 – Chain A



Date: 9.NOV.2011 14:42:45

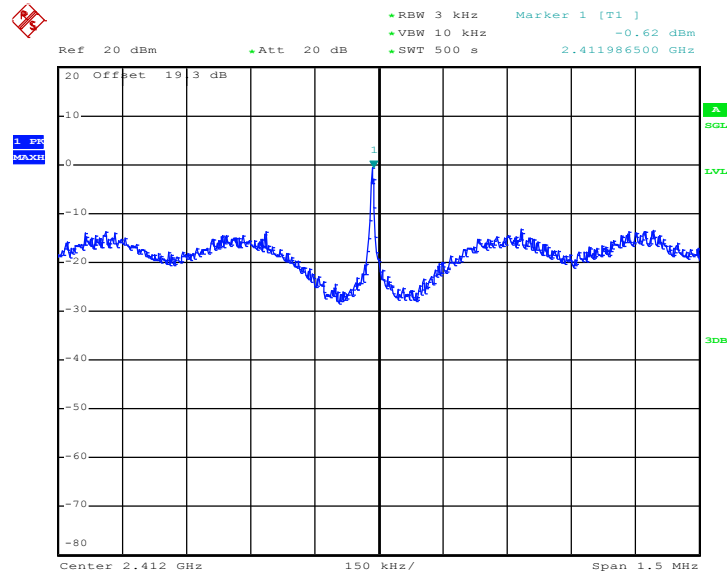
PSD Plot on 802.11g Channel 11 – Chain A



Date: 9.NOV.2011 14:51:44

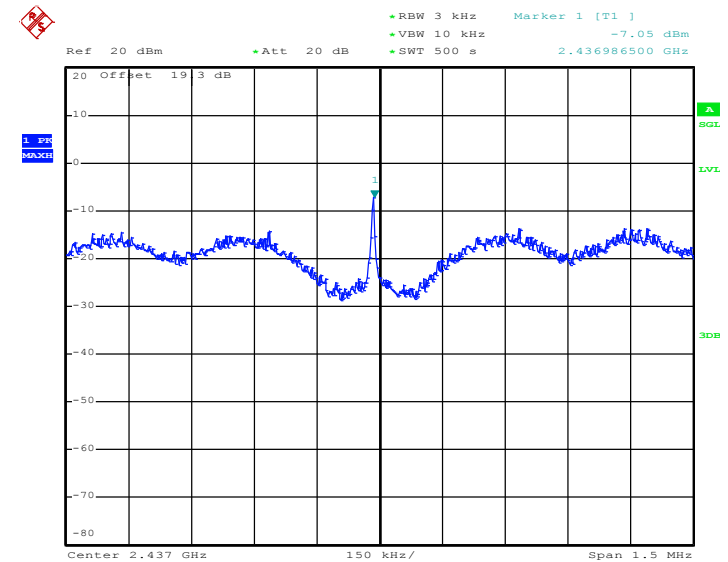


PSD Plot on 802.11g Channel 01 – Chain B



Date: 9.NOV.2011 14:15:36

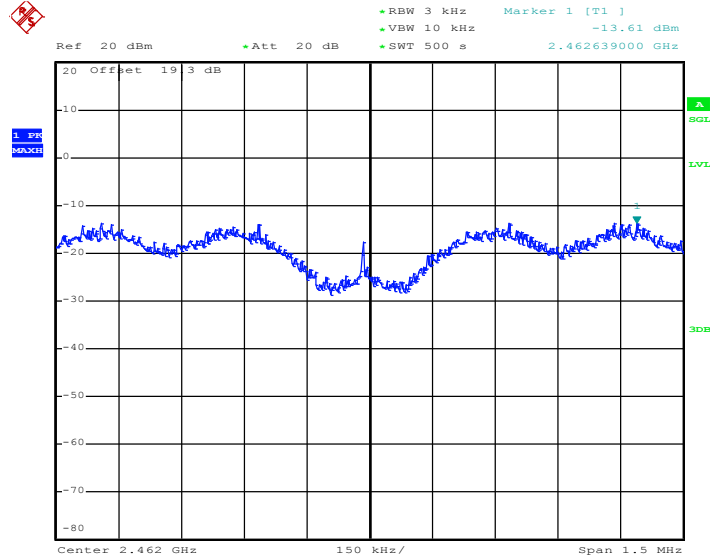
PSD Plot on 802.11g Channel 06 – Chain B



Date: 9.NOV.2011 14:33:41



PSD Plot on 802.11g Channel 11 – Chain B



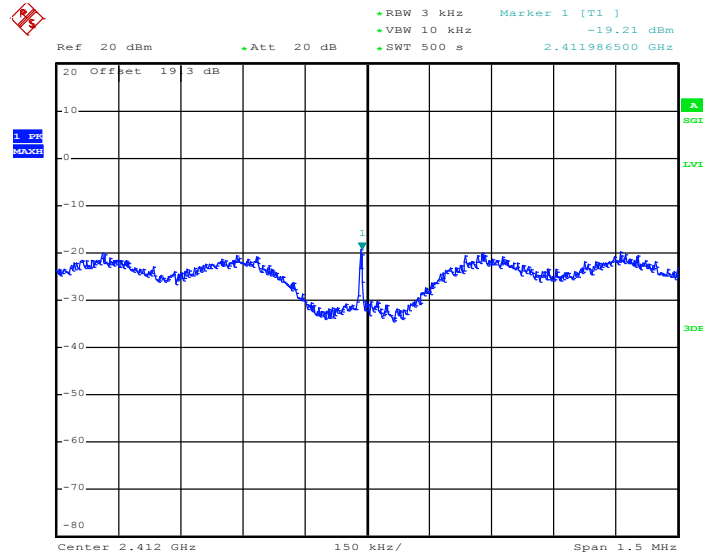
Date: 9.NOV.2011 14:24:34



Test Mode :	Mode 7, 8, 9	Temperature :	25~27°C
Test Engineer :	Hank Yu	Relative Humidity :	55~57%

Channel	Frequency (MHz)	802.11n (BW 20MHz) Measured PSD (dBm)			Max. Limits (dBm)	Pass/Fail
		Chain A+B(A)	Chain A+B(B)	Summation		
01	2412	-19.21	-12.62	-11.76	8	Pass
06	2437	-19.40	-17.98	-15.62	8	Pass
11	2462	-18.96	-17.81	-15.34	8	Pass

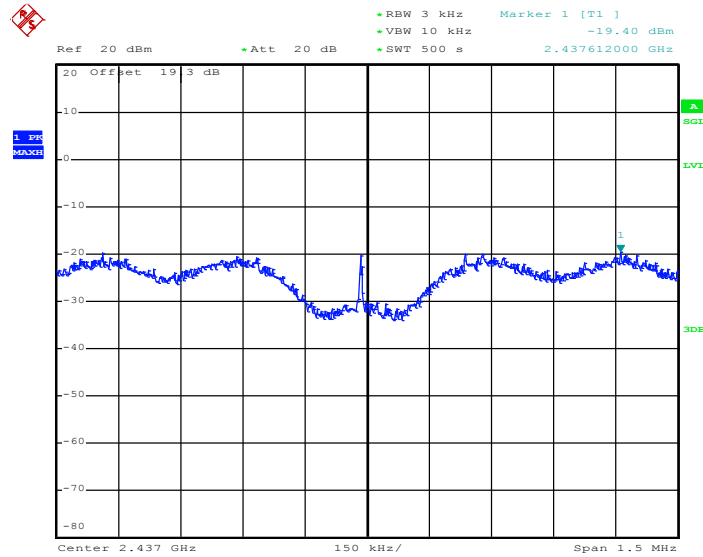
PSD Plot on 802.11n (BW 20MHz) Channel 01 - Chain A



Date: 10.NOV.2011 13:08:13

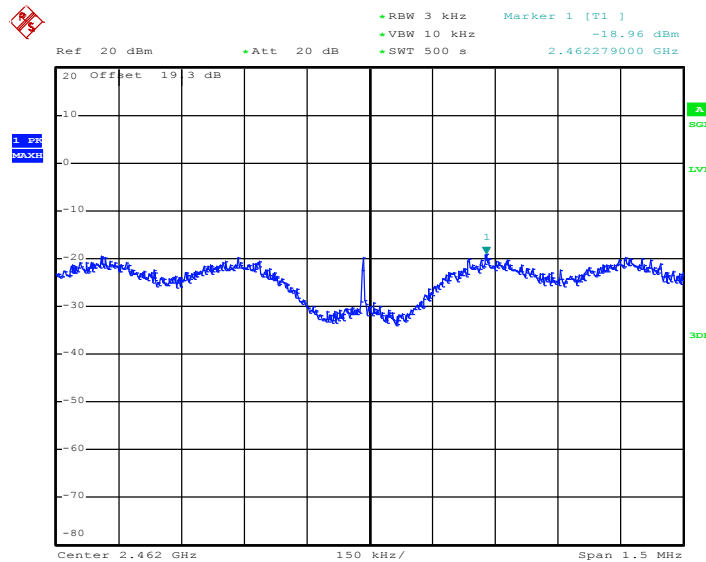


PSD Plot on 802.11n (BW 20MHz) Channel 06 - Chain A



Date: 10.NOV.2011 12:45:04

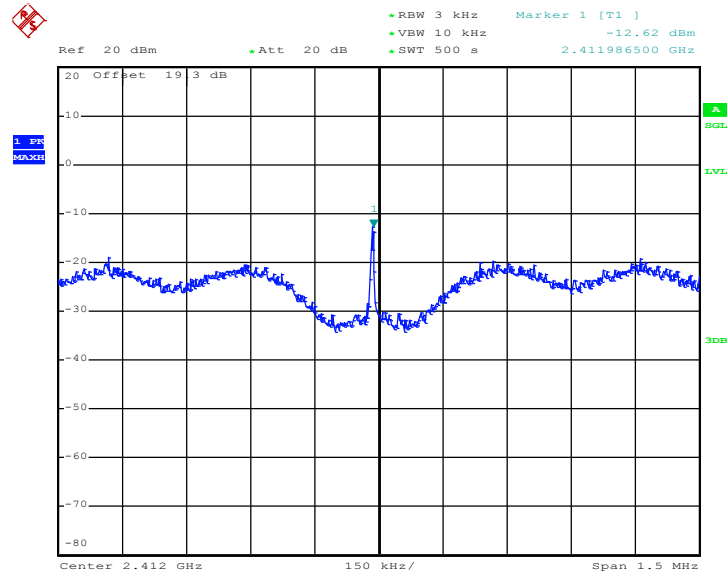
PSD Plot on 802.11n (BW 20MHz) Channel 11 - Chain A



Date: 9.NOV.2011 12:16:54

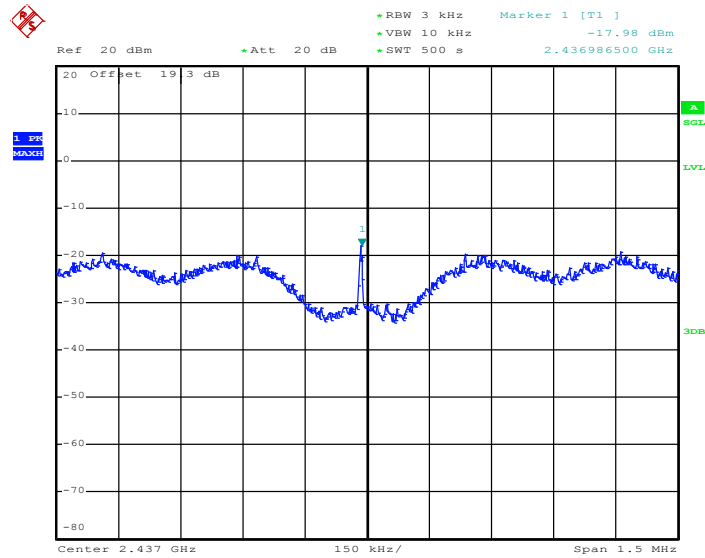


PSD Plot on 802.11n (BW 20MHz) Channel 01 - Chain B



Date: 10.NOV.2011 13:19:00

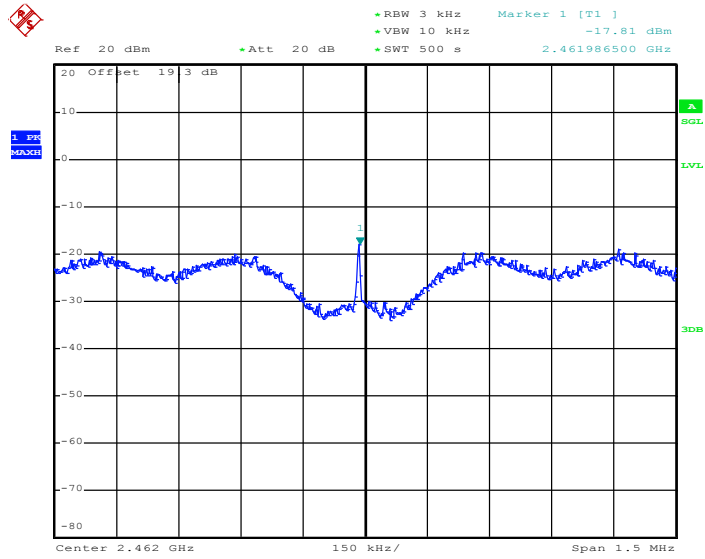
PSD Plot on 802.11n (BW 20MHz) Channel 06 - Chain B



Date: 10.NOV.2011 13:37:10



PSD Plot on 802.11n (BW 20MHz) Channel 11 - Chain B



Date: 10.NOV.2011 13:27:52

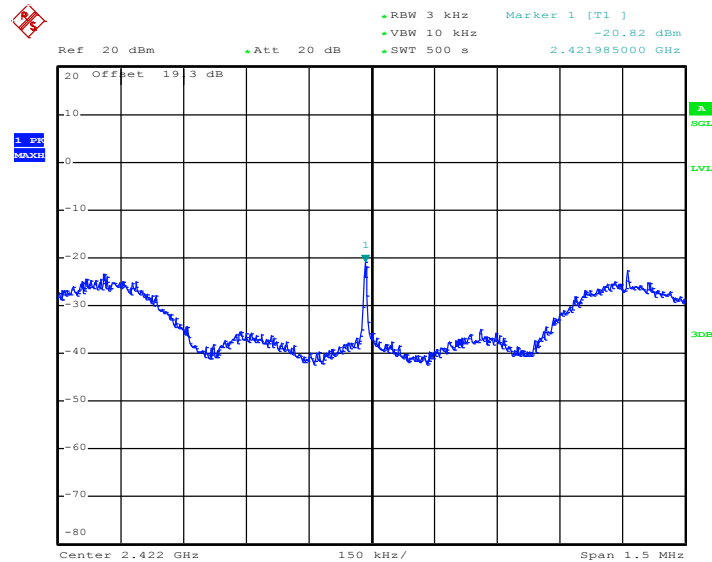




Test Mode :	Mode 10, 11, 12	Temperature :	25~27
Test Engineer :	Hank Yu	Relative Humidity :	55~57

Channel	Frequency (MHz)	802.11n (BW 40MHz) Measured PSD (dBm)			Max. Limits (dBm)	Pass/Fail
		Chain A+B(A)	Chain A+B(B)	Summation		
03	2422	-20.82	-17.59	-15.90	8	Pass
06	2437	-22.41	-15.20	-14.44	8	Pass
09	2452	-21.01	-21.11	-18.05	8	Pass

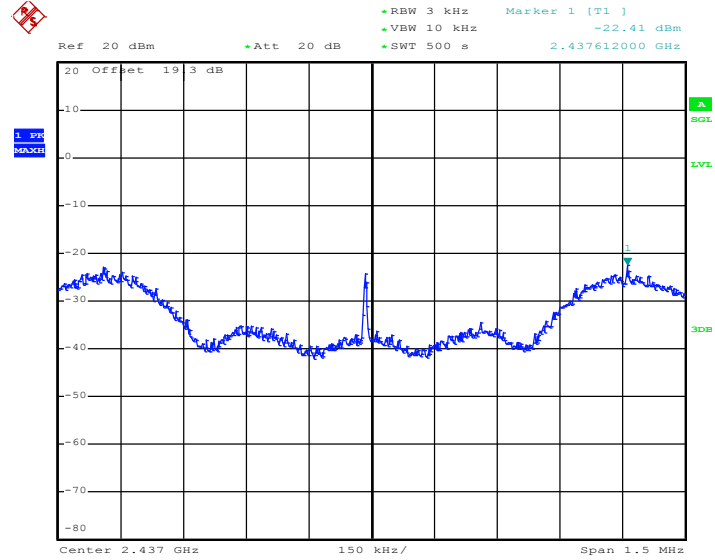
PSD Plot on 802.11n (BW 40MHz) Channel 03 – Chain A



Date: 10.NOV.2011 12:26:37

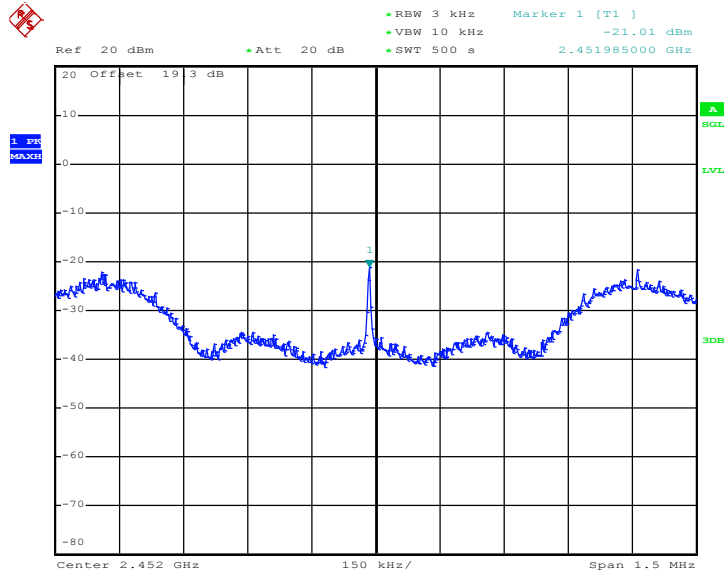


PSD Plot on 802.11n (BW 40MHz) Channel 06– Chain A



Date: 10.NOV.2011 12:35:28

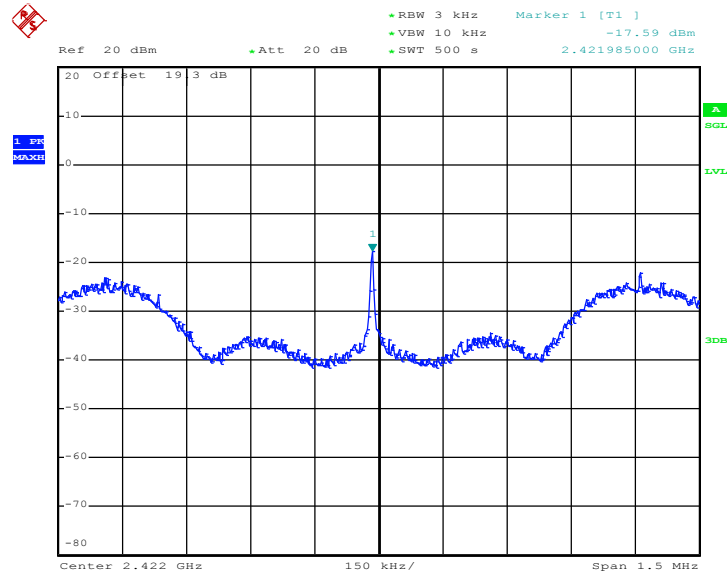
PSD Plot on 802.11n (BW 40MHz) Channel 09– Chain A



Date: 9.NOV.2011 16:42:47

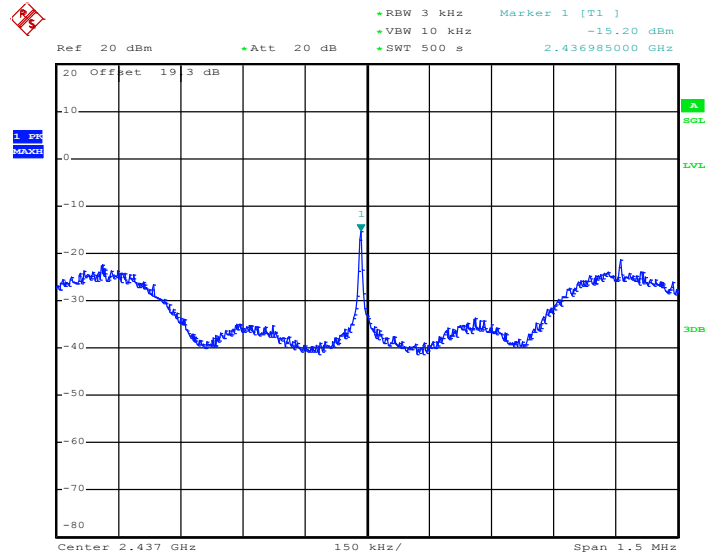


PSD Plot on 802.11n (BW 40MHz) Channel 03 – Chain B



Date: 9.NOV.2011 16:03:35

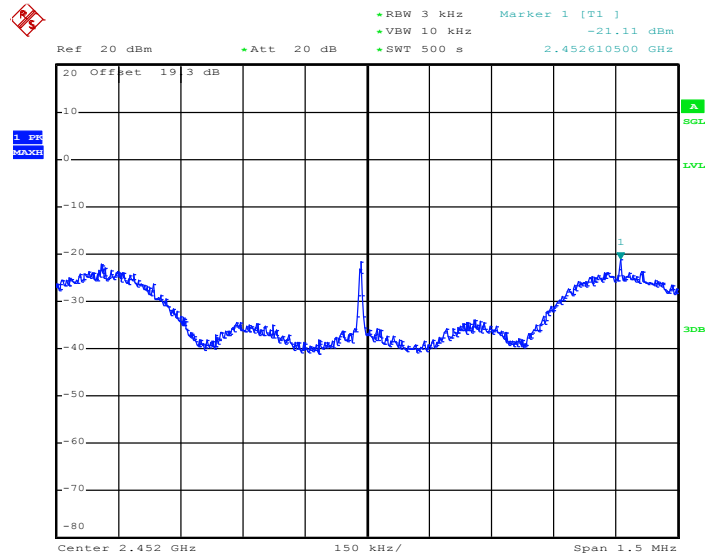
PSD Plot on 802.11n (BW 40MHz) Channel 06 – Chain B



Date: 9.NOV.2011 16:14:43



PSD Plot on 802.11n (BW 40MHz) Channel 09 – Chain B



Date: 9.NOV.2011 16:23:44

### 3.6 AC Conducted Emission Measurement

#### 3.6.1 Limit of AC Conducted Emission

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

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi-Peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

\*Decreases with the logarithm of the frequency.

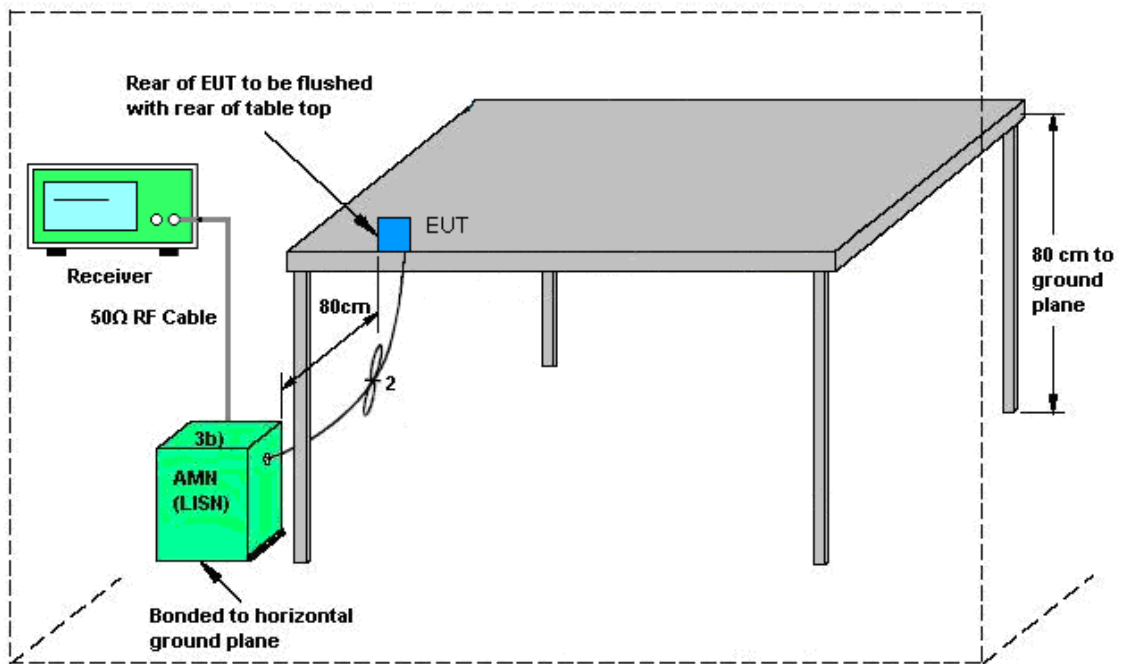
#### 3.6.2 Measuring Instruments

See list of measuring instruments of this test report.

#### 3.6.3 Test Procedures

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

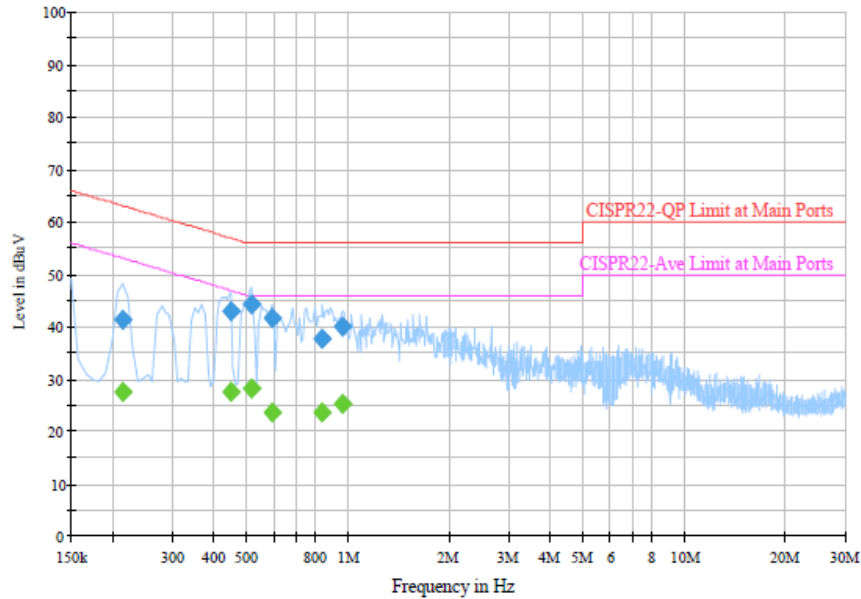
### 3.6.4 Test Setup



AMN = Artificial mains network (LISN)  
AE = Associated equipment  
EUT = Equipment under test  
ISN = Impedance stabilization network

### 3.6.5 Test Result of AC Conducted Emission

Test Mode :	Mode 1	Temperature :	21~23°C
Test Engineer :	Kai-Chun Chu	Relative Humidity :	40~42%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	WLAN Link + LAN Link + USB Dongle + RS232 Load + Adapter 1		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



#### Final Result 1

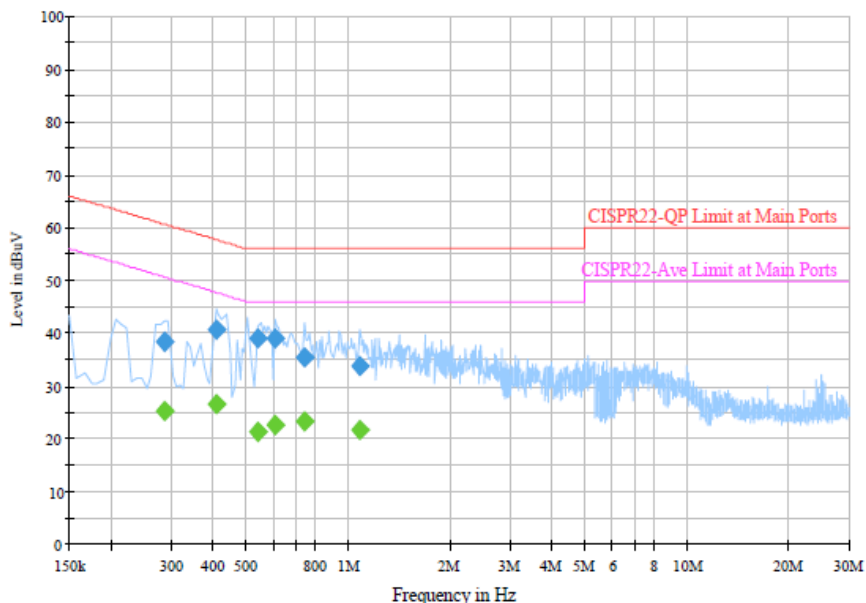
Frequency (MHz)	QuasiPeak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.214000	41.3	Off	L1	19.4	21.7	63.0
0.446000	43.0	Off	L1	19.4	13.9	56.9
0.518000	44.4	Off	L1	19.4	11.6	56.0
0.590000	41.6	Off	L1	19.4	14.4	56.0
0.838000	37.6	Off	L1	19.5	18.4	56.0
0.958000	40.1	Off	L1	19.4	15.9	56.0

#### Final Result 2

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.214000	27.5	Off	L1	19.4	25.5	53.0
0.446000	27.4	Off	L1	19.4	19.5	46.9
0.518000	28.1	Off	L1	19.4	17.9	46.0
0.590000	23.5	Off	L1	19.4	22.5	46.0
0.838000	23.7	Off	L1	19.5	22.3	46.0
0.958000	25.2	Off	L1	19.4	20.8	46.0



Test Mode :	Mode 1	Temperature :	21~23°C
Test Engineer :	Kai-Chun Chu	Relative Humidity :	40~42%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	WLAN Link + LAN Link + USB Dongle + RS232 Load + Adapter 1		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.286000	38.2	Off	N	19.4	22.4	60.6
0.406000	40.8	Off	N	19.5	16.9	57.7
0.542000	38.9	Off	N	19.4	17.1	56.0
0.606000	39.2	Off	N	19.4	16.8	56.0
0.742000	35.4	Off	N	19.4	20.6	56.0
1.078000	33.8	Off	N	19.5	22.2	56.0

Final Result 2

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.286000	25.1	Off	N	19.4	25.5	50.6
0.406000	26.6	Off	N	19.5	21.1	47.7
0.542000	21.4	Off	N	19.4	24.6	46.0
0.606000	22.5	Off	N	19.4	23.5	46.0
0.742000	23.2	Off	N	19.4	22.8	46.0
1.078000	21.8	Off	N	19.5	24.2	46.0



### 3.7 Radiated Emission Measurement

#### 3.7.1 Limit of Radiated Emission

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

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

#### 3.7.2 Measuring Instruments

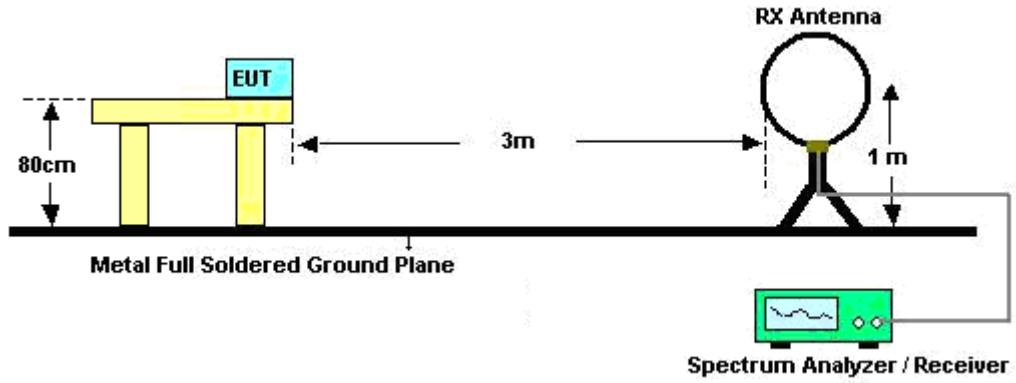
See list of measuring instruments of this test report.

#### 3.7.3 Test Procedures

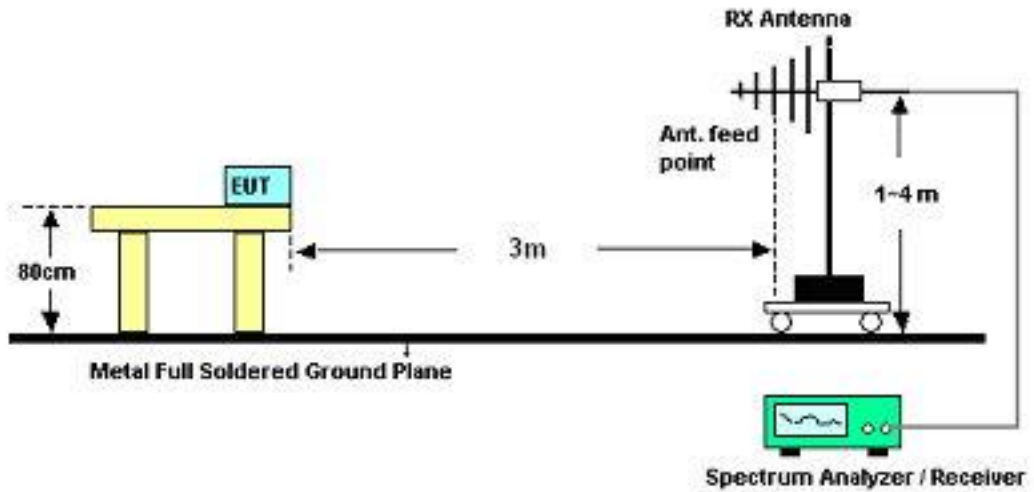
1. The testing follows the guidelines in FCC KDB Publication No. 558074 (Measurement Guidelines of DTS).
2. Use the following spectrum analyzer settings:
  - (1) Span = wide enough to fully capture the emission being measured; RBW = 1 MHz for  $f \geq 1$  GHz, 100 KHz for  $f < 1$  GHz; VBW  $\geq$ 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

### 3.7.4 Test Setup

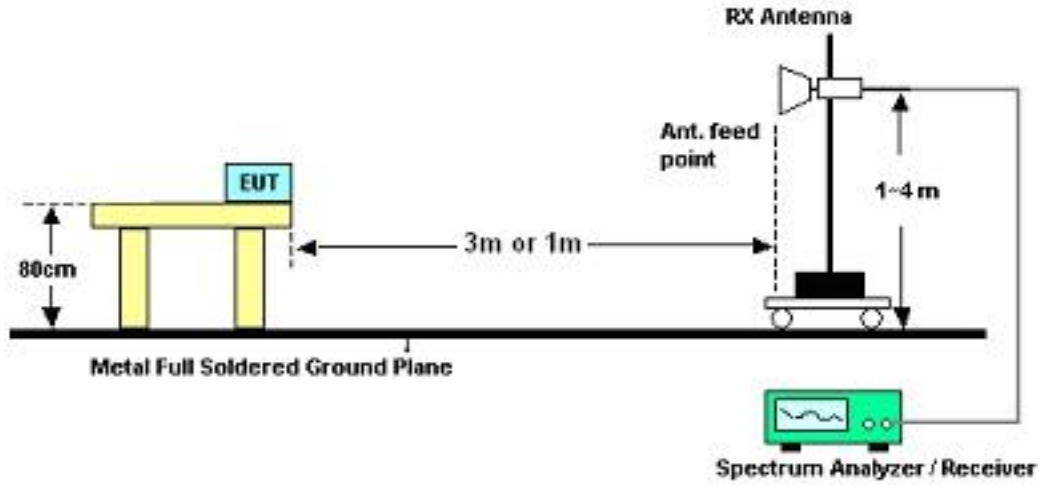
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



### 3.7.5 Test Results of Radiated Emissions (9 KHz ~ 30 MHz)

Test Engineer :	Wii Chang	Temperature :	23~28°C	
		Relative Humidity :	53~58%	
Frequency (MHz)	Level (dBuV)	Over Limit (dB)	Limit Line (dBuV)	Remark
-	-	-	-	See Note

**Note:**

The amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

Distance extrapolation factor = 40 log (specific distance / test distance) (dB);

Limit line = specific limits (dBuV) + distance extrapolation factor.



3.7.6 Test Result of Radiated Emission (30 MHz ~ 10<sup>th</sup> Harmonic)

Test Mode :	Mode 1	Temperature :	23~28°C
Test Channel :	01	Relative Humidity :	53~58%
Test Engineer :	Wii Chang	Polarization :	Horizontal
Remark :	2412 MHz is Fundamental Signals which can be ignored.		

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
33.24	22.63	-17.37	40	36.82	16.63	0.72	31.54	-	-	Peak
204.96	31.77	-11.73	43.5	53.26	8.49	1.48	31.46	-	-	Peak
224.4	26.07	-19.93	46	46.16	9.84	1.56	31.49	-	-	Peak
339.9	36.74	-9.26	46	52.98	13.19	1.87	31.3	100	32	Peak
374.9	32.88	-13.12	46	48.03	14.13	1.96	31.24	-	-	Peak
624.8	29.85	-16.15	46	39.35	18.82	2.5	30.82	-	-	Peak
2382.77	44.74	-9.26	54	42.24	32	4.58	34.08	102	269	Average
2382.77	55.59	-18.41	74	53.09	32	4.58	34.08	102	269	Peak
2412	101.65	-	-	99.11	32.03	4.59	34.08	102	269	Average
2412	105.59	-	-	103.05	32.03	4.59	34.08	102	269	Peak
2498	42.5	-11.5	54	39.84	32.1	4.64	34.08	102	269	Average
2498	54.17	-19.83	74	51.51	32.1	4.64	34.08	102	269	Peak



<b>Test Mode :</b>	Mode 1	<b>Temperature :</b>	23~28°C
<b>Test Channel :</b>	01	<b>Relative Humidity :</b>	53~58%
<b>Test Engineer :</b>	Wii Chang	<b>Polarization :</b>	Vertical
<b>Remark :</b>	2412 MHz is Fundamental Signals which can be ignored.		

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
32.97	36.88	-3.12	40	51.07	16.63	0.72	31.54	100	54	Peak
45.39	32.23	-7.77	40	53.08	9.93	0.78	31.56	-	-	Peak
204.42	32.28	-11.22	43.5	53.77	8.49	1.48	31.46	-	-	Peak
339.9	30.24	-15.76	46	46.48	13.19	1.87	31.3	-	-	Peak
374.9	26.85	-19.15	46	42	14.13	1.96	31.24	-	-	Peak
533.1	31.43	-14.57	46	42.5	17.62	2.3	30.99	-	-	Peak
2386	50.85	-3.15	54	48.33	32.02	4.58	34.08	111	324	Average
2386	61.41	-12.59	74	58.89	32.02	4.58	34.08	111	324	Peak
2412	108.93	-	-	106.39	32.03	4.59	34.08	111	324	Average
2412	113.48	-	-	110.94	32.03	4.59	34.08	111	324	Peak
2484	44.97	-9.03	54	42.32	32.09	4.64	34.08	111	324	Average
2484	55.01	-18.99	74	52.36	32.09	4.64	34.08	111	324	Peak



Test Mode :	Mode 2	Temperature :	23~28°C
Test Channel :	06	Relative Humidity :	53~58%
Test Engineer :	Wii Chang	Polarization :	Horizontal
Remark :	2437 MHz is Fundamental Signals which can be ignored.		

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
32.97	22.83	-17.17	40	37.02	16.63	0.72	31.54	-	-	Peak
203.88	29.94	-13.56	43.5	51.5	8.42	1.48	31.46	-	-	Peak
237.9	26.07	-19.93	46	45.18	10.79	1.61	31.51	-	-	Peak
339.9	36.46	-9.54	46	52.7	13.19	1.87	31.3	100	45	Peak
374.9	32.59	-13.41	46	47.74	14.13	1.96	31.24	-	-	Peak
624.8	30.05	-15.95	46	39.55	18.82	2.5	30.82	-	-	Peak
2332	42.93	-11.07	54	40.51	31.96	4.55	34.09	100	271	Average
2332	54.59	-19.41	74	52.17	31.96	4.55	34.09	100	271	Peak
2437	99.68	-	-	97.09	32.06	4.61	34.08	100	271	Average
2437	104.46	-	-	101.87	32.06	4.61	34.08	100	271	Peak
2496	42.59	-11.41	54	39.93	32.1	4.64	34.08	100	271	Average
2496	54.17	-19.83	74	51.51	32.1	4.64	34.08	100	271	Peak



Test Mode :	Mode 2	Temperature :	23~28°C
Test Channel :	06	Relative Humidity :	53~58%
Test Engineer :	Wii Chang	Polarization :	Vertical
Remark :	2437 MHz is Fundamental Signals which can be ignored.		

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
32.97	35.82	-4.18	40	50.01	16.63	0.72	31.54	100	23	Peak
50.79	31.81	-8.19	40	54.84	7.73	0.81	31.57	-	-	Peak
203.61	32.41	-11.09	43.5	53.97	8.42	1.48	31.46	-	-	Peak
339.9	29.77	-16.23	46	46.01	13.19	1.87	31.3	-	-	Peak
374.9	26.37	-19.63	46	41.52	14.13	1.96	31.24	-	-	Peak
533.1	31.71	-14.29	46	42.78	17.62	2.3	30.99	-	-	Peak
2368	44.23	-9.77	54	41.75	31.99	4.57	34.08	100	330	Average
2368	55.6	-18.4	74	53.12	31.99	4.57	34.08	100	330	Peak
2437	108.9	-	-	106.31	32.06	4.61	34.08	100	330	Average
2437	113.11	-	-	110.52	32.06	4.61	34.08	100	330	Peak
2494	44	-10	54	41.34	32.1	4.64	34.08	100	330	Average
2494	55.32	-18.68	74	52.66	32.1	4.64	34.08	100	330	Peak



<b>Test Mode :</b>	Mode 3	<b>Temperature :</b>	23~28°C
<b>Test Channel :</b>	11	<b>Relative Humidity :</b>	53~58%
<b>Test Engineer :</b>	Wii Chang	<b>Polarization :</b>	Horizontal
<b>Remark :</b>	2462 MHz is Fundamental Signals which can be ignored.		

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
32.97	21.36	-18.64	40	35.55	16.63	0.72	31.54	-	-	Peak
203.61	29.8	-13.7	43.5	51.36	8.42	1.48	31.46	-	-	Peak
237.36	25.39	-20.61	46	44.5	10.79	1.61	31.51	-	-	Peak
339.9	36.34	-9.66	46	52.58	13.19	1.87	31.3	100	13	Peak
374.9	32.31	-13.69	46	47.46	14.13	1.96	31.24	-	-	Peak
533.1	29.11	-16.89	46	40.18	17.62	2.3	30.99	-	-	Peak
2368	43.21	-10.79	54	40.73	31.99	4.57	34.08	100	280	Average
2368	55.2	-18.8	74	52.72	31.99	4.57	34.08	100	280	Peak
2462	99.58	-	-	96.97	32.07	4.62	34.08	100	280	Average
2462	103.94	-	-	101.33	32.07	4.62	34.08	100	280	Peak
2487.46	44.39	-9.61	54	41.74	32.09	4.64	34.08	100	280	Average
2487.46	56.56	-17.44	74	53.91	32.09	4.64	34.08	100	280	Peak





<b>Test Mode :</b>	Mode 3	<b>Temperature :</b>	23~28°C
<b>Test Channel :</b>	11	<b>Relative Humidity :</b>	53~58%
<b>Test Engineer :</b>	Wii Chang	<b>Polarization :</b>	Vertical
<b>Remark :</b>	2462 MHz is Fundamental Signals which can be ignored.		

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
32.97	36.92	-3.08	40	51.11	16.63	0.72	31.54	100	54	Peak
45.12	31.08	-8.92	40	51.93	9.93	0.78	31.56	-	-	Peak
203.34	32.33	-11.17	43.5	53.89	8.42	1.48	31.46	-	-	Peak
339.9	29.35	-16.65	46	45.59	13.19	1.87	31.3	-	-	Peak
374.9	26.04	-19.96	46	41.19	14.13	1.96	31.24	-	-	Peak
624.8	33.33	-12.67	46	42.83	18.82	2.5	30.82	-	-	Peak
2376	45.07	-8.93	54	42.58	32	4.57	34.08	100	360	Average
2376	56.07	-17.93	74	53.58	32	4.57	34.08	100	360	Peak
2462	108.99	-	-	106.38	32.07	4.62	34.08	100	360	Average
2462	113.42	-	-	110.81	32.07	4.62	34.08	100	360	Peak
2488.03	50.98	-3.02	54	48.32	32.1	4.64	34.08	100	360	Average
2488.03	61.5	-12.5	74	58.84	32.1	4.64	34.08	100	360	Peak



<b>Test Mode :</b>	Mode 4	<b>Temperature :</b>	23~28°C
<b>Test Channel :</b>	11	<b>Relative Humidity :</b>	53~58%
<b>Test Engineer :</b>	Wii Chang	<b>Polarization :</b>	Horizontal
<b>Remark :</b>	2462 MHz is Fundamental Signals which can be ignored.		

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
32.97	21.92	-18.08	40	36.11	16.63	0.72	31.54	-	-	Peak
191.73	27.7	-15.8	43.5	49.42	8.31	1.44	31.47	-	-	Peak
202.8	29.12	-14.38	43.5	50.75	8.35	1.47	31.45	-	-	Peak
332.9	29.89	-16.11	46	46.31	13.02	1.86	31.3	-	-	Peak
339.9	35.93	-10.07	46	52.17	13.19	1.87	31.3	100	65	Peak
374.9	32.2	-13.8	46	47.35	14.13	1.96	31.24	-	-	Peak
2336	42.69	-11.31	54	40.25	31.98	4.55	34.09	126	277	Average
2336	54.55	-19.45	74	52.11	31.98	4.55	34.09	126	277	Peak
2462	97.66	-	-	95.05	32.07	4.62	34.08	126	277	Average
2462	101.49	-	-	98.88	32.07	4.62	34.08	126	277	Peak
2488.22	44.46	-9.54	54	41.8	32.1	4.64	34.08	126	277	Average
2488.22	55.59	-18.41	74	52.93	32.1	4.64	34.08	126	277	Peak
4924	47.34	-26.66	74	65.23	33.81	6.56	58.26	100	0	Peak



<b>Test Mode :</b>	Mode 4	<b>Temperature :</b>	23~28°C
<b>Test Channel :</b>	11	<b>Relative Humidity :</b>	53~58%
<b>Test Engineer :</b>	Wii Chang	<b>Polarization :</b>	Vertical
<b>Remark :</b>	2462 MHz is Fundamental Signals which can be ignored.		

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
32.97	36.56	-3.44	40	50.75	16.63	0.72	31.54	100	36	Peak
48.63	32.25	-7.75	40	54.41	8.61	0.8	31.57	-	-	Peak
107.22	24	-19.5	43.5	44.44	9.96	1.13	31.53	-	-	Peak
339.9	29.06	-16.94	46	45.3	13.19	1.87	31.3	-	-	Peak
374.9	26.15	-19.85	46	41.3	14.13	1.96	31.24	-	-	Peak
533.1	31.8	-14.2	46	42.87	17.62	2.3	30.99	-	-	Peak
2384	43.59	-10.41	54	41.09	32	4.58	34.08	114	4	Average
2384	56.31	-17.69	74	53.81	32	4.58	34.08	114	4	Peak
2462	105.06	-	-	102.45	32.07	4.62	34.08	114	4	Average
2462	108.9	-	-	106.29	32.07	4.62	34.08	114	4	Peak
2488.22	52.7	-1.3	54	50.04	32.1	4.64	34.08	114	4	Average
2488.22	61.01	-12.99	74	58.35	32.1	4.64	34.08	114	4	Peak
4924	48.05	-25.95	74	65.94	33.81	6.56	58.26	100	0	Peak



<b>Test Mode :</b>	Mode 5	<b>Temperature :</b>	23~28°C
<b>Test Channel :</b>	11	<b>Relative Humidity :</b>	53~58%
<b>Test Engineer :</b>	Wii Chang	<b>Polarization :</b>	Horizontal
<b>Remark :</b>	2462 MHz is Fundamental Signals which can be ignored.		

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
32.97	22.3	-17.7	40	36.49	16.63	0.72	31.54	-	-	Peak
191.46	27.51	-15.99	43.5	49.22	8.33	1.44	31.48	-	-	Peak
202.8	29.98	-13.52	43.5	51.61	8.35	1.47	31.45	-	-	Peak
339.9	36.09	-9.91	46	52.33	13.19	1.87	31.3	100	87	Peak
374.9	31.81	-14.19	46	46.96	14.13	1.96	31.24	-	-	Peak
624.8	29.44	-16.56	46	38.94	18.82	2.5	30.82	-	-	Peak
2324	43	-11	54	40.6	31.96	4.53	34.09	144	320	Average
2324	55.18	-18.82	74	52.78	31.96	4.53	34.09	144	320	Peak
2462	96.2	-	-	93.59	32.07	4.62	34.08	144	320	Average
2462	100	-	-	97.39	32.07	4.62	34.08	144	320	Peak
2487.08	44.2	-9.8	54	41.55	32.09	4.64	34.08	144	320	Average
2487.08	55.74	-18.26	74	53.09	32.09	4.64	34.08	144	320	Peak
4924	50.44	-23.56	74	68.33	33.81	6.56	58.26	100	0	Peak



<b>Test Mode :</b>	Mode 5	<b>Temperature :</b>	23~28°C
<b>Test Channel :</b>	11	<b>Relative Humidity :</b>	53~58%
<b>Test Engineer :</b>	Wii Chang	<b>Polarization :</b>	Vertical
<b>Remark :</b>	2462 MHz is Fundamental Signals which can be ignored.		

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
32.97	36.48	-3.52	40	50.67	16.63	0.72	31.54	100	33	Peak
40.26	34.41	-5.59	40	52.5	12.68	0.75	31.52	-	-	Peak
202.8	32.3	-11.2	43.5	53.93	8.35	1.47	31.45	-	-	Peak
339.9	30.02	-15.98	46	46.26	13.19	1.87	31.3	-	-	Peak
374.9	25.79	-20.21	46	40.94	14.13	1.96	31.24	-	-	Peak
533.1	31.84	-14.16	46	42.91	17.62	2.3	30.99	-	-	Peak
2390	43.92	-10.08	54	41.4	32.02	4.58	34.08	119	4	Average
2390	55.4	-18.6	74	52.88	32.02	4.58	34.08	119	4	Peak
2462	106.12	-	-	103.51	32.07	4.62	34.08	119	4	Average
2462	110.13	-	-	107.52	32.07	4.62	34.08	119	4	Peak
2483.5	50.56	-3.44	54	47.91	32.09	4.64	34.08	119	4	Average
2483.5	59.98	-14.02	74	57.33	32.09	4.64	34.08	119	4	Peak
4924	50.07	-23.93	74	67.96	33.81	6.56	58.26	100	0	Peak



<b>Test Mode :</b>	Mode 6	<b>Temperature :</b>	23~28°C
<b>Test Channel :</b>	01	<b>Relative Humidity :</b>	53~58%
<b>Test Engineer :</b>	Wii Chang	<b>Polarization :</b>	Horizontal
<b>Remark :</b>	2412 MHz is Fundamental Signals which can be ignored.		

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
32.97	21.78	-18.22	40	35.97	16.63	0.72	31.54	-	-	Peak
203.34	29.71	-13.79	43.5	51.27	8.42	1.48	31.46	-	-	Peak
237.09	25.77	-20.23	46	44.95	10.72	1.61	31.51	-	-	Peak
339.9	36.06	-9.94	46	52.3	13.19	1.87	31.3	100	54	Peak
374.9	32.2	-13.8	46	47.35	14.13	1.96	31.24	-	-	Peak
624.8	29.77	-16.23	46	39.27	18.82	2.5	30.82	-	-	Peak
2387.14	44.64	-9.36	54	42.12	32.02	4.58	34.08	102	266	Average
2387.14	61.38	-12.62	74	58.86	32.02	4.58	34.08	102	266	Peak
2412	92.83	-	-	90.29	32.03	4.59	34.08	102	266	Average
2412	103.64	-	-	101.1	32.03	4.59	34.08	102	266	Peak
2486	42.67	-11.33	54	40.02	32.09	4.64	34.08	102	266	Average
2486	54.3	-19.7	74	51.65	32.09	4.64	34.08	102	266	Peak



<b>Test Mode :</b>	Mode 6	<b>Temperature :</b>	23~28°C
<b>Test Channel :</b>	01	<b>Relative Humidity :</b>	53~58%
<b>Test Engineer :</b>	Wii Chang	<b>Polarization :</b>	Vertical
<b>Remark :</b>	2412 MHz is Fundamental Signals which can be ignored.		

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
32.97	36.28	-3.72	40	50.47	16.63	0.72	31.54	100	68	Peak
50.79	30.85	-9.15	40	53.88	7.73	0.81	31.57	-	-	Peak
203.07	32.75	-10.75	43.5	54.38	8.35	1.47	31.45	-	-	Peak
339.9	29.78	-16.22	46	46.02	13.19	1.87	31.3	-	-	Peak
374.9	26.05	-19.95	46	41.2	14.13	1.96	31.24	-	-	Peak
533.1	32.62	-13.38	46	43.69	17.62	2.3	30.99	-	-	Peak
2389.8	50.58	-3.42	54	48.06	32.02	4.58	34.08	105	4	Average
2389.8	68.16	-5.84	74	65.64	32.02	4.58	34.08	105	4	Peak
2412	101.24	-	-	98.7	32.03	4.59	34.08	105	4	Average
2412	112.64	-	-	110.1	32.03	4.59	34.08	105	4	Peak
2494	44.96	-9.04	54	42.3	32.1	4.64	34.08	105	4	Average
2494	57.61	-16.39	74	54.95	32.1	4.64	34.08	105	4	Peak



<b>Test Mode :</b>	Mode 7	<b>Temperature :</b>	23~28°C
<b>Test Channel :</b>	06	<b>Relative Humidity :</b>	53~58%
<b>Test Engineer :</b>	Wii Chang	<b>Polarization :</b>	Horizontal
<b>Remark :</b>	2437 MHz is Fundamental Signals which can be ignored.		

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
32.97	22.51	-17.49	40	36.7	16.63	0.72	31.54	-	-	Peak
91.02	26.35	-17.15	43.5	48.29	8.53	1.07	31.54	-	-	Peak
203.07	29.06	-14.44	43.5	50.69	8.35	1.47	31.45	-	-	Peak
339.9	35.95	-10.05	46	52.19	13.19	1.87	31.3	100	57	Peak
374.9	31.8	-14.2	46	46.95	14.13	1.96	31.24	-	-	Peak
533.1	28.99	-17.01	46	40.06	17.62	2.3	30.99	-	-	Peak
2364	43.15	-10.85	54	40.67	31.99	4.57	34.08	100	269	Average
2364	55.14	-18.86	74	52.66	31.99	4.57	34.08	100	269	Peak
2437	92.87	-	-	90.28	32.06	4.61	34.08	100	269	Average
2437	103.81	-	-	101.22	32.06	4.61	34.08	100	269	Peak
2494	42.75	-11.25	54	40.09	32.1	4.64	34.08	100	269	Average
2494	55.01	-18.99	74	52.35	32.1	4.64	34.08	100	269	Peak





<b>Test Mode :</b>	Mode 7	<b>Temperature :</b>	23~28°C
<b>Test Channel :</b>	06	<b>Relative Humidity :</b>	53~58%
<b>Test Engineer :</b>	Wii Chang	<b>Polarization :</b>	Vertical
<b>Remark :</b>	2437 MHz is Fundamental Signals which can be ignored.		

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
32.97	34.67	-5.33	40	48.86	16.63	0.72	31.54	100	87	Peak
50.52	31.58	-8.42	40	54.61	7.73	0.81	31.57	-	-	Peak
203.07	32.48	-11.02	43.5	54.11	8.35	1.47	31.45	-	-	Peak
339.9	29.43	-16.57	46	45.67	13.19	1.87	31.3	-	-	Peak
374.9	25.88	-20.12	46	41.03	14.13	1.96	31.24	-	-	Peak
533.1	32.12	-13.88	46	43.19	17.62	2.3	30.99	-	-	Peak
2356	45.44	-8.56	54	42.99	31.99	4.55	34.09	115	4	Average
2356	58.31	-15.69	74	55.86	31.99	4.55	34.09	115	4	Peak
2437	100.69	-	-	98.1	32.06	4.61	34.08	115	4	Average
2437	112.74	-	-	110.15	32.06	4.61	34.08	115	4	Peak
2494	45.15	-8.85	54	42.49	32.1	4.64	34.08	115	4	Average
2494	57.96	-16.04	74	55.3	32.1	4.64	34.08	115	4	Peak



<b>Test Mode :</b>	Mode 8	<b>Temperature :</b>	23~28°C
<b>Test Channel :</b>	11	<b>Relative Humidity :</b>	53~58%
<b>Test Engineer :</b>	Wii Chang	<b>Polarization :</b>	Horizontal
<b>Remark :</b>	2462 MHz is Fundamental Signals which can be ignored.		

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
33.24	21.2	-18.8	40	35.39	16.63	0.72	31.54	-	-	Peak
50.25	16.84	-23.16	40	39.87	7.73	0.81	31.57	-	-	Peak
203.07	29.3	-14.2	43.5	50.93	8.35	1.47	31.45	-	-	Peak
339.9	35.92	-10.08	46	52.16	13.19	1.87	31.3	102	32	Peak
374.9	31.93	-14.07	46	47.08	14.13	1.96	31.24	-	-	Peak
533.1	28.72	-17.28	46	39.79	17.62	2.3	30.99	-	-	Peak
2310	43.24	-10.76	54	40.85	31.95	4.53	34.09	100	280	Average
2310	55.48	-18.52	74	53.09	31.95	4.53	34.09	100	280	Peak
2462	93.05	-	-	90.44	32.07	4.62	34.08	100	280	Average
2462	103.51	-	-	100.9	32.07	4.62	34.08	100	280	Peak
2484.99	44.13	-9.87	54	41.48	32.09	4.64	34.08	100	280	Average
2484.99	58.14	-15.86	74	55.49	32.09	4.64	34.08	100	280	Peak



<b>Test Mode :</b>	Mode 8	<b>Temperature :</b>	23~28°C
<b>Test Channel :</b>	11	<b>Relative Humidity :</b>	53~58%
<b>Test Engineer :</b>	Wii Chang	<b>Polarization :</b>	Vertical
<b>Remark :</b>	2462 MHz is Fundamental Signals which can be ignored.		

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
32.97	36.88	-3.12	40	51.07	16.63	0.72	31.54	100	52	Peak
50.79	30.62	-9.38	40	53.65	7.73	0.81	31.57	-	-	Peak
191.73	29.5	-14	43.5	51.22	8.31	1.44	31.47	-	-	Peak
339.9	29.78	-16.22	46	46.02	13.19	1.87	31.3	-	-	Peak
533.1	31.91	-14.09	46	42.98	17.62	2.3	30.99	-	-	Peak
624.8	33.33	-12.67	46	42.83	18.82	2.5	30.82	-	-	Peak
2380	45.5	-8.5	54	43	32	4.58	34.08	118	1	Average
2380	56.52	-17.48	74	54.02	32	4.58	34.08	118	1	Peak
2462	102.29	-	-	99.68	32.07	4.62	34.08	118	1	Average
2462	112.83	-	-	110.22	32.07	4.62	34.08	118	1	Peak
2484.42	50.81	-3.19	54	48.16	32.09	4.64	34.08	118	1	Average
2484.42	68.54	-5.46	74	65.89	32.09	4.64	34.08	118	1	Peak



<b>Test Mode :</b>	Mode 9	<b>Temperature :</b>	23~28°C
<b>Test Channel :</b>	11	<b>Relative Humidity :</b>	53~58%
<b>Test Engineer :</b>	Wii Chang	<b>Polarization :</b>	Horizontal
<b>Remark :</b>	2462 MHz is Fundamental Signals which can be ignored.		

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
32.97	23.09	-16.91	40	37.28	16.63	0.72	31.54	-	-	Peak
79.14	17.9	-22.1	40	41.93	6.54	0.98	31.55	-	-	Peak
203.07	29.72	-13.78	43.5	51.35	8.35	1.47	31.45	-	-	Peak
332.9	30.05	-15.95	46	46.47	13.02	1.86	31.3	-	-	Peak
339.9	36.08	-9.92	46	52.32	13.19	1.87	31.3	100	220	Peak
374.9	31.91	-14.09	46	47.06	14.13	1.96	31.24	-	-	Peak
2344	43	-11	54	40.56	31.98	4.55	34.09	100	264	Average
2344	55.02	-18.98	74	52.58	31.98	4.55	34.09	100	264	Peak
2462	91.61	-	-	89	32.07	4.62	34.08	100	264	Average
2462	101.28	-	-	98.67	32.07	4.62	34.08	100	264	Peak
2484.8	45.38	-8.62	54	42.73	32.09	4.64	34.08	100	264	Average
2484.8	58.83	-15.17	74	56.18	32.09	4.64	34.08	100	264	Peak
4924	44.89	-29.11	74	62.78	33.81	6.56	58.26	100	0	Peak



<b>Test Mode :</b>	Mode 9	<b>Temperature :</b>	23~28°C
<b>Test Channel :</b>	11	<b>Relative Humidity :</b>	53~58%
<b>Test Engineer :</b>	Wii Chang	<b>Polarization :</b>	Vertical
<b>Remark :</b>	2462 MHz is Fundamental Signals which can be ignored.		

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
32.97	36.59	-3.41	40	50.78	16.63	0.72	31.54	100	57	Peak
42.42	33.07	-6.93	40	52.32	11.53	0.76	31.54	-	-	Peak
202.8	32.2	-11.3	43.5	53.83	8.35	1.47	31.45	-	-	Peak
339.9	29.43	-16.57	46	45.67	13.19	1.87	31.3	-	-	Peak
374.9	25.79	-20.21	46	40.94	14.13	1.96	31.24	-	-	Peak
533.1	30.58	-15.42	46	41.65	17.62	2.3	30.99	-	-	Peak
2372	45.31	-8.69	54	42.82	32	4.57	34.08	100	324	Average
2372	57.34	-16.66	74	54.85	32	4.57	34.08	100	324	Peak
2462	99.97	-	-	97.36	32.07	4.62	34.08	100	324	Average
2462	109.55	-	-	106.94	32.07	4.62	34.08	100	324	Peak
2483.5	50.26	-3.74	54	47.61	32.09	4.64	34.08	100	324	Average
2483.5	63.79	-10.21	74	61.14	32.09	4.64	34.08	100	324	Peak
4924	46.3	-27.7	74	64.19	33.81	6.56	58.26	100	0	Peak



<b>Test Mode :</b>	Mode 10	<b>Temperature :</b>	23~28°C
<b>Test Channel :</b>	11	<b>Relative Humidity :</b>	53~58%
<b>Test Engineer :</b>	Wii Chang	<b>Polarization :</b>	Horizontal
<b>Remark :</b>	2462 MHz is Fundamental Signals which can be ignored.		

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
32.97	22.11	-17.89	40	36.3	16.63	0.72	31.54	-	-	Peak
108.57	19.47	-24.03	43.5	39.84	10.03	1.13	31.53	-	-	Peak
202.8	29.11	-14.39	43.5	50.74	8.35	1.47	31.45	-	-	Peak
332.9	30.05	-15.95	46	46.47	13.02	1.86	31.3	-	-	Peak
339.9	35.89	-10.11	46	52.13	13.19	1.87	31.3	100	55	Peak
374.9	31.59	-14.41	46	46.74	14.13	1.96	31.24	-	-	Peak
2370	43.02	-10.98	54	40.53	32	4.57	34.08	100	283	Average
2370	54.89	-19.11	74	52.4	32	4.57	34.08	100	283	Peak
2462	90.56	-	-	87.95	32.07	4.62	34.08	100	283	Average
2462	100.58	-	-	97.97	32.07	4.62	34.08	100	283	Peak
2483.5	44.77	-9.23	54	42.12	32.09	4.64	34.08	100	283	Average
2483.5	58.69	-15.31	74	56.04	32.09	4.64	34.08	100	283	Peak
4924	45.76	-28.24	74	63.65	33.81	6.56	58.26	100	0	Peak



<b>Test Mode :</b>	Mode 10	<b>Temperature :</b>	23~28°C
<b>Test Channel :</b>	11	<b>Relative Humidity :</b>	53~58%
<b>Test Engineer :</b>	Wii Chang	<b>Polarization :</b>	Vertical
<b>Remark :</b>	2462 MHz is Fundamental Signals which can be ignored.		

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
33.24	36.34	-3.66	40	50.53	16.63	0.72	31.54	100	66	Peak
106.95	27.13	-16.37	43.5	47.66	9.89	1.12	31.54	-	-	Peak
202.8	32.39	-11.11	43.5	54.02	8.35	1.47	31.45	-	-	Peak
339.9	29.43	-16.57	46	45.67	13.19	1.87	31.3	-	-	Peak
374.9	25.86	-20.14	46	41.01	14.13	1.96	31.24	-	-	Peak
624.8	33.43	-12.57	46	42.93	18.82	2.5	30.82	-	-	Peak
2360	44.77	-9.23	54	42.29	31.99	4.57	34.08	119	4	Average
2360	56.11	-17.89	74	53.63	31.99	4.57	34.08	119	4	Peak
2462	101.2	-	-	98.59	32.07	4.62	34.08	119	4	Average
2462	110.81	-	-	108.2	32.07	4.62	34.08	119	4	Peak
2483.5	51.37	-2.63	54	48.72	32.09	4.64	34.08	119	4	Average
2483.5	68.95	-5.05	74	66.3	32.09	4.64	34.08	119	4	Peak
4924	48.58	-25.42	74	66.47	33.81	6.56	58.26	100	0	Peak



<b>Test Mode :</b>	Mode 11	<b>Temperature :</b>	23~28°C
<b>Test Channel :</b>	01	<b>Relative Humidity :</b>	53~58%
<b>Test Engineer :</b>	Wii Chang	<b>Polarization :</b>	Horizontal
<b>Remark :</b>	2412 MHz is Fundamental Signals which can be ignored.		

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
2310	42.86	-11.14	54	40.47	31.95	4.53	34.09	102	270	Average
2310	55.81	-18.19	74	53.42	31.95	4.53	34.09	102	270	Peak
2412	86.45	-	-	83.91	32.03	4.59	34.08	102	270	Average
2412	97.79	-	-	95.25	32.03	4.59	34.08	102	270	Peak
2494	42.45	-11.55	54	39.79	32.1	4.64	34.08	102	270	Average
2494	53.84	-20.16	74	51.18	32.1	4.64	34.08	102	270	Peak

<b>Test Mode :</b>	Mode 11	<b>Temperature :</b>	23~28°C
<b>Test Channel :</b>	01	<b>Relative Humidity :</b>	53~58%
<b>Test Engineer :</b>	Wii Chang	<b>Polarization :</b>	Vertical
<b>Remark :</b>	2412 MHz is Fundamental Signals which can be ignored.		

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
2389.61	48.91	-5.09	54	46.39	32.02	4.58	34.08	100	32	Average
2389.61	66.08	-7.92	74	63.56	32.02	4.58	34.08	100	32	Peak
2412	98.18	-	-	95.64	32.03	4.59	34.08	100	32	Average
2412	110.06	-	-	107.52	32.03	4.59	34.08	100	32	Peak
2490	44.54	-9.46	54	41.88	32.1	4.64	34.08	100	32	Average
2490	55.32	-18.68	74	52.66	32.1	4.64	34.08	100	32	Peak





<b>Test Mode :</b>	Mode 12	<b>Temperature :</b>	23~28°C
<b>Test Channel :</b>	06	<b>Relative Humidity :</b>	53~58%
<b>Test Engineer :</b>	Wii Chang	<b>Polarization :</b>	Horizontal
<b>Remark :</b>	2437 MHz is Fundamental Signals which can be ignored.		

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
2360	43.01	-10.99	54	40.53	31.99	4.57	34.08	100	270	Average
2360	54.23	-19.77	74	51.75	31.99	4.57	34.08	100	270	Peak
2437	87.5	-	-	84.91	32.06	4.61	34.08	100	270	Average
2437	97.27	-	-	94.68	32.06	4.61	34.08	100	270	Peak
2490	42.58	-11.42	54	39.92	32.1	4.64	34.08	100	270	Average
2490	54.65	-19.35	74	51.99	32.1	4.64	34.08	100	270	Peak

<b>Test Mode :</b>	Mode 12	<b>Temperature :</b>	23~28°C
<b>Test Channel :</b>	06	<b>Relative Humidity :</b>	53~58%
<b>Test Engineer :</b>	Wii Chang	<b>Polarization :</b>	Vertical
<b>Remark :</b>	2437 MHz is Fundamental Signals which can be ignored.		

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	44.78	-9.22	54	42.29	32	4.57	34.08	100	29	Average
2374	57	-17	74	54.51	32	4.57	34.08	100	29	Peak
2437	97.96	-	-	95.37	32.06	4.61	34.08	100	29	Average
2437	109.87	-	-	107.28	32.06	4.61	34.08	100	29	Peak
2484	44.26	-9.74	54	41.61	32.09	4.64	34.08	100	29	Average
2484	56.35	-17.65	74	53.7	32.09	4.64	34.08	100	29	Peak



<b>Test Mode :</b>	Mode 13	<b>Temperature :</b>	23~28°C
<b>Test Channel :</b>	11	<b>Relative Humidity :</b>	53~58%
<b>Test Engineer :</b>	Wii Chang	<b>Polarization :</b>	Horizontal
<b>Remark :</b>	2462 MHz is Fundamental Signals which can be ignored.		

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
2336	42.97	-11.03	54	40.53	31.98	4.55	34.09	100	279	Average
2336	54.95	-19.05	74	52.51	31.98	4.55	34.09	100	279	Peak
2462	86.11	-	-	83.5	32.07	4.62	34.08	100	279	Average
2462	97.61	-	-	95	32.07	4.62	34.08	100	279	Peak
2483.85	42.96	-11.04	54	40.31	32.09	4.64	34.08	100	279	Average
2483.85	55.69	-18.31	74	53.04	32.09	4.64	34.08	100	279	Peak

<b>Test Mode :</b>	Mode 13	<b>Temperature :</b>	23~28°C
<b>Test Channel :</b>	11	<b>Relative Humidity :</b>	53~58%
<b>Test Engineer :</b>	Wii Chang	<b>Polarization :</b>	Vertical
<b>Remark :</b>	2462 MHz is Fundamental Signals which can be ignored.		

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
2358	45.02	-8.98	54	42.54	31.99	4.57	34.08	115	2	Average
2358	57.3	-16.7	74	54.82	31.99	4.57	34.08	115	2	Peak
2462	98.53	-	-	95.92	32.07	4.62	34.08	115	2	Average
2462	110.86	-	-	108.25	32.07	4.62	34.08	115	2	Peak
2483.85	50.01	-3.99	54	47.36	32.09	4.64	34.08	115	2	Average
2483.85	68.66	-5.34	74	66.01	32.09	4.64	34.08	115	2	Peak



<b>Test Mode :</b>	Mode 14	<b>Temperature :</b>	23~28°C
<b>Test Channel :</b>	11	<b>Relative Humidity :</b>	53~58%
<b>Test Engineer :</b>	Wii Chang	<b>Polarization :</b>	Horizontal
<b>Remark :</b>	2462 MHz is Fundamental Signals which can be ignored.		

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
33.24	21.96	-18.04	40	36.15	16.63	0.72	31.54	-	-	Peak
202.8	29.01	-14.49	43.5	50.64	8.35	1.47	31.45	-	-	Peak
236.82	25.64	-20.36	46	44.82	10.72	1.61	31.51	-	-	Peak
332.9	29.82	-16.18	46	46.24	13.02	1.86	31.3	-	-	Peak
339.9	36.08	-9.92	46	52.32	13.19	1.87	31.3	100	87	Peak
374.9	32.09	-13.91	46	47.24	14.13	1.96	31.24	-	-	Peak
2372	42.69	-11.31	54	40.2	32	4.57	34.08	100	264	Average
2372	54.54	-19.46	74	52.05	32	4.57	34.08	100	264	Peak
2462	85.78	-	-	83.17	32.07	4.62	34.08	100	264	Average
2462	95.76	-	-	93.15	32.07	4.62	34.08	100	264	Peak
2483.66	43.28	-10.72	54	40.63	32.09	4.64	34.08	100	264	Average
2483.66	55.99	-18.01	74	53.34	32.09	4.64	34.08	100	264	Peak



<b>Test Mode :</b>	Mode 14	<b>Temperature :</b>	23~28°C
<b>Test Channel :</b>	11	<b>Relative Humidity :</b>	53~58%
<b>Test Engineer :</b>	Wii Chang	<b>Polarization :</b>	Vertical
<b>Remark :</b>	2462 MHz is Fundamental Signals which can be ignored.		

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
33.24	36.71	-3.29	40	50.9	16.63	0.72	31.54	100	63	Peak
42.42	34.24	-5.76	40	53.49	11.53	0.76	31.54	-	-	Peak
202.8	31.97	-11.53	43.5	53.6	8.35	1.47	31.45	-	-	Peak
339.9	29.48	-16.52	46	45.72	13.19	1.87	31.3	-	-	Peak
374.9	26.15	-19.85	46	41.3	14.13	1.96	31.24	-	-	Peak
533.1	31.62	-14.38	46	42.69	17.62	2.3	30.99	-	-	Peak
2332	43.31	-10.69	54	40.89	31.96	4.55	34.09	100	322	Average
2332	55.03	-18.97	74	52.61	31.96	4.55	34.09	100	322	Peak
2462	93.56	-	-	90.95	32.07	4.62	34.08	100	322	Average
2462	103.66	-	-	101.05	32.07	4.62	34.08	100	322	Peak
2483.66	46.02	-7.98	54	43.37	32.09	4.64	34.08	100	322	Average
2483.66	61.8	-12.2	74	59.15	32.09	4.64	34.08	100	322	Peak



<b>Test Mode :</b>	Mode 15	<b>Temperature :</b>	23~28°C
<b>Test Channel :</b>	11	<b>Relative Humidity :</b>	53~58%
<b>Test Engineer :</b>	Wii Chang	<b>Polarization :</b>	Horizontal
<b>Remark :</b>	2462 MHz is Fundamental Signals which can be ignored.		

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
32.97	20.85	-19.15	40	35.04	16.63	0.72	31.54	-	-	Peak
117.48	20.11	-23.39	43.5	39.77	10.67	1.19	31.52	-	-	Peak
202.8	29.35	-14.15	43.5	50.98	8.35	1.47	31.45	-	-	Peak
332.9	30.4	-15.6	46	46.82	13.02	1.86	31.3	-	-	Peak
339.9	35.87	-10.13	46	52.11	13.19	1.87	31.3	100	222	Peak
374.9	31.94	-14.06	46	47.09	14.13	1.96	31.24	-	-	Peak
2338	42.91	-11.09	54	40.47	31.98	4.55	34.09	100	283	Average
2338	54.46	-19.54	74	52.02	31.98	4.55	34.09	100	283	Peak
2462	84.53	-	-	81.92	32.07	4.62	34.08	100	283	Average
2462	94.21	-	-	91.6	32.07	4.62	34.08	100	283	Peak
2483.85	43.15	-10.85	54	40.5	32.09	4.64	34.08	100	283	Average
2483.85	56.23	-17.77	74	53.58	32.09	4.64	34.08	100	283	Peak



<b>Test Mode :</b>	Mode 15	<b>Temperature :</b>	23~28°C
<b>Test Channel :</b>	11	<b>Relative Humidity :</b>	53~58%
<b>Test Engineer :</b>	Wii Chang	<b>Polarization :</b>	Vertical
<b>Remark :</b>	2462 MHz is Fundamental Signals which can be ignored.		

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
33.24	36.57	-3.43	40	50.76	16.63	0.72	31.54	100	68	Peak
42.42	31.87	-8.13	40	51.12	11.53	0.76	31.54	-	-	Peak
202.8	32.43	-11.07	43.5	54.06	8.35	1.47	31.45	-	-	Peak
339.9	29.58	-16.42	46	45.82	13.19	1.87	31.3	-	-	Peak
374.9	25.74	-20.26	46	40.89	14.13	1.96	31.24	-	-	Peak
624.8	33.4	-12.6	46	42.9	18.82	2.5	30.82	-	-	Peak
2372	43.62	-10.38	54	41.13	32	4.57	34.08	128	327	Average
2372	55.2	-18.8	74	52.71	32	4.57	34.08	128	327	Peak
2462	94.8	-	-	92.19	32.07	4.62	34.08	128	327	Average
2462	104.57	-	-	101.96	32.07	4.62	34.08	128	327	Peak
2483.66	45.2	-8.8	54	42.55	32.09	4.64	34.08	128	327	Average
2483.66	60.54	-13.46	74	57.89	32.09	4.64	34.08	128	327	Peak



<b>Test Mode :</b>	Mode 16	<b>Temperature :</b>	23~28°C
<b>Test Channel :</b>	03	<b>Relative Humidity :</b>	53~58%
<b>Test Engineer :</b>	Wii Chang	<b>Polarization :</b>	Horizontal
<b>Remark :</b>	2422 MHz is Fundamental Signals which can be ignored.		

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
2387.71	43.31	-10.69	54	40.79	32.02	4.58	34.08	100	288	Average
2387.71	57.66	-16.34	74	55.14	32.02	4.58	34.08	100	288	Peak
2422	79.76	-	-	77.21	32.04	4.59	34.08	100	288	Average
2422	93.47	-	-	90.92	32.04	4.59	34.08	100	288	Peak
2486	42.46	-11.54	54	39.81	32.09	4.64	34.08	100	288	Average
2486	54.92	-19.08	74	52.27	32.09	4.64	34.08	100	288	Peak

<b>Test Mode :</b>	Mode 16	<b>Temperature :</b>	23~28°C
<b>Test Channel :</b>	03	<b>Relative Humidity :</b>	53~58%
<b>Test Engineer :</b>	Wii Chang	<b>Polarization :</b>	Vertical
<b>Remark :</b>	2422 MHz is Fundamental Signals which can be ignored.		

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
2389.99	46.98	-7.02	54	44.46	32.02	4.58	34.08	100	0	Average
2389.99	65.19	-8.81	74	62.67	32.02	4.58	34.08	100	0	Peak
2422	89.94	-	-	87.35	32.06	4.61	34.08	100	0	Average
2422	101.98	-	-	99.39	32.06	4.61	34.08	100	0	Peak
2486	43.33	-10.67	54	40.68	32.09	4.64	34.08	100	0	Average
2486	55.73	-18.27	74	53.08	32.09	4.64	34.08	100	0	Peak



<b>Test Mode :</b>	Mode 17	<b>Temperature :</b>	23~28°C
<b>Test Channel :</b>	06	<b>Relative Humidity :</b>	53~58%
<b>Test Engineer :</b>	Wii Chang	<b>Polarization :</b>	Horizontal
<b>Remark :</b>	2437 MHz is Fundamental Signals which can be ignored.		

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
2324	42.91	-11.09	54	40.51	31.96	4.53	34.09	100	282	Average
2324	55.38	-18.62	74	52.98	31.96	4.53	34.09	100	282	Peak
2437	80.5	-	-	77.91	32.06	4.61	34.08	100	282	Average
2437	93.73	-	-	91.14	32.06	4.61	34.08	100	282	Peak
2490	42.59	-11.41	54	39.93	32.1	4.64	34.08	100	282	Average
2490	55.61	-18.39	74	52.95	32.1	4.64	34.08	100	282	Peak

<b>Test Mode :</b>	Mode 17	<b>Temperature :</b>	23~28°C
<b>Test Channel :</b>	06	<b>Relative Humidity :</b>	53~58%
<b>Test Engineer :</b>	Wii Chang	<b>Polarization :</b>	Vertical
<b>Remark :</b>	2437 MHz is Fundamental Signals which can be ignored.		

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
2328	43.88	-10.12	54	41.48	31.96	4.53	34.09	119	1	Average
2328	55.79	-18.21	74	53.39	31.96	4.53	34.09	119	1	Peak
2437	89.81	-	-	87.22	32.06	4.61	34.08	119	1	Average
2437	102.51	-	-	99.92	32.06	4.61	34.08	119	1	Peak
2488	44.09	-9.91	54	41.43	32.1	4.64	34.08	119	1	Average
2488	56.5	-17.5	74	53.84	32.1	4.64	34.08	119	1	Peak





<b>Test Mode :</b>	Mode 18	<b>Temperature :</b>	23~28°C
<b>Test Channel :</b>	09	<b>Relative Humidity :</b>	53~58%
<b>Test Engineer :</b>	Wii Chang	<b>Polarization :</b>	Horizontal
<b>Remark :</b>	2452 MHz is Fundamental Signals which can be ignored.		

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
2348	42.96	-11.04	54	40.52	31.98	4.55	34.09	100	280	Average
2348	55.18	-18.82	74	52.74	31.98	4.55	34.09	100	280	Peak
2452	80.72	-	-	78.13	32.06	4.61	34.08	100	280	Average
2452	93.38	-	-	90.79	32.06	4.61	34.08	100	280	Peak
2483.85	43.41	-10.59	54	40.76	32.09	4.64	34.08	100	280	Average
2483.85	57.74	-16.26	74	55.09	32.09	4.64	34.08	100	280	Peak

<b>Test Mode :</b>	Mode 18	<b>Temperature :</b>	23~28°C
<b>Test Channel :</b>	09	<b>Relative Humidity :</b>	53~58%
<b>Test Engineer :</b>	Wii Chang	<b>Polarization :</b>	Vertical
<b>Remark :</b>	2452 MHz is Fundamental Signals which can be ignored.		

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
2370	43.68	-10.32	54	41.19	32	4.57	34.08	118	4	Average
2370	55.14	-18.86	74	52.65	32	4.57	34.08	118	4	Peak
2452	90.43	-	-	87.82	32.07	4.62	34.08	118	4	Average
2452	102.71	-	-	100.1	32.07	4.62	34.08	118	4	Peak
2484.04	47.89	-6.11	54	45.24	32.09	4.64	34.08	118	4	Average
2484.04	66.16	-7.84	74	63.51	32.09	4.64	34.08	118	4	Peak



<b>Test Mode :</b>	Mode 19	<b>Temperature :</b>	23~28°C
<b>Test Channel :</b>	09	<b>Relative Humidity :</b>	53~58%
<b>Test Engineer :</b>	Wii Chang	<b>Polarization :</b>	Horizontal
<b>Remark :</b>	2452 MHz is Fundamental Signals which can be ignored.		

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
33.24	21.27	-18.73	40	35.46	16.63	0.72	31.54	-	-	Peak
202.8	28.88	-14.62	43.5	50.51	8.35	1.47	31.45	-	-	Peak
236.82	25.09	-20.91	46	44.27	10.72	1.61	31.51	-	-	Peak
332.9	29.91	-16.09	46	46.33	13.02	1.86	31.3	-	-	Peak
339.9	36.29	-9.71	46	52.53	13.19	1.87	31.3	100	111	Peak
374.9	31.77	-14.23	46	46.92	14.13	1.96	31.24	-	-	Peak
2328	42.76	-11.24	54	40.36	31.96	4.53	34.09	101	253	Average
2328	54.12	-19.88	74	51.72	31.96	4.53	34.09	101	253	Peak
2452	84.34	-	-	81.75	32.06	4.61	34.08	101	253	Average
2452	94.19	-	-	91.6	32.06	4.61	34.08	101	253	Peak
2484.8	44.3	-9.7	54	41.65	32.09	4.64	34.08	101	253	Average
2484.8	59.18	-14.82	74	56.53	32.09	4.64	34.08	101	253	Peak



Test Mode :	Mode 19	Temperature :	23~28°C
Test Channel :	09	Relative Humidity :	53~58%
Test Engineer :	Wii Chang	Polarization :	Vertical
Remark :	2452 MHz is Fundamental Signals which can be ignored.		

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
33.24	36.08	-3.92	40	50.27	16.63	0.72	31.54	100	56	Peak
42.42	32.39	-7.61	40	51.64	11.53	0.76	31.54	-	-	Peak
202.8	32.25	-11.25	43.5	53.88	8.35	1.47	31.45	-	-	Peak
339.9	29.4	-16.6	46	45.64	13.19	1.87	31.3	-	-	Peak
374.9	25.78	-20.22	46	40.93	14.13	1.96	31.24	-	-	Peak
624.8	33.52	-12.48	46	43.02	18.82	2.5	30.82	-	-	Peak
2368	44.85	-9.15	54	42.37	31.99	4.57	34.08	100	32	Average
2368	56.1	-17.9	74	53.62	31.99	4.57	34.08	100	32	Peak
2452	92.17	-	-	89.58	32.06	4.61	34.08	100	32	Average
2452	102.19	-	-	99.6	32.06	4.61	34.08	100	32	Peak
2484.04	50.47	-3.53	54	47.82	32.09	4.64	34.08	100	32	Average
2484.04	67.01	-6.99	74	64.36	32.09	4.64	34.08	100	32	Peak



<b>Test Mode :</b>	Mode 20	<b>Temperature :</b>	23~28°C
<b>Test Channel :</b>	09	<b>Relative Humidity :</b>	53~58%
<b>Test Engineer :</b>	Wii Chang	<b>Polarization :</b>	Horizontal
<b>Remark :</b>	2452 MHz is Fundamental Signals which can be ignored.		

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
32.97	22.51	-17.49	40	36.7	16.63	0.72	31.54	-	-	Peak
191.46	27.58	-15.92	43.5	49.29	8.33	1.44	31.48	-	-	Peak
202.8	29.45	-14.05	43.5	51.08	8.35	1.47	31.45	-	-	Peak
339.9	35.96	-10.04	46	52.2	13.19	1.87	31.3	100	88	Peak
374.9	31.86	-14.14	46	47.01	14.13	1.96	31.24	-	-	Peak
800.5	31.46	-14.54	46	38.15	21.02	2.83	30.54	-	-	Peak
2362	42.97	-11.03	54	40.49	31.99	4.57	34.08	100	285	Average
2362	55.81	-18.19	74	53.33	31.99	4.57	34.08	100	285	Peak
2452	82.73	-	-	80.14	32.06	4.61	34.08	100	285	Average
2452	92.71	-	-	90.12	32.06	4.61	34.08	100	285	Peak
2483.5	44.39	-9.61	54	41.74	32.09	4.64	34.08	100	285	Average
2483.5	59.89	-14.11	74	57.24	32.09	4.64	34.08	100	285	Peak



<b>Test Mode :</b>	Mode 20	<b>Temperature :</b>	23~28°C
<b>Test Channel :</b>	09	<b>Relative Humidity :</b>	53~58%
<b>Test Engineer :</b>	Wii Chang	<b>Polarization :</b>	Vertical
<b>Remark :</b>	2452 MHz is Fundamental Signals which can be ignored.		

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
32.97	36.18	-3.82	40	50.37	16.63	0.72	31.54	100	48	Peak
42.96	33.5	-6.5	40	52.75	11.53	0.76	31.54	-	-	Peak
202.8	32.48	-11.02	43.5	54.11	8.35	1.47	31.45	-	-	Peak
374.9	23.8	-22.2	46	38.95	14.13	1.96	31.24	-	-	Peak
533.1	31.55	-14.45	46	42.62	17.62	2.3	30.99	-	-	Peak
624.8	33.3	-12.7	46	42.8	18.82	2.5	30.82	-	-	Peak
2374	44.4	-9.6	54	41.91	32	4.57	34.08	118	5	Average
2374	56.85	-17.15	74	54.36	32	4.57	34.08	118	5	Peak
2452	93.57	-	-	90.98	32.06	4.61	34.08	118	5	Average
2452	104.34	-	-	101.75	32.06	4.61	34.08	118	5	Peak
2484.04	51.71	-2.29	54	49.06	32.09	4.64	34.08	118	5	Average
2484.04	68.46	-5.54	74	65.81	32.09	4.64	34.08	118	5	Peak



## **3.8 Antenna Requirements**

### **3.8.1 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.

### **3.8.2 Antenna Connected Construction**

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

### **3.8.3 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	Nov. 09, 2011~ Nov. 10, 2011	Jun. 12, 2012	Conducted (TH02-HY)
Power Meter	Anritsu	ML2495A	0932001	N/A	Sep. 18, 2011	Nov. 09, 2011~ Nov. 10, 2011	Sep. 17, 2012	Conducted (TH02-HY)
Power Sensor	Anritsu	MA2411B	0846202	N/A	Sep. 18, 2011	Nov. 09, 2011~ Nov. 10, 2011	Sep. 17, 2012	Conducted (TH02-HY)
Power Meter	Agilent	E4416A	GB41292344	N/A	Feb. 18, 2011	Nov. 09, 2011~ Nov. 10, 2011	Feb. 17, 2012	Conducted (TH02-HY)
Power Sensor	Agilent	E9327A	US40441548	N/A	Feb. 18, 2011	Nov. 09, 2011~ Nov. 10, 2011	Feb. 17, 2012	Conducted (TH02-HY)
EMI Test Receive	R&S	ESCI 7	100724	9kHz~7GHz	Aug. 22, 2011	Sep. 15, 2011	Aug. 21, 2012	Conduction (CO05-HY)
Two-LISN	R&S	ENV216	11-100081	9KHz~30MHz	Dec. 09, 2011	Sep. 15, 2011	Dec. 08, 2012	Conduction (CO05-HY)
Two-LISN	R&S	ENV216	11-100080	9KHz~30MHz	Dec. 06, 2011	Sep. 15, 2011	Dec. 05, 2012	Conduction (CO05-HY)
AC Power Source	APC	APC-1000 W	N/A	N/A	N/A	Sep. 15, 2011	N/A	Conduction (CO05-HY)
Spectrum Analyzer	R&S	FSP30	101352	9KHz~30GHz	Nov. 03, 2010	Sep. 11, 2011~ Oct. 27, 2011	Nov. 02, 2011	Radiation (03CH05-HY)
Spectrum Analyzer	R&S	FSP30	101352	9KHz~30GHz	Nov. 03, 2011	Sep. 11, 2011~ Oct. 27, 2011	Nov. 02, 2012	Radiation (03CH05-HY)
COM-POWER	Double Ridge Horn	AH-118	701030	1GHz~18GHz	N/A	Sep. 11, 2011~ Oct. 27, 2011	N/A	Radiation (03CH05-HY)
Bilog Antenna	SCHAFFNER	CBL6111C	2725	30MHz~1GHz	Nov. 6, 2010	Sep. 11, 2011~ Oct. 27, 2011	Nov. 5, 2011	Radiation (03CH05-HY)
Bilog Antenna	SCHAFFNER	CBL6111C	2725	30MHz~1GHz	Oct. 22, 2011	Sep. 11, 2011~ Oct. 27, 2011	Oct. 21, 2012	Radiation (03CH05-HY)
Turn Table	HD	Deis HD 2000	420/611	0 - 360 degree	N/A	Sep. 11, 2011~ Oct. 27, 2011	N/A	Radiation (03CH05-HY)
Antenna Mast	HD	MA 240	240/666	1 m~4 m	N/A	Sep. 11, 2011~ Oct. 27, 2011	N/A	Radiation (03CH05-HY)
Horn Antenna	ESCO	3117	66584	1GHz~18GHz	Aug. 04, 2011	Sep. 11, 2011~ Oct. 27, 2011	Aug. 03, 2012	Radiation (03CH05-HY)
COM-POWER	COM-POWER	PA-103	161075	1KHz~1GHz	Mar. 29, 2011	Sep. 11, 2011~ Oct. 27, 2011	Mar. 28, 2012	Radiation (03CH05-HY)
Pre Amplifier	EMCI	EMC05184 5	SN980048	1GHz~18GHz	Jul. 19, 2011	Sep. 11, 2011~ Oct. 27, 2011	Jul. 18, 2012	Radiation (03CH05-HY)
Preamplifier	MITEQ	AMF-7D-00 101800-30-10P	159087	1GHz~18GHz	Feb. 21, 2011	Sep. 11, 2011~ Oct. 27, 2011	Feb. 20, 2012	Radiation (03CH05-HY)
Pre Amplifier	Agilent	8449B	3008A01917	1GHz~26.5GHz	Apr. 14, 2011	Sep. 11, 2011~ Oct. 27, 2011	Apr. 13, 2012	Radiation (03CH05-HY)

## 5 Uncertainty of Evaluation

### Uncertainty of Conducted Emission Measurement (150 KHz ~ 30 MHz)

Contribution	Uncertainty of $X_i$		$u(X_i)$
	dB	Probability Distribution	
Receiver Reading	0.10	Normal (k=2)	0.05
Cable Loss	0.10	Normal (k=2)	0.05
AMN Insertion Loss	2.50	Rectangular	0.63
Receiver Specification	1.50	Rectangular	0.43
Site Imperfection	1.39	Rectangular	0.80
Mismatch	+0.34 / -0.35	U-Shape	0.24
<b>Combined Standard Uncertainty <math>U_c(y)</math></b>	<b>1.13</b>		
<b>Measuring Uncertainty for a Level of Confidence of 95% (<math>U = 2U_c(y)</math>)</b>	<b>2.26</b>		

### 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
<b>Combined Standard Uncertainty <math>U_c(y)</math></b>	<b>1.27</b>		
<b>Measuring Uncertainty for a Level of Confidence of 95% (<math>U = 2U_c(y)</math>)</b>	<b>2.54</b>		





**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
<b>Combined Standard Uncertainty <math>U_c(y)</math></b>	<b>2.36</b>				
<b>Measuring Uncertainty for a Level of Confidence of 95% (<math>U = 2U_c(y)</math>)</b>	<b>4.72</b>				



## **Appendix A. Photographs of EUT**

Please refer to Sporton report number EP162914 as below.