

FCC RF Test Report

APPLICANT : ASUSTeK COMPUTER INC.
EQUIPMENT : ASUS Tablet
BRAND NAME : ASUS
MODEL NAME : K00L
FCC ID : MSQK00L
STANDARD : FCC Part 15 Subpart C §15.247
CLASSIFICATION : (DTS) Digital Transmission System

The product was received on Jul. 11, 2013 and completely tested on Aug. 14, 2013. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the procedures and shown to be compliant 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: Joseph Lin / Supervisor



Approved by: Jones Tsai / Manager



SPORTON INTERNATIONAL INC.

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

SPORTON INTERNATIONAL INC.

TEL : 886-3-327-3456

FAX : 886-3-328-4978

FCC ID : MSQK00L

Page Number : 1 of 66

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SUMMARY OF TEST RESULT

Report Section	FCC Rule	IC Rule	Description	Limit	Result	Remark
3.1	15.247(a)(2)	RSS-210 A8.2(a)	6dB Bandwidth	$\geq 0.5\text{MHz}$	Pass	-
3.1	-	RSS-Gen 4.6.1	99% Bandwidth	-	Pass	-
3.2	15.247(b)	RSS-210 A8.4	Power Output Measurement	$\leq 30\text{dBm}$	Pass	-
3.3	15.247(e)	RSS-210 A8.2(b)	Power Spectral Density	$\leq 8\text{dBm}/3\text{kHz}$	Pass	-
3.4	15.247(d)	RSS-210 A8.5	Conducted Band Edges	$\leq 20\text{dBc}$	Pass	-
			Conducted Spurious Emission		Pass	-
3.5	15.247(d)	RSS-210 A8.5	Radiated Band Edges and Radiated Spurious Emission	15.209(a) & 15.247(d)	Pass	Under limit 5.06 dB at 2483.500 MHz
3.6	15.207	RSS-Gen 7.2.4	AC Conducted Emission	15.207(a)	Pass	Under limit 11.37 dB at 0.200 MHz
3.7	15.203 & 15.247(b)	RSS-210 A8.4	Antenna Requirement	N/A	Pass	-

1 General Description

1.1 Applicant

ASUSTeK COMPUTER INC.

4F, No. 150, LI-TE RD., PEITOU, TAIPEI, TAIWAN

1.2 Manufacturer

WISTRON INFOCOMM (KUNSHAN) CO., LTD.

No. 168, First Avenue, Jiangsu Province, comprehensive free Trade Zone, Kunshan, Suzhou China

1.3 Feature of Equipment Under Test

Product Feature	
Equipment	ASUS Tablet
Brand Name	ASUS
Model Name	K00L
Sample 1	EUT with SKU 1
Sample 2	EUT with SKU 2
Sample 3	EUT with SKU 3
Sample 4	EUT with SKU 4
Sample 5	EUT with SKU 5
FCC ID	MSQK00L
EUT supports Radios application	WLAN 11b/g/n HT20/HT40 Bluetooth v 3.0 /GPS
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.

ME180A ER	Pad				
	SKU1	SKU2	SKU3	SKU4	SKU5
MB	ME180A MAIN BOARD				
CPU	CPU ASUS RK101 TFBGA453LD				
DDR	DDR3LM 1600 256M*16 FBGA96 HYNIX(1G)	DDR3LM 1600 256M*16 FBGA96 HYNIX(2G)	DDR3L-RS 256M*16-3 FBGA-96 ELPIDA(1G)	DDR3L-RS 256M*16-3 FBGA-96 ELPIDA(2G)	DDR3LM 1600 256M*16 FBGA96 HYNIX(1G)
EMMC	FLASH HYNIX //16G	FLASH HYNIX //32G	FLASH SANDISK//16G	FLASH SANDISK//32G	FLASH HYNIX //16G
WIFI/BT	C.S RTL8723BS-VQ-CG QFN-68//Realtek				
GPS	GPS+ GLONASS WLPGA C.S BCM47511//Broadcom				
LCD	LCD TFT 8.0' WXGA GL LED SLIM/Innolux				LCD TFT 8.0' WXGA GL LED//AUO
Battery	SMP/C11P1304/1S1P,3.8V		NVT/C11P1304/1S1P,3.8V		CPT/C11P1304/1S1P,3.8V
Adapter	LITE-ON/PA-1070-07		PHIHONG/PSM06A-050Q		
Camera 1.2M	LITEON/12P2SF172	LITEON/12P2SF172	FOXLINK/FM12FF-399H	FOXLINK/FM12FF-399H	LITEON/12P2SF172
Camera 5M	LITEON/13P2BA522				

1.4 Product Specification of Equipment Under Test

Product Specification subjective to this standard	
Tx/Rx Channel Frequency Range	802.11b/g/n : 2412 MHz ~ 2462 MHz
Maximum Output Power to Antenna	<2412 MHz ~ 2462 MHz> 802.11b : 16.31 dBm (0.0428 W) 802.11g : 22.08 dBm (0.1614 W) 802.11n HT20 : 21.59 dBm (0.1442 W) 802.11n HT40 : 21.65 dBm (0.1462 W)
99% Occupied Bandwidth	<2412 MHz ~ 2462 MHz> 802.11b : 15.05MHz 802.11g : 18.95MHz 802.11n HT20 : 19.65MHz 802.11n HT40 : 36.70MHz
Antenna Type	802.11b/g/n : PCB Antenna with gain 2.45 dBi
Type of Modulation	802.11b : DSSS (DBPSK / DQPSK / CCK) 802.11g/n : OFDM (BPSK / QPSK / 16QAM / 64QAM)

1.5 Modification of EUT

No modifications are made to the EUT during all test items.

1.6 Testing Site

Test Site	SPORTON INTERNATIONAL INC.			
Test Site Location	No. 52, Hwa Ya 1 st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL: +886-3-3273456 / FAX: +886-3-3284978			
Test Site No.	Sporton Site No.			FCC/IC Registration No.
	TH02-HY	CO05-HY	03CH06-HY	722060/4086B-1

Note: The test site complies with ANSI C63.4 2003 requirement.

1.7 Applied Standards

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

- ♦ FCC Part 15 Subpart C §15.247
- ♦ FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v03r01
- ♦ ANSI C63.4-2003

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.



2 Test Configuration of Equipment Under Test

The EUT has been associated with peripherals 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) and radiated emission (9 kHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower). For radiated measurement, pre-scanned in three orthogonal panels, X, Y, Z. The worst cases (Z plane) were recorded in this report.

The final configuration from all the combinations and the worst-case data rates were investigated by measuring the maximum power across all the data rates and modulation modes under section 2.2.

Based on the worst configuration found above, the RF power setting is set individually to meet FCC compliance limit for the final conducted and radiated tests shown in section 2.3.

2.1 Carrier Frequency Channel

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
2400-2483.5 MHz	1	2412	7	2442
	2	2417	8	2447
	3	2422	9	2452
	4	2427	10	2457
	5	2432	11	2462
	6	2437		

2.2 Pre-Scanned RF Power

Preliminary tests were performed in different data rate and the highest data rates of peak power were chosen for full test shown in the following tables.

2.4GHz 802.11b mode				
Data Rate (MHz)	1M bps	2M bps	5.5M bps	11M bps
Peak Power (dBm)	16.31	16.21	16.26	15.96

2.4GHz 802.11g mode								
Data Rate (MHz)	6M bps	9M bps	12M bps	18M bps	24M bps	36M bps	48M bps	54M bps
Peak Power (dBm)	22.08	21.81	22.06	21.24	22.05	22.06	21.86	22.04

2.4GHz 802.11n HT20 mode									
Data Rate (MHz)		MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
Peak Power (dBm)	400GI	21.50	21.45	21.39	21.35	21.49	21.45	21.46	21.46
	800GI	21.59	21.54	21.48	21.44	21.58	21.54	21.55	21.55

2.4GHz 802.11n HT40 mode									
Data Rate (MHz)		MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
Peak Power (dBm)	400GI	21.59	21.47	21.38	21.52	21.56	21.52	21.57	21.32
	800GI	21.65	21.53	21.44	21.58	21.62	21.58	21.63	21.38



2.3 Test Mode

Final results of test modes, data rates and test channels are shown as following table.

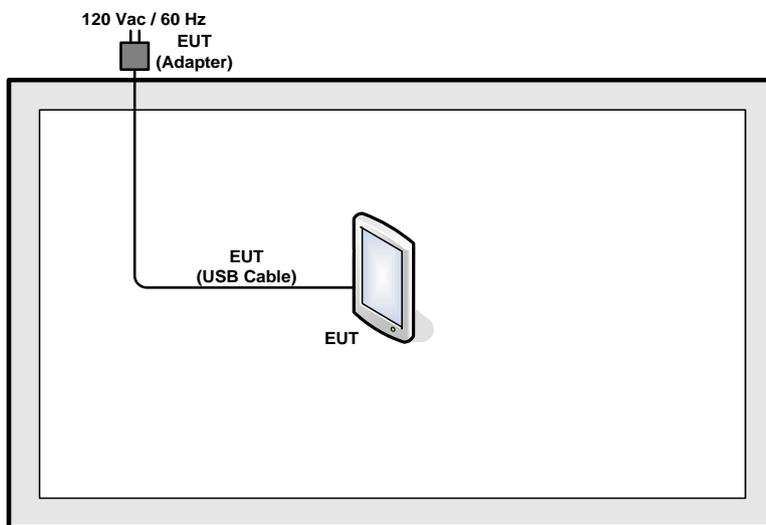
<2.4GHz>

Test Cases				
	Test Items	Mode	Data Rate	Test Channel
Conducted TCs	6dB and 99% BW Power Spectral Density	802.11b	1 Mbps	1/6/11
		802.11g	6 Mbps	1/6/11
		802.11n HT20	MCS0	1/6/11
		802.11n HT40	MCS0	3/6/9
	Output Power	802.11b	1 Mbps	1/6/11
		802.11g	6 Mbps	1/6/11
		802.11n HT20	MCS0	1/6/11
		802.11n HT40	MCS0	3/6/9
	Conducted Band Edge	802.11b	1 Mbps	1/11
		802.11g	6 Mbps	1/11
		802.11n HT20	MCS0	1/11
		802.11n HT40	MCS0	3/9
	Conducted Spurious Emission	802.11b	1 Mbps	1/6/11
		802.11g	6 Mbps	1/6/11
		802.11n HT20	MCS0	1/6/11
		802.11n HT40	MCS0	3/6/9
Radiated TCs	Radiated Band Edge	802.11b	1 Mbps	1/11
		802.11g	6 Mbps	1/11
		802.11n HT20	MCS0	1/11
		802.11n HT40	MCS0	3/9
	Radiated Spurious Emission	802.11b	1 Mbps	1/6/11
		802.11g	6 Mbps	1/6/11
		802.11n HT20	MCS0	1/6/11
		802.11n HT40	MCS0	3/6/9

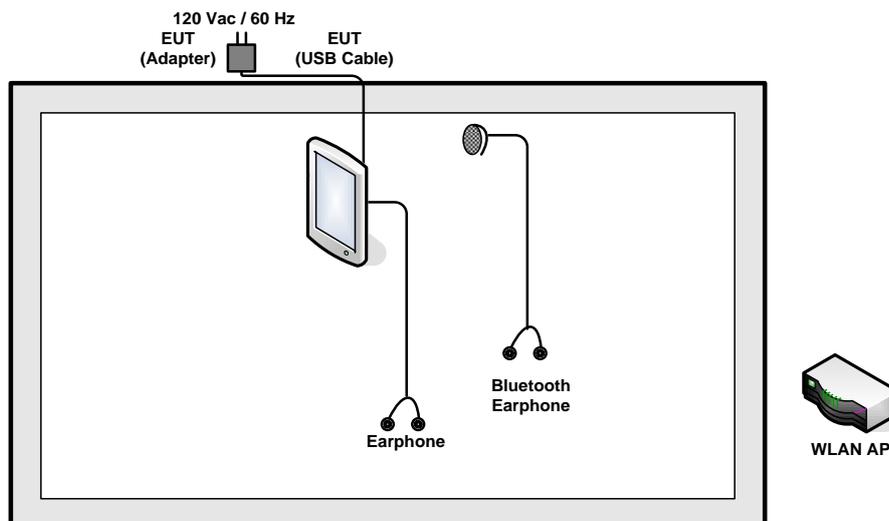
Test Cases	
AC Conducted Emission	Mode 1 : WLAN Link + Bluetooth Link + USB Cable (Charging from Adapter) + MP3 + Earphone + H Pattern for Sample 4
Remark:	1. For Radiated Test Cases, The tests were performance with Adapter 1, and Battery 1. 2. All the radiated test cases were performance with Sample 4.

2.4 Connection Diagram of Test System

<WLAN Tx Mode>



<AC Conducted Emission Mode>



2.5 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	WLAN AP	D-Link	Dns-g120	FCC DoC	N/A	Unshielded, 1.8 m
2.	Bluetooth Earphone	SONY	Z354	N/A	N/A	N/A
3.	MIC+Earphone	Apple	MB770FE/A	FCC DoC	Shielded, 1.5 m	N/A

2.6 Description of RF Function Operation Test Setup

Turn on "Wifi Normal" and "Wifi test". Then click "MP test" and press "Start Tx" to allow the EUT's WLAN function to transmit and receive signals continuously.

2.7 Measurement Results Explanation Example

For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuator factor between EUT conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly the EUT RF output level.

Example :

The spectrum analyzer offset is derived from RF cable loss and attenuator factor.

Offset = RF cable loss + attenuator factor.

Following shows an offset computation example with cable loss 4.2 dB and 10dB attenuator.

$$\begin{aligned}
 \text{Offset(dB)} &= \text{RF cable loss(dB)} + \text{attenuator factor(dB)}. \\
 &= 4.2 + 10 = 14.2 \text{ (dB)}
 \end{aligned}$$

3 Test Result

3.1 6dB and 99% Bandwidth Measurement

3.1.1 Limit of 6dB and 99% Bandwidth

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

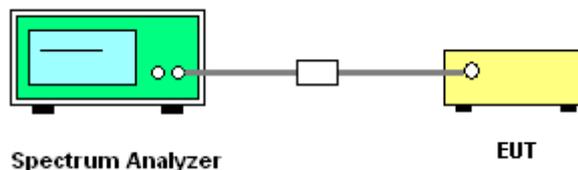
3.1.2 Measuring Instruments

See list of measuring instruments of this test report.

3.1.3 Test Procedures

1. The testing follows FCC KDB Publication No. 558074 DTS D01 Meas. Guidance v03r01.
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 100 kHz. Set the Video bandwidth (VBW) = 300 kHz. In order to make an accurate measurement. The 6 dB bandwidth must be greater than 500 kHz.
5. For 99% Bandwidth Measurement, the spectrum analyzer's resolution bandwidth (RBW) = 1MHz and set the Video bandwidth (VBW) = 3MHz.
6. Measure and record the results in the test report.

3.1.4 Test Setup





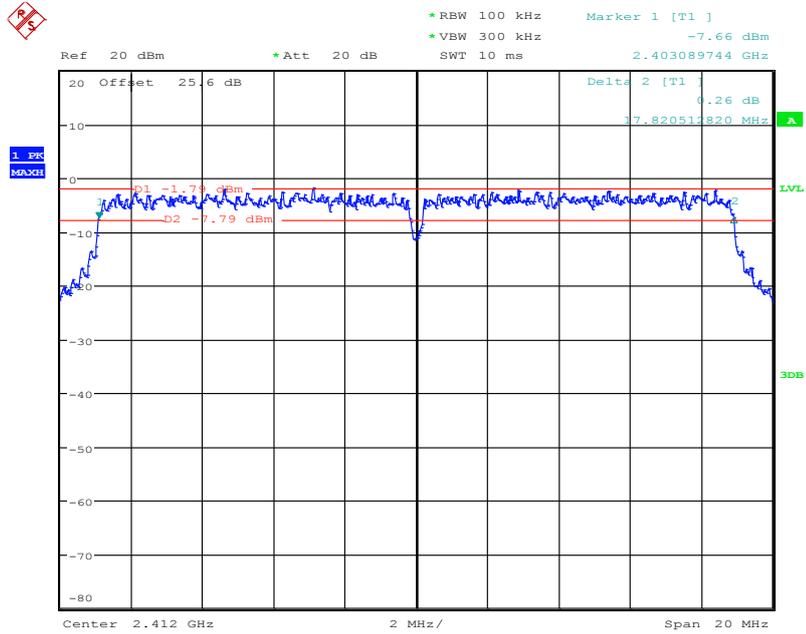
3.1.5 Test Result of 6dB and 99% Occupied Bandwidth

Test Band :	2.4GHz	Temperature :	24~26°C
Test Engineer :	Alex Lee	Relative Humidity :	50~53%

Mod.	Data Rate	N _{TX}	Channel	Freq. (MHz)	99% Bandwidth (MHz)	6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
11b	1Mbps	1	1	2412	15.05	2406.97	0.5	Pass
11b	1Mbps	1	6	2437	15.05	2431.97	0.5	Pass
11b	1Mbps	1	11	2462	15.05	2456.96	0.5	Pass
11g	6Mbps	1	1	2412	18.85	2403.70	0.5	Pass
11g	6Mbps	1	6	2437	18.95	2428.70	0.5	Pass
11g	6Mbps	1	11	2462	18.75	2453.70	0.5	Pass
HT20	MCS0	1	1	2412	19.60	2403.09	0.5	Pass
HT20	MCS0	1	6	2437	19.65	2428.09	0.5	Pass
HT20	MCS0	1	11	2462	19.55	2453.09	0.5	Pass
HT40	MCS0	1	3	2422	36.60	2403.79	0.5	Pass
HT40	MCS0	1	6	2437	36.70	2418.79	0.5	Pass
HT40	MCS0	1	9	2452	36.70	2433.79	0.5	Pass

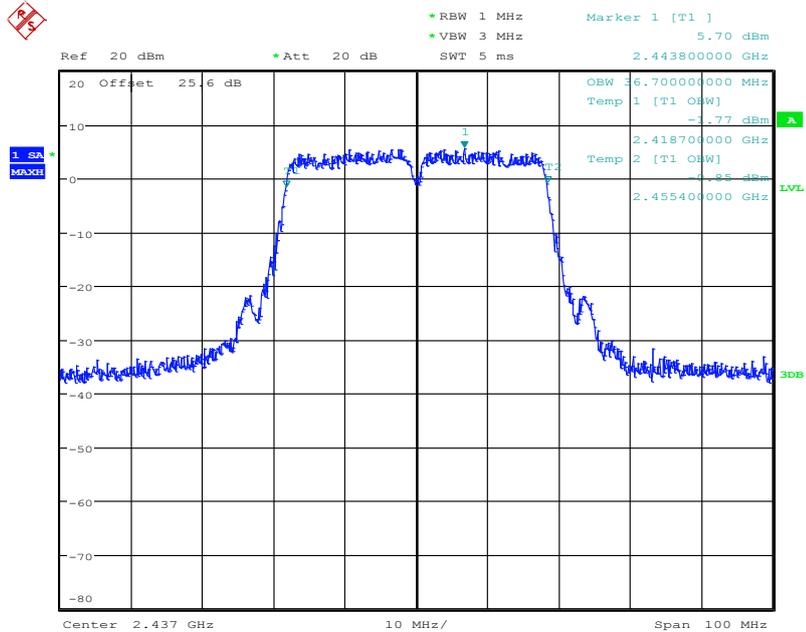


Minimum 6dB Bandwidth



Date: 13.AUG.2013 23:58:22

Maximum 99% Occupied Bandwidth



Date: 14.AUG.2013 00:27:00

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.

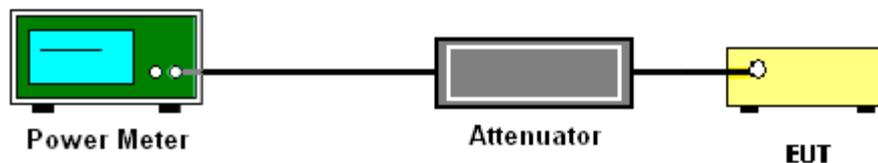
3.2.2 Measuring Instruments

See list of measuring instruments of this test report.

3.2.3 Test Procedures

1. The testing follows the Measurement Procedure of FCC KDB No. 558074 DTS D01 Meas. Guidance v03r01.
2. The RF output of EUT was connected to the power meter by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Measure the conducted output power and record the results in the test report.

3.2.4 Test Setup





3.2.5 Test Result of Peak Output Power

Test Mode :	2.4GHz	Temperature :	24~26°C
Test Engineer :	Alex Lee	Relative Humidity :	50~53%

Mod.	Data Rate	N _{TX}	Channel	Freq. (MHz)	RF Output Power (dBm)	Power Limit (dBm)	DG (dBi)	Pass/Fail
11b	1Mbps	1	1	2412	15.98	30	2.45	Pass
11b	1Mbps	1	6	2437	16.23	30	2.45	Pass
11b	1Mbps	1	11	2462	16.31	30	2.45	Pass
11g	6Mbps	1	1	2412	21.82	30	2.45	Pass
11g	6Mbps	1	6	2437	22.08	30	2.45	Pass
11g	6Mbps	1	11	2462	22.06	30	2.45	Pass
HT20	MCS0	1	1	2412	21.32	30	2.45	Pass
HT20	MCS0	1	6	2437	21.56	30	2.45	Pass
HT20	MCS0	1	11	2462	21.59	30	2.45	Pass
HT40	MCS0	1	3	2422	21.47	30	2.45	Pass
HT40	MCS0	1	6	2437	21.56	30	2.45	Pass
HT40	MCS0	1	9	2452	21.65	30	2.45	Pass

Note: Measured power (dBm) has offset with cable loss.



3.2.6 Test Result of Average output Power (Reporting Only)

Test Mode :	2.4GHz	Temperature :	24~26°C
Test Engineer :	Alex Lee	Relative Humidity :	50~53%

Mod.	Data Rate	N _{TX}	Channel	Freq. (MHz)	Duty Factor (dB)	Average Output Power (dBm)	Power Limit (dBm)	DG (dBi)	Pass/Fail
11b	1Mbps	1	1	2412	0.00	13.98	30	2.45	Pass
11b	1Mbps	1	6	2437	0.00	14.15	30	2.45	Pass
11b	1Mbps	1	11	2462	0.00	14.23	30	2.45	Pass
11g	6Mbps	1	1	2412	0.00	12.69	30	2.45	Pass
11g	6Mbps	1	6	2437	0.00	12.98	30	2.45	Pass
11g	6Mbps	1	11	2462	0.00	12.97	30	2.45	Pass
HT20	MCS0	1	1	2412	0.00	12.56	30	2.45	Pass
HT20	MCS0	1	6	2437	0.00	12.82	30	2.45	Pass
HT20	MCS0	1	11	2462	0.00	12.91	30	2.45	Pass
HT40	MCS0	1	3	2422	0.00	12.51	30	2.45	Pass
HT40	MCS0	1	6	2437	0.00	12.59	30	2.45	Pass
HT40	MCS0	1	9	2452	0.00	12.66	30	2.45	Pass

Note: Measured power (dBm) has offset with cable loss and duty factor.

3.3 Power Spectral Density Measurement

3.3.1 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.

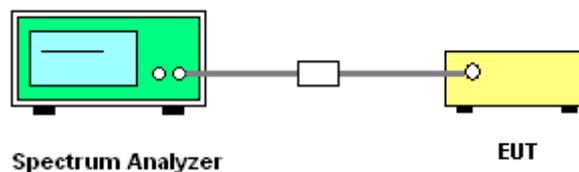
3.3.2 Measuring Instruments

See list of measuring instruments of this test report.

3.3.3 Test Procedures

1. The testing follows Measurement Procedure 10.2 Method PKPSD of FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v03r01
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 3 kHz. Video bandwidth VBW = 10 kHz In order to make an accurate measurement, set the span to 1.5 times DTS Channel Bandwidth. (6dB BW)
5. Detector = peak, Sweep time = auto couple, Trace mode = max hold, Allow trace to fully stabilize. Use the peak marker function to determine the maximum power level.
6. Measure and record the results in the test report.

3.3.4 Test Setup



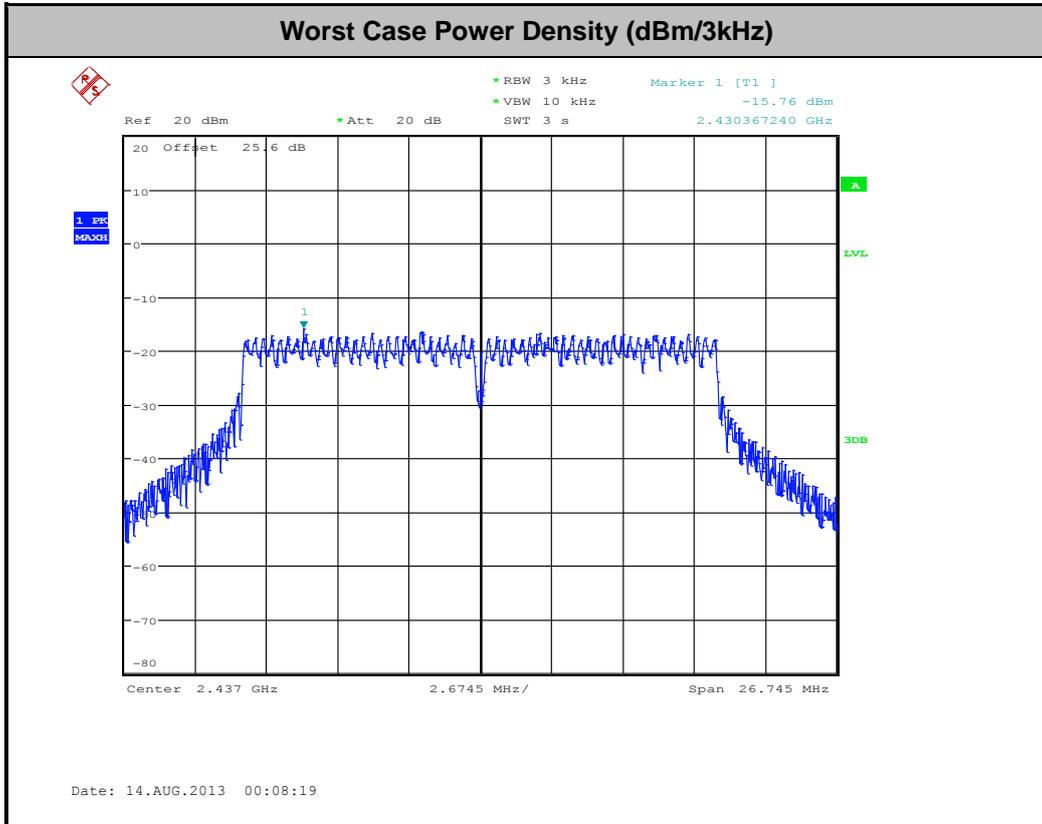


3.3.5 Test Result of Power Spectral Density

Test Mode :	2.4GHz	Temperature :	24~26°C
Test Engineer :	Alex Lee	Relative Humidity :	50~53%

Mod.	Data Rate	N _{TX}	Channel	Freq. (MHz)	Peak Power Density (dBm/3kHz)	Max. Limits (dBm/3kHz)	DG (dBi)	Pass/Fail
11b	1Mbps	1	1	2412	-16.45	8	2.45	Pass
11b	1Mbps	1	6	2437	-16.21	8	2.45	Pass
11b	1Mbps	1	11	2462	-16.40	8	2.45	Pass
11g	6Mbps	1	1	2412	-16.42	8	2.45	Pass
11g	6Mbps	1	6	2437	-16.48	8	2.45	Pass
11g	6Mbps	1	11	2462	-16.45	8	2.45	Pass
HT20	MCS0	1	1	2412	-15.87	8	2.45	Pass
HT20	MCS0	1	6	2437	-15.76	8	2.45	Pass
HT20	MCS0	1	11	2462	-15.88	8	2.45	Pass
HT40	MCS0	1	3	2422	-16.80	8	2.45	Pass
HT40	MCS0	1	6	2437	-17.28	8	2.45	Pass
HT40	MCS0	1	9	2452	-17.27	8	2.45	Pass

Note: Measured power density (dBm) has offset with cable loss.



3.4 Conducted Band Edges and Spurious Emission Measurement

3.4.1 Limit of Conducted Band Edges and Spurious Emission Measurement

In any 100 kHz bandwidth outside of the authorized frequency band, the emissions which fall in the non-restricted bands shall be attenuated at least 20 dB / 30dB relative to the maximum PSD level in 100 kHz by RF conducted measurement and radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a).

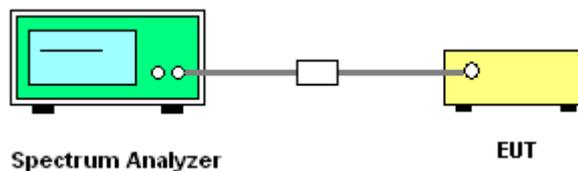
3.4.2 Measuring Instruments

See list of measuring instruments of this test report.

3.4.3 Test Procedures

1. The testing follows FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v03r01.
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Set RBW = 100 kHz, VBW=300 kHz, Peak Detector. Unwanted Emissions measured in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz when maximum peak conducted output power procedure is used. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required under this paragraph shall be 30 dB instead of 20 dB per 15.247(d).
5. Measure and record the results in the test report.
6. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

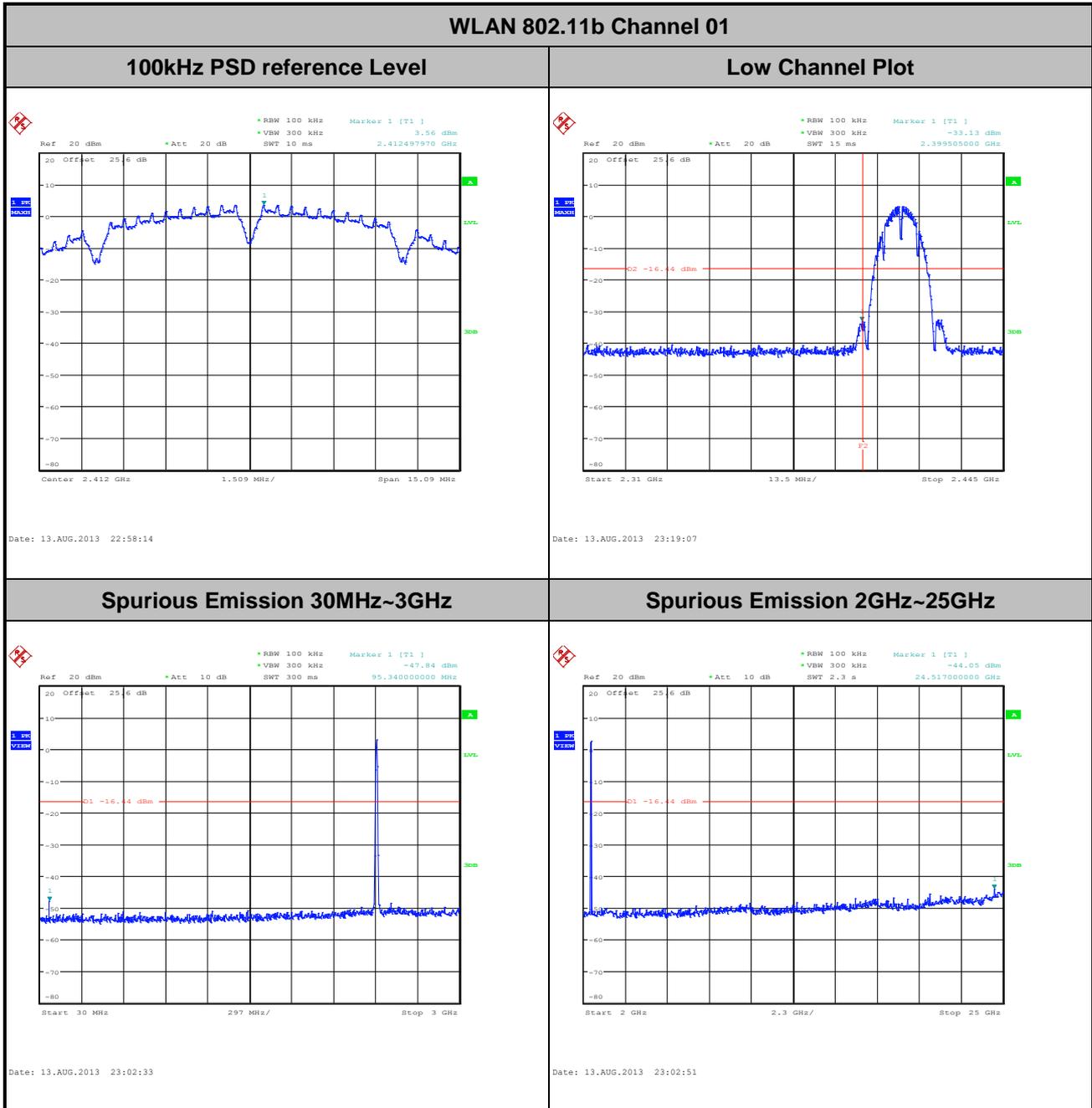
3.4.4 Test Setup





3.4.5 Test Result of Conducted Band Edges and Spurious Emission

Test Mode :	802.11b	Temperature :	24~26°C
Test Band :	2.4GHz Low	Relative Humidity :	50~53%
Test Channel :	01	Test Engineer :	Alex Lee

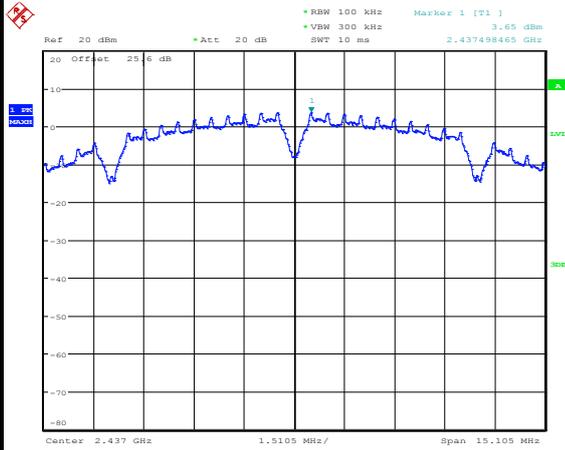




Test Mode :	802.11b	Temperature :	24~26°C
Test Band :	2.4GHz Mid	Relative Humidity :	50~53%
Test Channel :	06	Test Engineer :	Alex Lee

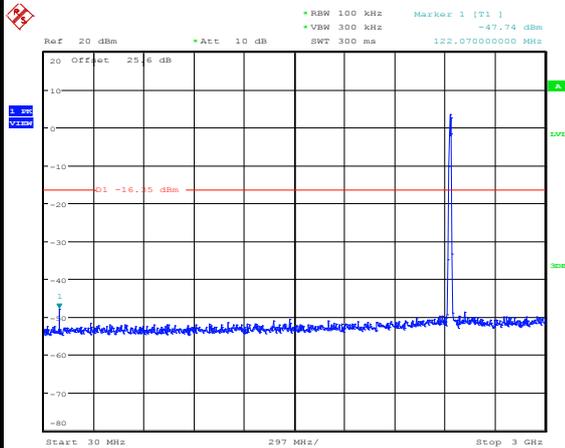
WLAN 802.11b Channel 06

100kHz PSD reference Level



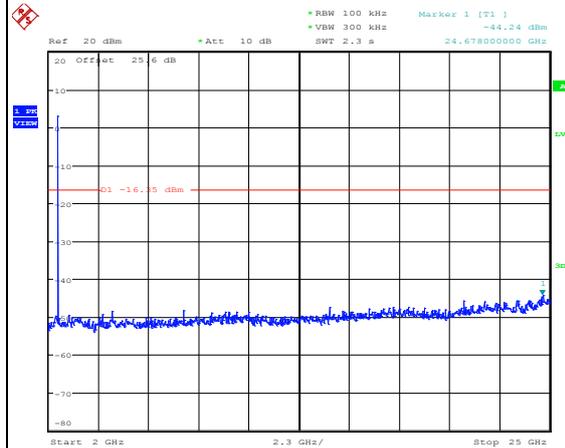
Date: 13.AUG.2013 23:09:02

Spurious Emission 30MHz~3GHz



Date: 13.AUG.2013 23:09:22

Spurious Emission 2GHz~25GHz



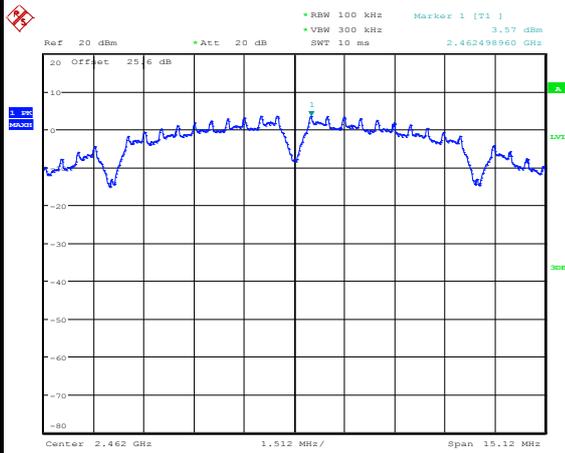
Date: 13.AUG.2013 23:09:40



Test Mode :	802.11b	Temperature :	24~26°C
Test Band :	2.4GHz High	Relative Humidity :	50~53%
Test Channel :	11	Test Engineer :	Alex Lee

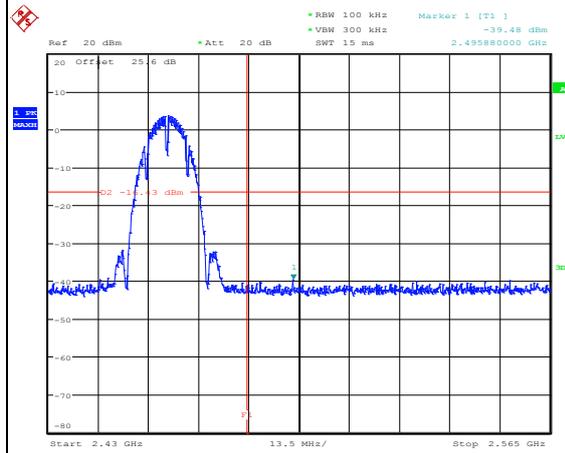
WLAN 802.11b Channel 11

100kHz PSD reference Level



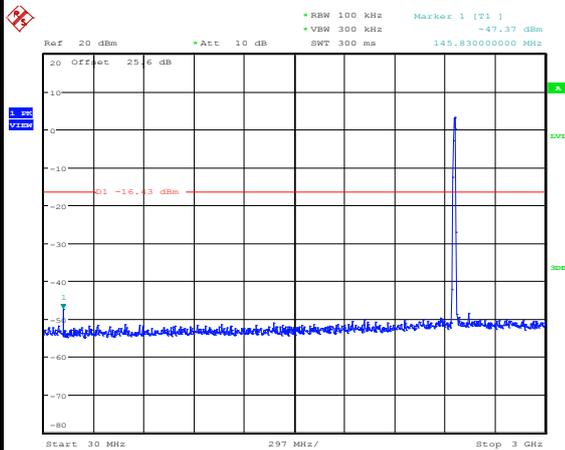
Date: 13.AUG.2013 23:13:21

High Channel Plot



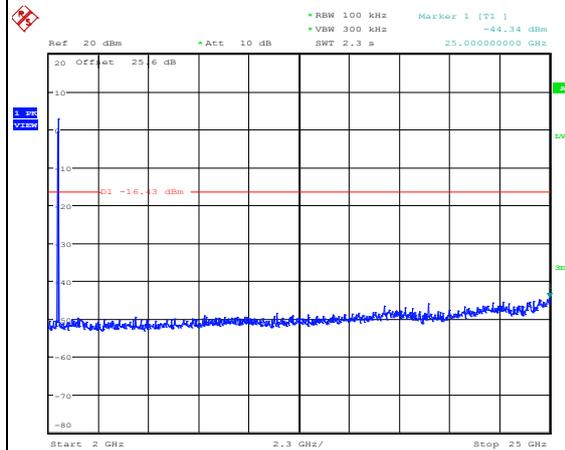
Date: 13.AUG.2013 23:19:55

Spurious Emission 30MHz~3GHz



Date: 13.AUG.2013 23:14:04

Spurious Emission 2GHz~25GHz



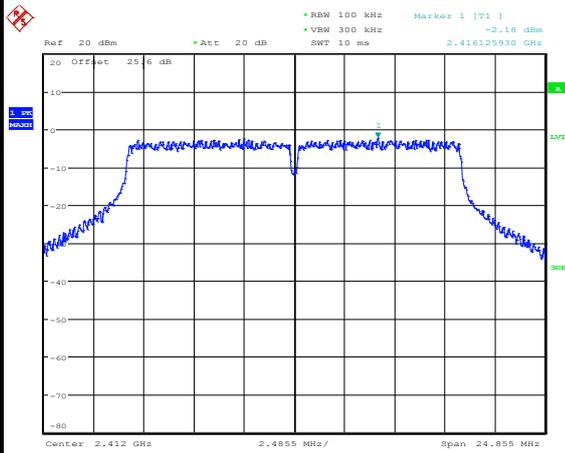
Date: 13.AUG.2013 23:14:22



Test Mode :	802.11g	Temperature :	24~26°C
Test Band :	2.4GHz Low	Relative Humidity :	50~53%
Test Channel :	01	Test Engineer :	Alex Lee

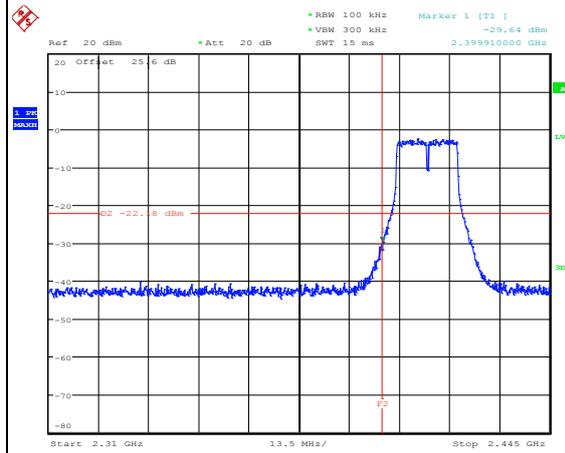
WLAN 802.11g Channel 01

100kHz PSD reference Level



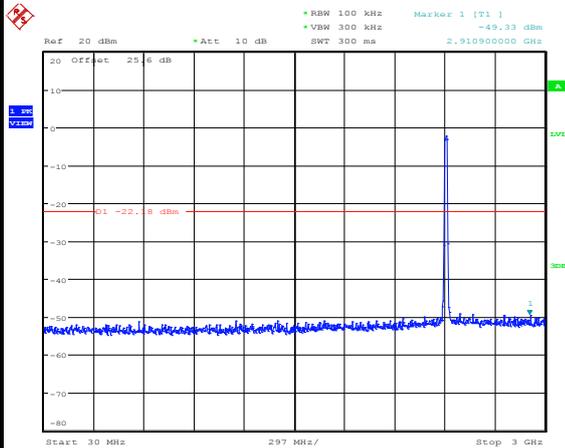
Date: 13.AUG.2013 23:26:26

Low Channel Plot



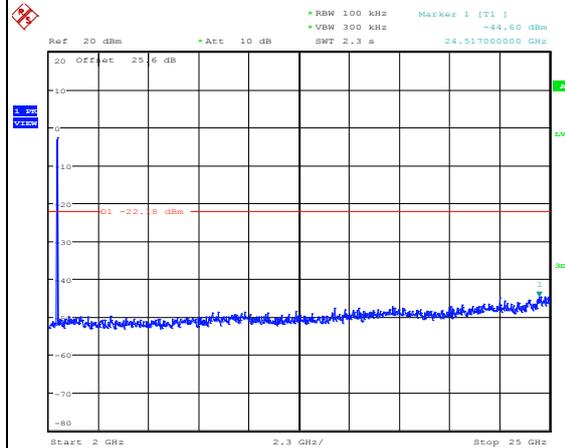
Date: 13.AUG.2013 23:28:09

Spurious Emission 30MHz~3GHz



Date: 13.AUG.2013 23:28:53

Spurious Emission 2GHz~25GHz



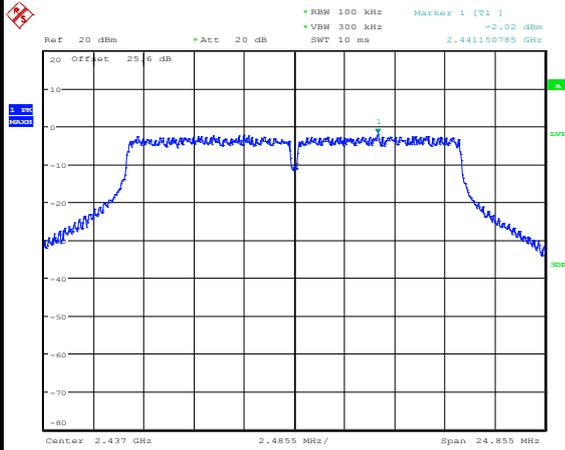
Date: 13.AUG.2013 23:29:11



Test Mode :	802.11g	Temperature :	24~26°C
Test Band :	2.4GHz Mid	Relative Humidity :	50~53%
Test Channel :	06	Test Engineer :	Alex Lee

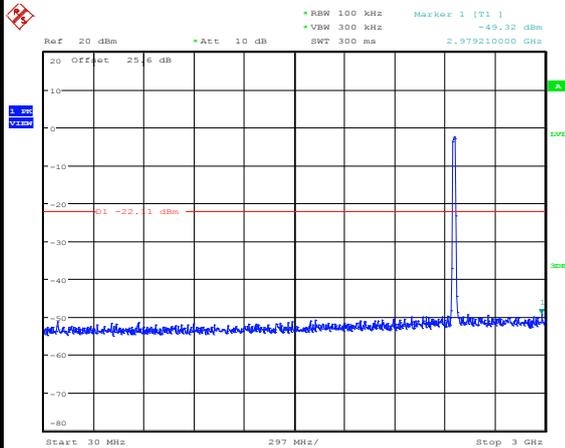
WLAN 802.11g Channel 06

100kHz PSD reference Level



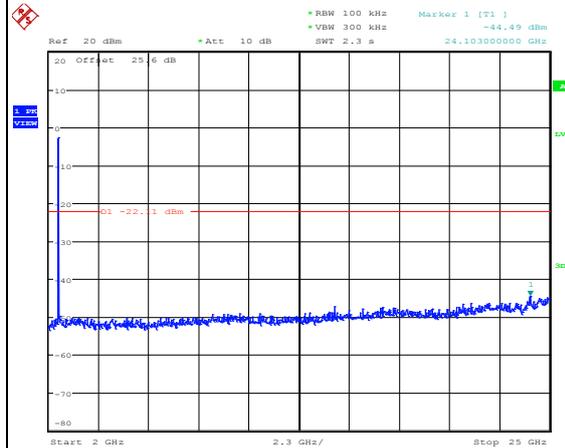
Date: 13.AUG.2013 23:39:40

Spurious Emission 30MHz~3GHz



Date: 13.AUG.2013 23:52:31

Spurious Emission 2GHz~25GHz



Date: 13.AUG.2013 23:52:49



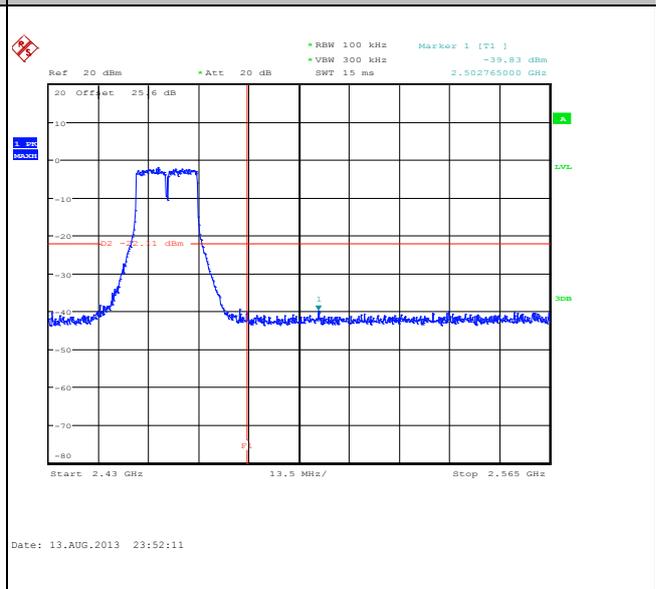
Test Mode :	802.11g	Temperature :	24~26°C
Test Band :	2.4GHz High	Relative Humidity :	50~53%
Test Channel :	11	Test Engineer :	Alex Lee

WLAN 802.11g Channel 11

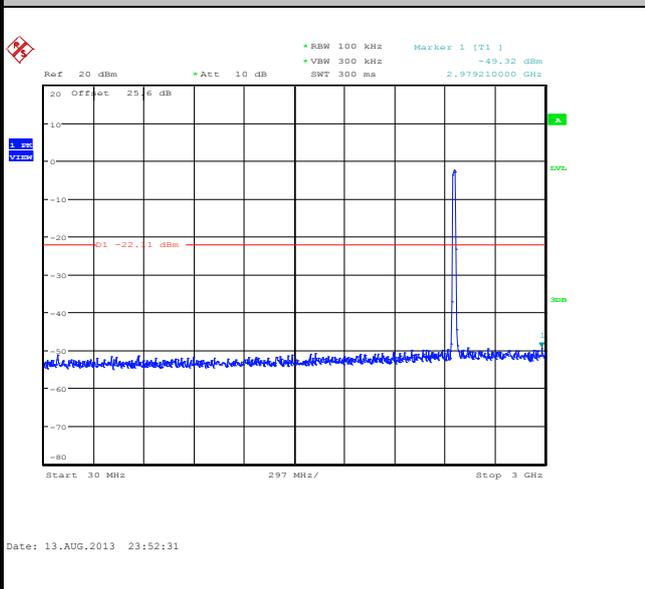
100kHz PSD reference Level



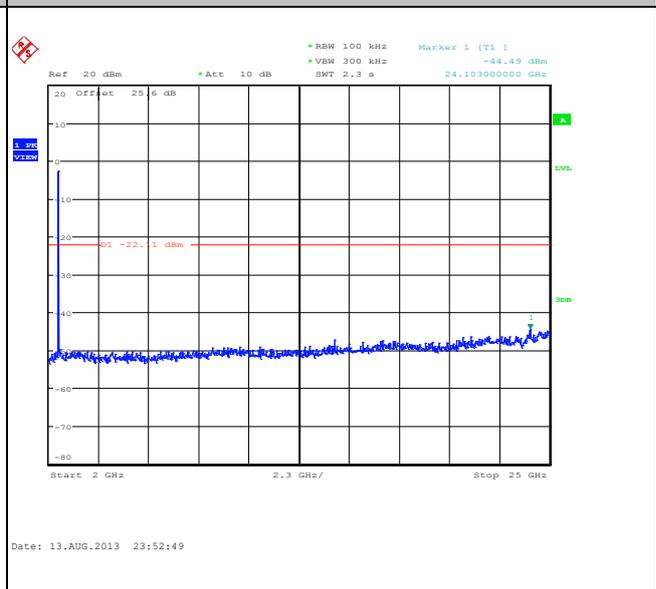
High Channel Plot



Spurious Emission 30MHz~3GHz



Spurious Emission 2GHz~25GHz

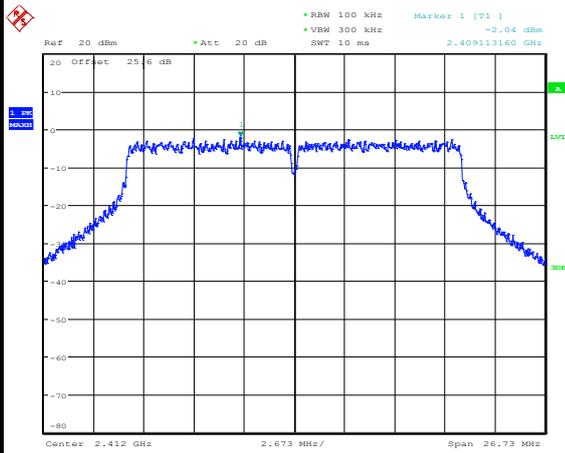




Test Mode :	802.11n HT20	Temperature :	24~26°C
Test Band :	2.4GHz Low	Relative Humidity :	50~53%
Test Channel :	01	Test Engineer :	Alex Lee

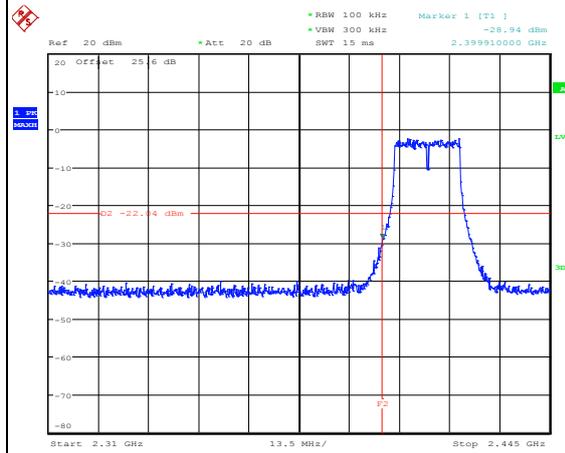
WLAN 802.11n HT20 Channel 01

100kHz PSD reference Level



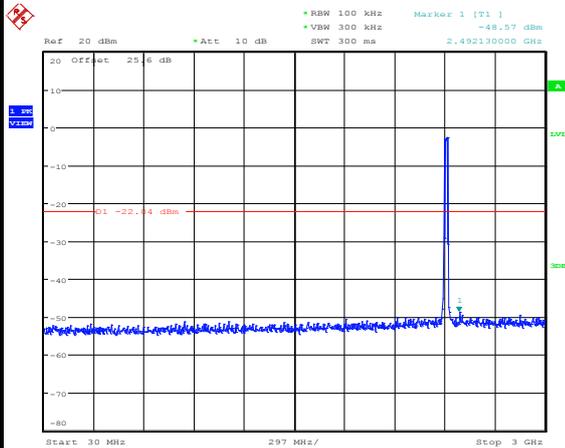
Date: 13.AUG.2013 23:58:56

Low Channel Plot



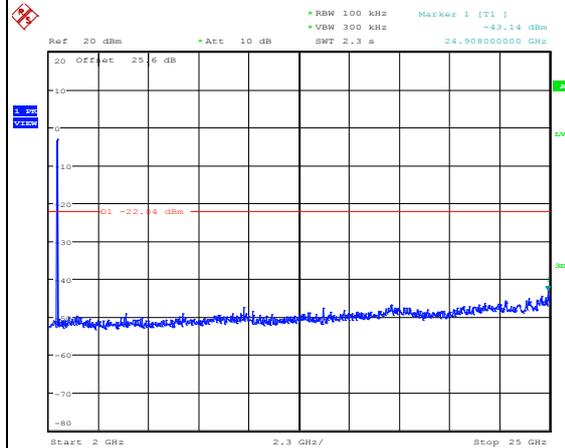
Date: 14.AUG.2013 00:06:03

Spurious Emission 30MHz~3GHz



Date: 13.AUG.2013 23:59:59

Spurious Emission 2GHz~25GHz



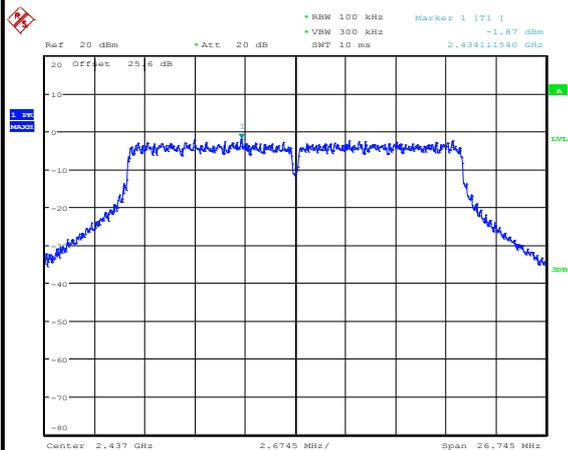
Date: 14.AUG.2013 00:00:17



Test Mode :	802.11n HT20	Temperature :	24~26°C
Test Band :	2.4GHz Mid	Relative Humidity :	50~53%
Test Channel :	06	Test Engineer :	Alex Lee

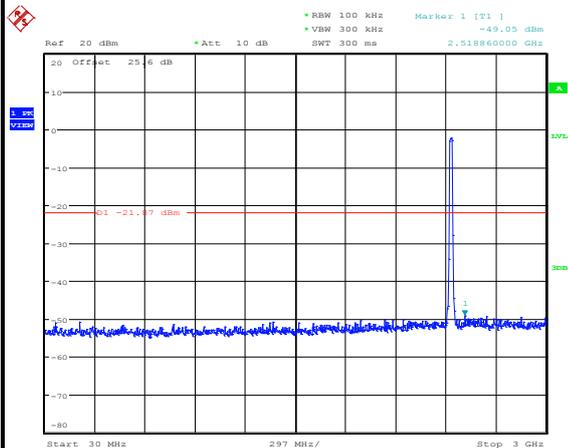
WLAN 802.11n HT20 Channel 06

100kHz PSD reference Level



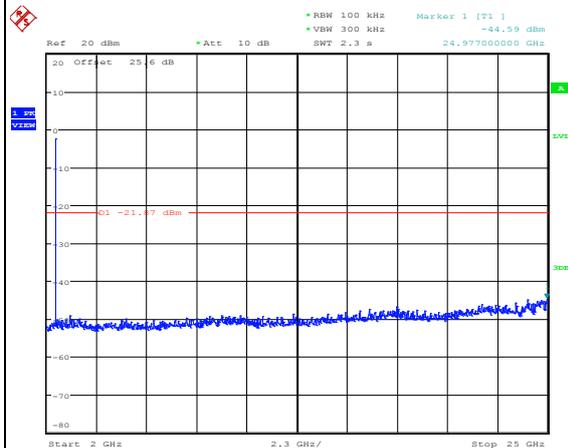
Date: 14.AUG.2013 00:08:30

Spurious Emission 30MHz~3GHz



Date: 14.AUG.2013 00:09:12

Spurious Emission 2GHz~25GHz



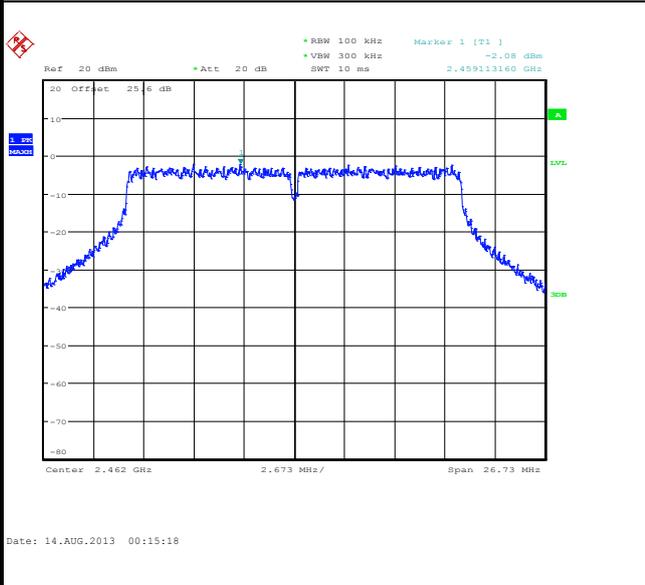
Date: 14.AUG.2013 00:09:30



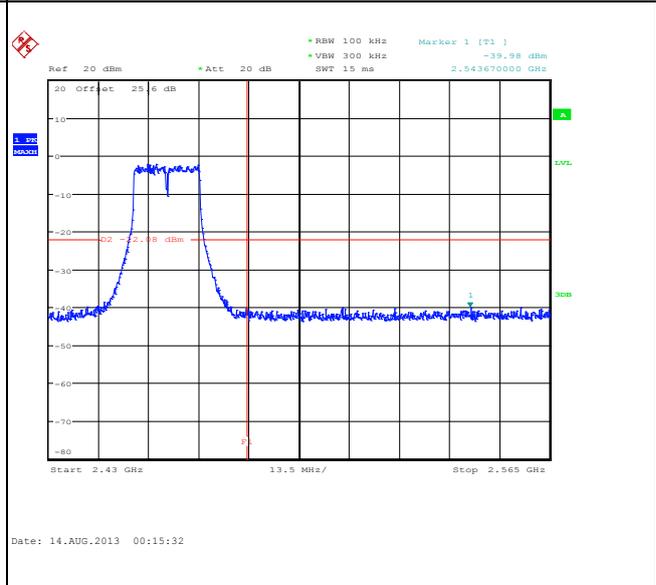
Test Mode :	802.11n HT20	Temperature :	24~26°C
Test Band :	2.4GHz High	Relative Humidity :	50~53%
Test Channel :	11	Test Engineer :	Alex Lee

WLAN 802.11n HT20 Channel 11

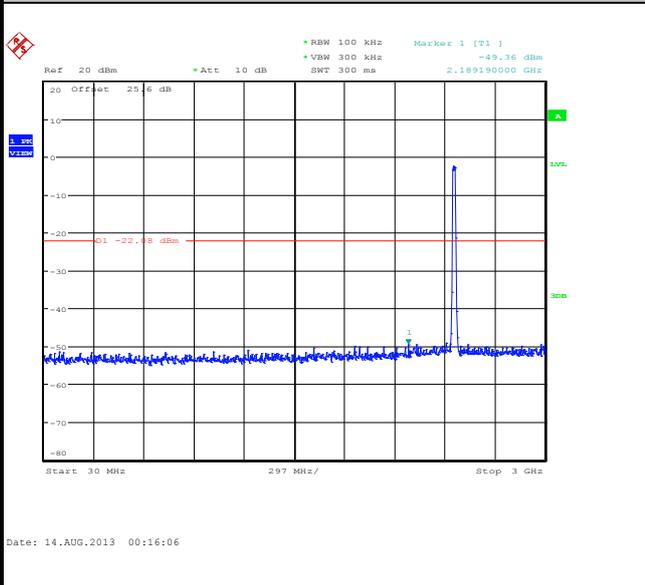
100kHz PSD reference Level



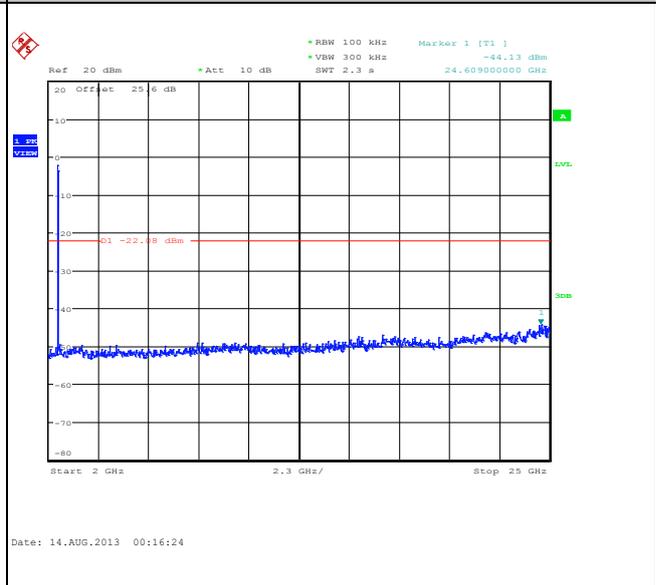
High Channel Plot



Spurious Emission 30MHz~3GHz



Spurious Emission 2GHz~25GHz

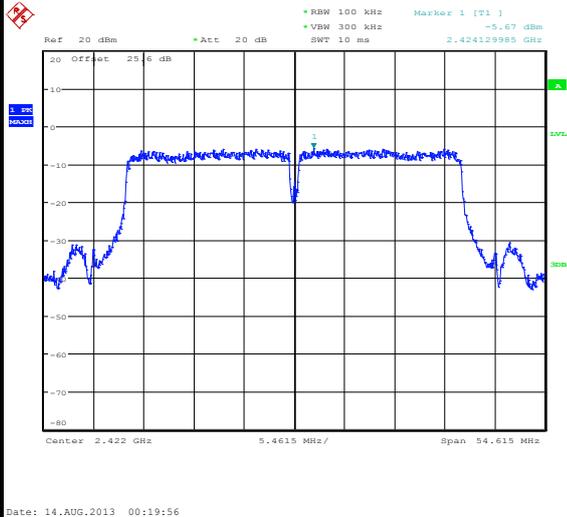




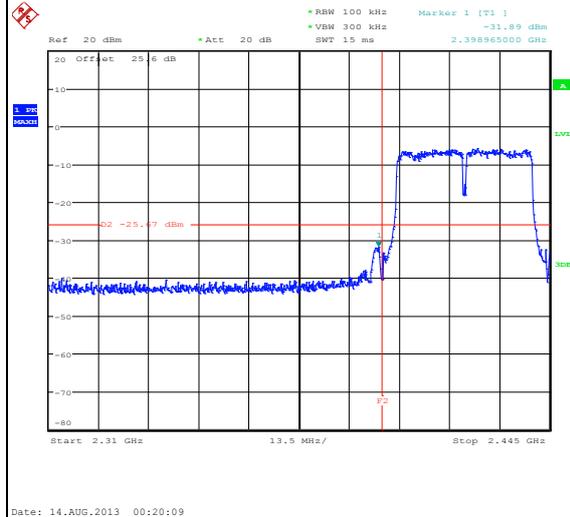
Test Mode :	802.11n HT40	Temperature :	24~26°C
Test Band :	2.4GHz Low	Relative Humidity :	50~53%
Test Channel :	03	Test Engineer :	Alex Lee

WLAN 802.11n HT40 Channel 03

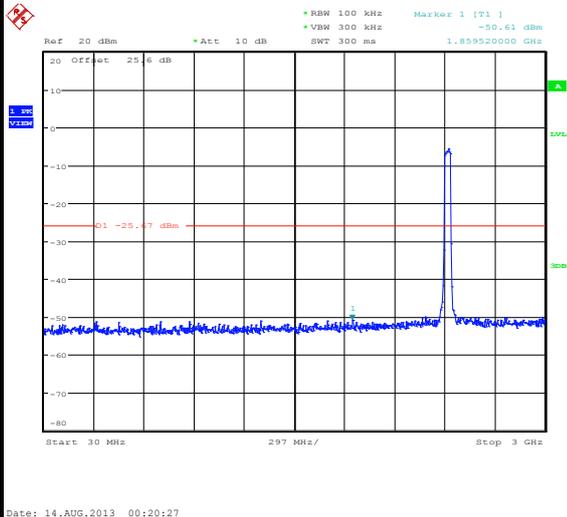
100kHz PSD reference Level



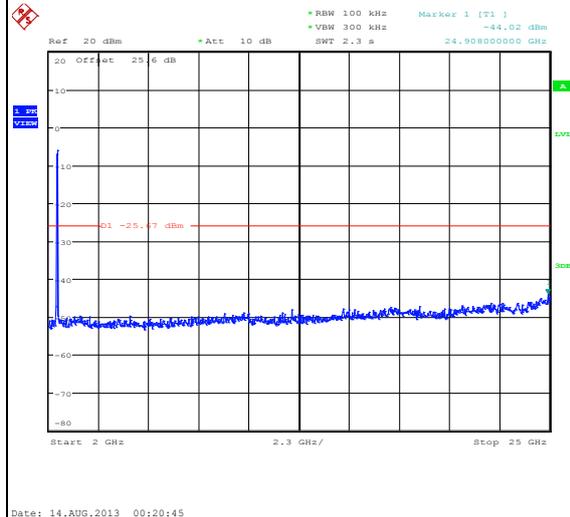
Low Channel Plot



Spurious Emission 30MHz~3GHz



Spurious Emission 2GHz~25GHz

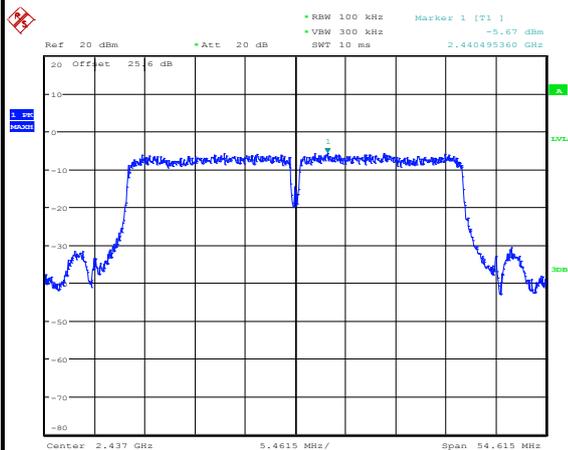




Test Mode :	802.11n HT40	Temperature :	24~26°C
Test Band :	2.4GHz Mid	Relative Humidity :	50~53%
Test Channel :	06	Test Engineer :	Alex Lee

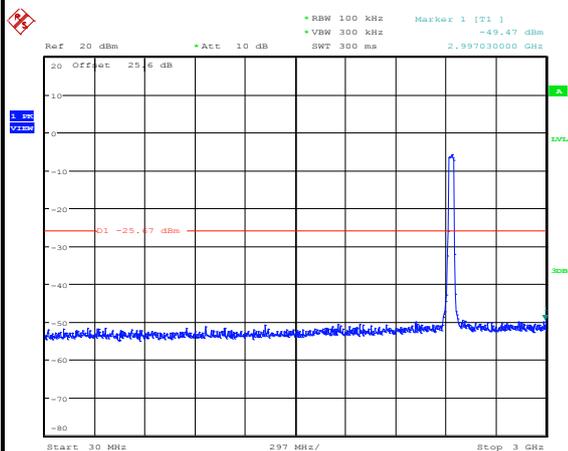
WLAN 802.11n HT40 Channel 06

100kHz PSD reference Level



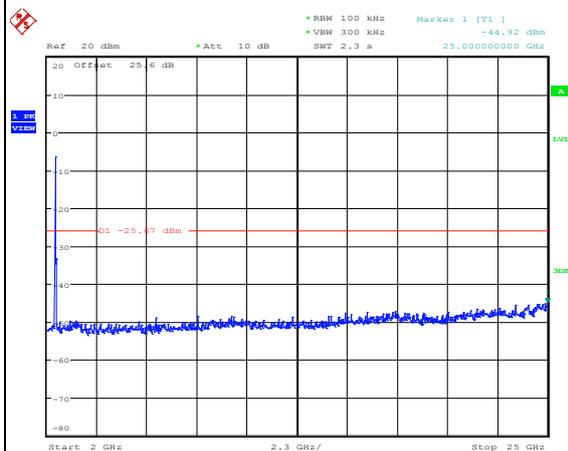
Date: 14.AUG.2013 00:26:13

Spurious Emission 30MHz~3GHz



Date: 14.AUG.2013 00:26:32

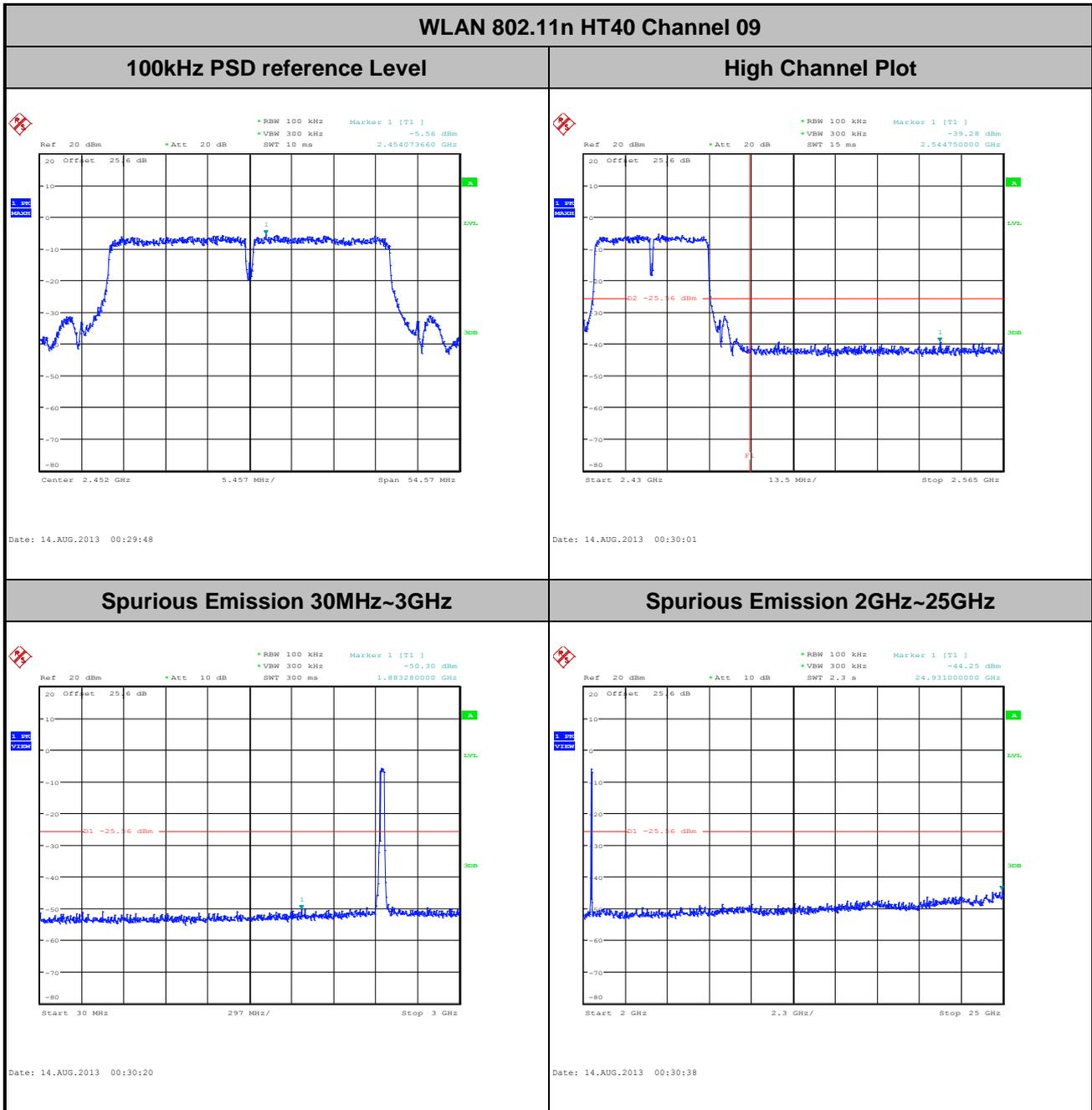
Spurious Emission 2GHz~25GHz



Date: 14.AUG.2013 00:26:50



Test Mode :	802.11n HT40	Temperature :	24~26°C
Test Band :	2.4GHz High	Relative Humidity :	50~53%
Test Channel :	09	Test Engineer :	Alex Lee



3.5 Radiated Band Edges and Spurious Emission Measurement

3.5.1 Limit of Radiated band edge and Spurious Emission Measurement

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

3.5.2 Measuring Instruments

See list of measuring instruments of this test report.



3.5.3 Test Procedures

1. The testing follows FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v03r01.
2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level.
3. The EUT was placed on a turntable with 0.8 meter above ground.
4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
5. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level
6. For measurement below 1GHz, If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.
7. Use the following spectrum analyzer settings:
 - (1) Span shall wide enough to fully capture the emission being measured;
 - (2) Set RBW=100 kHz for f < 1 GHz; VBW ≥ RBW; Sweep = auto; Detector function = peak; Trace = max hold;
 - (3) Set RBW = 1 MHz, VBW= 3MHz for f ≥ 1 GHz for peak measurement.

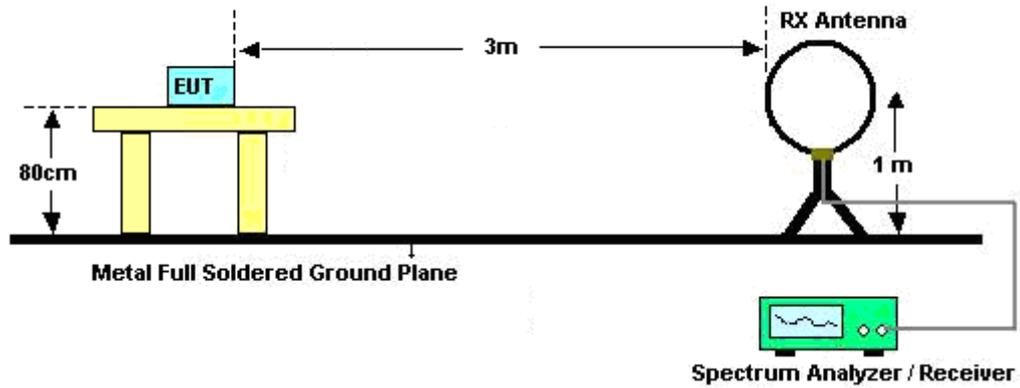
For average measurement:

 - VBW = 10 Hz, when duty cycle is no less than 98 percent.
 - VBW ≥ 1/T, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.

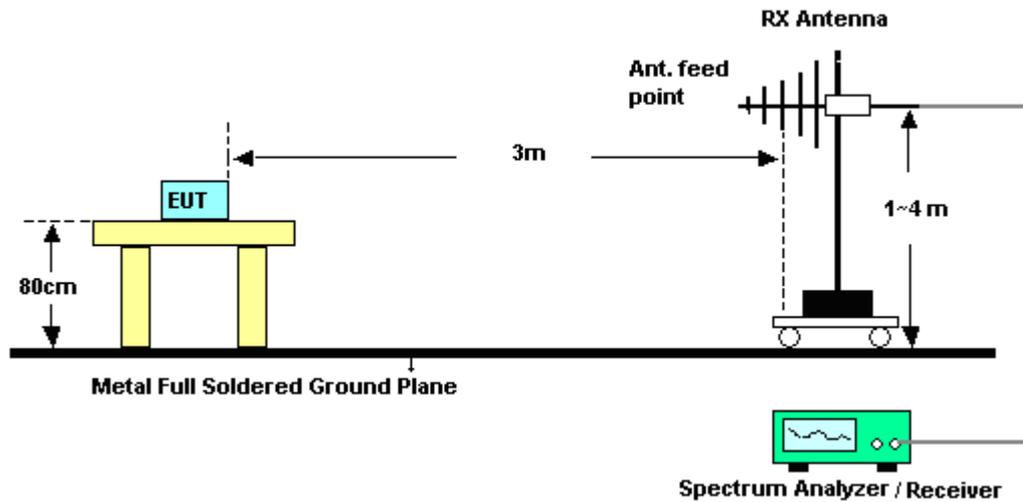
Band	Duty Cycle(%)	T(μs)	1/T(kHz)	VBW Setting
802.11b	100	-	-	10Hz
802.11g	100	-	-	10Hz
2.4GHz 802.11n HT20	100	-	-	10Hz
2.4GHz 802.11n HT40	100	-	-	10Hz

3.5.4 Test Setup

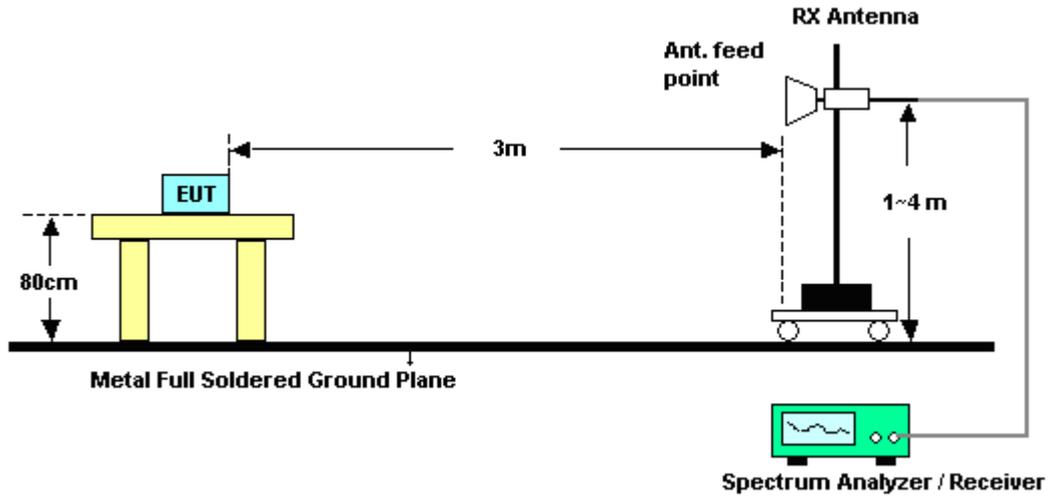
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



3.5.5 Test Results of Radiated Spurious Emissions (9kHz ~ 30MHz)

The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line per 15.31(o) was not reported.



3.5.6 Test Result of Radiated Spurious at Band Edges

Test Mode :	802.11b	Temperature :	22~24°C
Test Band :	Low	Relative Humidity :	47~49%
Test Channel :	01	Test Engineer :	Marlboro Hsu

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2387.31	54.5	-19.5	74	50.46	31.92	6.45	34.33	100	239	Peak
2386.59	42.4	-11.6	54	38.36	31.92	6.45	34.33	100	239	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2385.87	52.14	-21.86	74	48.1	31.92	6.45	34.33	100	272	Peak
2385.96	39.59	-14.41	54	35.55	31.92	6.45	34.33	100	272	Average

Test Mode :	802.11b	Temperature :	22~24°C
Test Band :	High	Relative Humidity :	47~49%
Test Channel :	11	Test Engineer :	Marlboro Hsu

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2486.89	54.08	-19.92	74	49.8	31.99	6.59	34.3	100	236	Peak
2487.67	41.82	-12.18	54	37.53	32	6.59	34.3	100	236	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2488.84	52.92	-21.08	74	48.63	32	6.59	34.3	100	270	Peak
2488.06	40.67	-13.33	54	36.38	32	6.59	34.3	100	270	Average



Test Mode :	802.11g	Temperature :	22~24°C
Test Band :	Low	Relative Humidity :	47~49%
Test Channel :	01	Test Engineer :	Marlboro Hsu

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2389.83	62.38	-11.62	74	58.34	31.92	6.45	34.33	100	238	Peak
2390	44.54	-9.46	54	40.5	31.92	6.45	34.33	100	238	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2390	59.05	-14.95	74	55.01	31.92	6.45	34.33	104	274	Peak
2390	41.86	-12.14	54	37.82	31.92	6.45	34.33	104	274	Average

Test Mode :	802.11g	Temperature :	22~24°C
Test Band :	High	Relative Humidity :	47~49%
Test Channel :	11	Test Engineer :	Marlboro Hsu

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2484.04	61.97	-12.03	74	57.69	31.99	6.59	34.3	100	234	Peak
2483.5	44.97	-9.03	54	40.69	31.99	6.59	34.3	100	234	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2483.83	58.89	-15.11	74	54.61	31.99	6.59	34.3	100	266	Peak
2483.5	42.84	-11.16	54	38.56	31.99	6.59	34.3	100	266	Average



Test Mode :	802.11n HT20	Temperature :	22~24°C
Test Band :	Low	Relative Humidity :	47~49%
Test Channel :	01	Test Engineer :	Marlboro Hsu

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2389.74	66.65	-7.35	74	62.61	31.92	6.45	34.33	102	236	Peak
2390	45.99	-8.01	54	41.95	31.92	6.45	34.33	102	236	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2389.92	63.95	-10.05	74	59.91	31.92	6.45	34.33	104	272	Peak
2390	42.65	-11.35	54	38.61	31.92	6.45	34.33	104	272	Average

Test Mode :	802.11n HT20	Temperature :	22~24°C
Test Band :	High	Relative Humidity :	47~49%
Test Channel :	11	Test Engineer :	Marlboro Hsu

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2483.5	66.82	-7.18	74	62.54	31.99	6.59	34.3	100	238	Peak
2483.5	45.44	-8.56	54	41.16	31.99	6.59	34.3	100	238	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2483.5	64.67	-9.33	74	60.39	31.99	6.59	34.3	100	261	Peak
2483.5	43.47	-10.53	54	39.19	31.99	6.59	34.3	100	261	Average



Test Mode :	802.11n HT40	Temperature :	22~24°C
Test Band :	Low	Relative Humidity :	47~49%
Test Channel :	03	Test Engineer :	Marlboro Hsu

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2388.57	65.83	-8.17	74	61.79	31.92	6.45	34.33	100	239	Peak
2390	48.39	-5.61	54	44.35	31.92	6.45	34.33	100	239	Average
2485.36	54.32	-19.68	74	50.04	31.99	6.59	34.3	100	239	Peak
2484.55	41.87	-12.13	54	37.59	31.99	6.59	34.3	100	239	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2388.03	61.18	-12.82	74	57.14	31.92	6.45	34.33	102	257	Peak
2390	43.87	-10.13	54	39.83	31.92	6.45	34.33	102	257	Average
2484.91	53.24	-20.76	74	48.96	31.99	6.59	34.3	102	257	Peak
2484.85	40.43	-13.57	54	36.15	31.99	6.59	34.3	102	257	Average



Test Mode :	802.11n HT40	Temperature :	22~24°C
Test Band :	High	Relative Humidity :	47~49%
Test Channel :	09	Test Engineer :	Marlboro Hsu

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2389.83	55.37	-18.63	74	51.33	31.92	6.45	34.33	100	239	Peak
2371.92	41.8	-12.2	54	37.81	31.9	6.42	34.33	100	239	Average
2487.91	66.98	-7.02	74	62.69	32	6.59	34.3	100	239	Peak
2483.5	48.94	-5.06	54	44.66	31.99	6.59	34.3	100	239	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2382.81	51.17	-22.83	74	47.15	31.9	6.45	34.33	100	274	Peak
2372.01	39.07	-14.93	54	35.08	31.9	6.42	34.33	100	274	Average
2487.91	66.39	-7.61	74	62.1	32	6.59	34.3	100	274	Peak
2483.5	46.46	-7.54	54	42.18	31.99	6.59	34.3	100	274	Average



3.5.7 Test Result of Radiated Spurious Emission (30MHz ~ 10th Harmonic)

Note: Pre-scanned all test modes and only choose the worst case mode recorded in the test report for radiated spurious emission below 1GHz.

Test Mode :	802.11b	Temperature :	22~24°C
Test Channel :	01	Relative Humidity :	47~49%
Test Engineer :	Marlboro Hsu	Polarization :	Horizontal
Remark :	1. 2413 MHz is fundamental signal which can be ignored. 2. 7236 MHz is not within a restricted band, and its limit line is 20dB below the highest emission level. For example, 108.36 dBμV/m - 20dB = 88.36dBμV/m. 3. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
65.64	22.73	-17.27	40	47.22	6.36	0.92	31.77	-	-	Peak
97.5	26.24	-17.26	43.5	46.38	10.52	1.09	31.75	-	-	Peak
240.06	29.11	-16.89	46	47.76	11.4	1.69	31.74	-	-	Peak
527.5	39.11	-6.89	46	50.54	18.02	2.52	31.97	100	104	Peak
791.4	29.26	-16.74	46	38.36	19.8	3.06	31.96	-	-	Peak
816.6	32.42	-13.58	46	41.21	19.97	3.12	31.88	-	-	Peak
2413	103.63	-	-	99.54	31.93	6.49	34.33	100	239	Average
2413	108.36	-	-	104.27	31.93	6.49	34.33	100	239	Peak
4824	49.29	-24.71	74	60.31	34.4	10.17	55.59	100	0	Peak
7236	49.81	-38.55	88.36	59.61	35.66	10.96	56.42	100	0	Peak



Test Mode :	802.11b	Temperature :	22~24°C
Test Channel :	01	Relative Humidity :	47~49%
Test Engineer :	Marlboro Hsu	Polarization :	Vertical
Remark :	1. 2412 MHz is fundamental signal which can be ignored. 2. 7236 MHz is not within a restricted band, and its limit line is 20dB below the highest emission level. 3. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
36.75	34.2	-5.8	40	50.7	14.58	0.71	31.79	100	13	Peak
54.84	31.37	-8.63	40	55.71	6.6	0.84	31.78	-	-	Peak
65.64	30.33	-9.67	40	54.82	6.36	0.92	31.77	-	-	Peak
476.4	24.73	-21.27	46	37	17.32	2.31	31.9	-	-	Peak
527.5	37.91	-8.09	46	49.34	18.02	2.52	31.97	-	-	Peak
816.6	27.23	-18.77	46	36.02	19.97	3.12	31.88	-	-	Peak
2412	99.65	-	-	95.56	31.93	6.49	34.33	100	272	Average
2412	104.73	-	-	100.64	31.93	6.49	34.33	100	272	Peak
4824	47.34	-26.66	74	58.36	34.4	10.17	55.59	100	0	Peak
7236	49.31	-35.42	84.73	59.11	35.66	10.96	56.42	100	0	Peak



Test Mode :	802.11b	Temperature :	22~24°C
Test Channel :	06	Relative Humidity :	47~49%
Test Engineer :	Marlboro Hsu	Polarization :	Horizontal
Remark :	1. 2438 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2438	103.71	-	-	99.55	31.96	6.52	34.32	100	237	Average
2438	108.37	-	-	104.21	31.96	6.52	34.32	100	237	Peak
4875	48.46	-25.54	74	59.59	34.37	10.18	55.68	100	0	Peak
7311	50.27	-23.73	74	60	35.61	10.94	56.28	100	0	Peak

Test Mode :	802.11b	Temperature :	22~24°C
Test Channel :	06	Relative Humidity :	47~49%
Test Engineer :	Marlboro Hsu	Polarization :	Vertical
Remark :	1. 2438 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2438	100.68	-	-	96.52	31.96	6.52	34.32	102	265	Average
2438	105.4	-	-	101.24	31.96	6.52	34.32	102	265	Peak
4875	47.62	-26.38	74	58.75	34.37	10.18	55.68	100	0	Peak
7311	49.15	-24.85	74	58.88	35.61	10.94	56.28	100	0	Peak



Test Mode :	802.11b	Temperature :	22~24°C
Test Channel :	11	Relative Humidity :	47~49%
Test Engineer :	Marlboro Hsu	Polarization :	Horizontal
Remark :	1. 2463 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2463	103.06	-	-	98.84	31.97	6.56	34.31	100	236	Average
2463	107.81	-	-	103.59	31.97	6.56	34.31	100	236	Peak
4923	48.51	-25.49	74	59.75	34.34	10.2	55.78	100	0	Peak
7386	49.06	-24.94	74	58.69	35.56	10.92	56.11	100	0	Peak

Test Mode :	802.11b	Temperature :	22~24°C
Test Channel :	11	Relative Humidity :	47~49%
Test Engineer :	Marlboro Hsu	Polarization :	Vertical
Remark :	1. 2462 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2462	100.13	-	-	95.91	31.97	6.56	34.31	100	270	Average
2462	104.88	-	-	100.66	31.97	6.56	34.31	100	270	Peak
4923	48.1	-25.9	74	59.34	34.34	10.2	55.78	100	0	Peak
7386	49.37	-24.63	74	59	35.56	10.92	56.11	100	0	Peak



Test Mode :	802.11g	Temperature :	22~24°C
Test Channel :	01	Relative Humidity :	47~49%
Test Engineer :	Marlboro Hsu	Polarization :	Horizontal
Remark :	<ol style="list-style-type: none"> 2413 MHz is fundamental signal which can be ignored. 7236 MHz is not within a restricted band, and its limit line is 20dB below the highest emission level. Average measurement was not performed if peak level went lower than the average limit. 		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2413	97.25	-	-	93.16	31.93	6.49	34.33	100	238	Average
2413	108.23	-	-	104.14	31.93	6.49	34.33	100	238	Peak
4824	48.13	-25.87	74	59.15	34.4	10.17	55.59	100	0	Peak
7236	48.74	-39.49	88.23	58.54	35.66	10.96	56.42	100	0	Peak

Test Mode :	802.11g	Temperature :	22~24°C
Test Channel :	01	Relative Humidity :	47~49%
Test Engineer :	Marlboro Hsu	Polarization :	Vertical
Remark :	<ol style="list-style-type: none"> 2413 MHz is fundamental signal which can be ignored. 7236 MHz is not within a restricted band, and its limit line is 20dB below the highest emission level. Average measurement was not performed if peak level went lower than the average limit. 		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2413	95.55	-	-	91.46	31.93	6.49	34.33	104	274	Average
2413	106.4	-	-	102.31	31.93	6.49	34.33	104	274	Peak
4824	47.14	-26.86	74	58.16	34.4	10.17	55.59	100	0	Peak
7236	48.76	-37.64	86.4	58.56	35.66	10.96	56.42	100	0	Peak



Test Mode :	802.11g	Temperature :	22~24°C
Test Channel :	06	Relative Humidity :	47~49%
Test Engineer :	Marlboro Hsu	Polarization :	Horizontal
Remark :	1. 2438 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2438	97.99	-	-	93.83	31.96	6.52	34.32	100	236	Average
2438	108.96	-	-	104.8	31.96	6.52	34.32	100	236	Peak
4875	48.17	-25.83	74	59.3	34.37	10.18	55.68	100	0	Peak
7311	49.57	-24.43	74	59.3	35.61	10.94	56.28	100	0	Peak

Test Mode :	802.11g	Temperature :	22~24°C
Test Channel :	06	Relative Humidity :	47~49%
Test Engineer :	Marlboro Hsu	Polarization :	Vertical
Remark :	1. 2438 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2438	95.4	-	-	91.24	31.96	6.52	34.32	100	258	Average
2438	106.15	-	-	101.99	31.96	6.52	34.32	100	258	Peak
4875	47.19	-26.81	74	58.32	34.37	10.18	55.68	100	0	Peak
7311	49.06	-24.94	74	58.79	35.61	10.94	56.28	100	0	Peak



Test Mode :	802.11g	Temperature :	22~24°C
Test Channel :	11	Relative Humidity :	47~49%
Test Engineer :	Marlboro Hsu	Polarization :	Horizontal
Remark :	1. 2463 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
97.5	25.99	-17.51	43.5	46.13	10.52	1.09	31.75	-	-	Peak
138.54	24.89	-18.61	43.5	44.33	11	1.31	31.75	-	-	Peak
240.06	28.76	-17.24	46	47.41	11.4	1.69	31.74	-	-	Peak
527.5	31.53	-14.47	46	42.96	18.02	2.52	31.97	-	-	Peak
720	27.92	-18.08	46	37.78	19.2	2.95	32.01	-	-	Peak
816.6	32.86	-13.14	46	41.65	19.97	3.12	31.88	100	77	Peak
2463	97.58	-	-	93.36	31.97	6.56	34.31	100	234	Average
2463	108.37	-	-	104.15	31.97	6.56	34.31	100	234	Peak
4923	48.01	-25.99	74	59.25	34.34	10.2	55.78	100	0	Peak
7386	49.15	-24.85	74	58.78	35.56	10.92	56.11	100	0	Peak



Test Mode :	802.11g	Temperature :	22~24°C
Test Channel :	11	Relative Humidity :	47~49%
Test Engineer :	Marlboro Hsu	Polarization :	Vertical
Remark :	1. 2463 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
35.94	27.2	-12.8	40	43.25	15.04	0.7	31.79	-	-	Peak
56.46	31.42	-8.58	40	55.89	6.46	0.85	31.78	100	141	Peak
65.64	30.08	-9.92	40	54.57	6.36	0.92	31.77	-	-	Peak
476.4	28.65	-17.35	46	40.92	17.32	2.31	31.9	-	-	Peak
527.5	33.21	-12.79	46	44.64	18.02	2.52	31.97	-	-	Peak
720	25.54	-20.46	46	35.4	19.2	2.95	32.01	-	-	Peak
2463	95.45	-	-	91.23	31.97	6.56	34.31	100	266	Average
2463	106.21	-	-	101.99	31.97	6.56	34.31	100	266	Peak
4923	48.17	-25.83	74	59.41	34.34	10.2	55.78	100	0	Peak
7386	48.85	-25.15	74	58.48	35.56	10.92	56.11	100	0	Peak



Test Mode :	2.4GHz 802.11n HT20	Temperature :	22~24°C
Test Channel :	01	Relative Humidity :	47~49%
Test Engineer :	Marlboro Hsu	Polarization :	Horizontal
Remark :	<ol style="list-style-type: none"> 2413 MHz is fundamental signal which can be ignored. 7236 MHz is not within a restricted band, and its limit line is 20dB below the highest emission level. Average measurement was not performed if peak level went lower than the average limit. 		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2413	97.92	-	-	93.83	31.93	6.49	34.33	102	236	Average
2413	108.74	-	-	104.65	31.93	6.49	34.33	102	236	Peak
4824	48.71	-25.29	74	59.73	34.4	10.17	55.59	100	0	Peak
7236	49.33	-39.41	88.74	59.13	35.66	10.96	56.42	100	0	Peak

Test Mode :	2.4GHz 802.11n HT20	Temperature :	22~24°C
Test Channel :	01	Relative Humidity :	47~49%
Test Engineer :	Marlboro Hsu	Polarization :	Vertical
Remark :	<ol style="list-style-type: none"> 2413 MHz is fundamental signal which can be ignored. 7236 MHz is not within a restricted band, and its limit line is 20dB below the highest emission level. Average measurement was not performed if peak level went lower than the average limit. 		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2413	95.37	-	-	91.28	31.93	6.49	34.33	104	272	Average
2413	106.17	-	-	102.08	31.93	6.49	34.33	104	272	Peak
4824	47.57	-26.43	74	58.59	34.4	10.17	55.59	100	0	Peak
7236	49.13	-37.04	86.17	58.93	35.66	10.96	56.42	100	0	Peak



Test Mode :	2.4GHz 802.11n HT20	Temperature :	22~24°C
Test Channel :	06	Relative Humidity :	47~49%
Test Engineer :	Marlboro Hsu	Polarization :	Horizontal
Remark :	1. 2436 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2436	98.13	-	-	93.99	31.94	6.52	34.32	100	238	Average
2436	109.4	-	-	105.26	31.94	6.52	34.32	100	238	Peak
4875	48.52	-25.48	74	59.65	34.37	10.18	55.68	100	0	Peak
7311	48.26	-25.74	74	57.99	35.61	10.94	56.28	100	0	Peak

Test Mode :	2.4GHz 802.11n HT20	Temperature :	22~24°C
Test Channel :	06	Relative Humidity :	47~49%
Test Engineer :	Marlboro Hsu	Polarization :	Vertical
Remark :	1. 2438 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2438	95.42	-	-	91.26	31.96	6.52	34.32	102	264	Average
2438	106.42	-	-	102.26	31.96	6.52	34.32	102	264	Peak
4875	47.5	-26.5	74	58.63	34.37	10.18	55.68	100	0	Peak
7311	48.58	-25.42	74	58.31	35.61	10.94	56.28	100	0	Peak



Test Mode :	2.4GHz 802.11n HT20	Temperature :	22~24°C
Test Channel :	11	Relative Humidity :	47~49%
Test Engineer :	Marlboro Hsu	Polarization :	Horizontal
Remark :	1. 2463 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
64.56	22.18	-17.82	40	46.74	6.3	0.91	31.77	-	-	Peak
98.85	26.25	-17.25	43.5	46.14	10.76	1.1	31.75	-	-	Peak
240.06	28.53	-17.47	46	47.18	11.4	1.69	31.74	-	-	Peak
300	29.13	-16.87	46	45.74	13.2	1.91	31.72	-	-	Peak
527.5	32.99	-13.01	46	44.42	18.02	2.52	31.97	100	54	Peak
816.6	32.83	-13.17	46	41.62	19.97	3.12	31.88	-	-	Peak
2463	97.19	-	-	92.97	31.97	6.56	34.31	100	238	Average
2463	108.31	-	-	104.09	31.97	6.56	34.31	100	238	Peak
4924	47.35	-26.65	74	58.58	34.34	10.21	55.78	100	0	Peak
7386	48.37	-25.63	74	58	35.56	10.92	56.11	100	0	Peak



Test Mode :	2.4GHz 802.11n HT20	Temperature :	22~24°C
Test Channel :	11	Relative Humidity :	47~49%
Test Engineer :	Marlboro Hsu	Polarization :	Vertical
Remark :	1. 2463 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
35.4	27.18	-12.82	40	43.23	15.04	0.7	31.79	-	-	Peak
54.84	30.82	-9.18	40	55.16	6.6	0.84	31.78	-	-	Peak
65.64	30.88	-9.12	40	55.37	6.36	0.92	31.77	-	-	Peak
527.5	37.54	-8.46	46	48.97	18.02	2.52	31.97	100	64	Peak
720	25.61	-20.39	46	35.47	19.2	2.95	32.01	-	-	Peak
816.6	26.29	-19.71	46	35.08	19.97	3.12	31.88	-	-	Peak
2463	94.88	-	-	90.66	31.97	6.56	34.31	100	261	Average
2463	105.74	-	-	101.52	31.97	6.56	34.31	100	261	Peak
4924	47.75	-26.25	74	58.98	34.34	10.21	55.78	100	0	Peak
7386	48.36	-25.64	74	57.99	35.56	10.92	56.11	100	0	Peak



Test Mode :	2.4GHz 802.11n HT40	Temperature :	22~24°C
Test Channel :	03	Relative Humidity :	47~49%
Test Engineer :	Marlboro Hsu	Polarization :	Horizontal
Remark :	1. 2420 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2420	94.73	-	-	90.62	31.94	6.49	34.32	100	239	Average
2420	105.4	-	-	101.29	31.94	6.49	34.32	100	239	Peak
4845	47.14	-26.86	74	58.2	34.39	10.17	55.62	100	0	Peak
7266	48.68	-25.32	74	58.45	35.63	10.95	56.35	100	0	Peak

Test Mode :	2.4GHz 802.11n HT40	Temperature :	22~24°C
Test Channel :	03	Relative Humidity :	47~49%
Test Engineer :	Marlboro Hsu	Polarization :	Vertical
Remark :	1. 2424 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2424	91.93	-	-	87.82	31.94	6.49	34.32	102	257	Average
2424	102.45	-	-	98.34	31.94	6.49	34.32	102	257	Peak
4845	47.53	-26.47	74	58.59	34.39	10.17	55.62	100	0	Peak
7266	49.07	-24.93	74	58.84	35.63	10.95	56.35	100	0	Peak



Test Mode :	2.4GHz 802.11n HT40	Temperature :	22~24°C
Test Channel :	06	Relative Humidity :	47~49%
Test Engineer :	Marlboro Hsu	Polarization :	Horizontal
Remark :	1. 2438 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2438	94.65	-	-	90.49	31.96	6.52	34.32	100	238	Average
2438	105.5	-	-	101.34	31.96	6.52	34.32	100	238	Peak
4875	47.38	-26.62	74	58.51	34.37	10.18	55.68	100	0	Peak
7311	48.57	-25.43	74	58.3	35.61	10.94	56.28	100	0	Peak

Test Mode :	2.4GHz 802.11n HT40	Temperature :	22~24°C
Test Channel :	06	Relative Humidity :	47~49%
Test Engineer :	Marlboro Hsu	Polarization :	Vertical
Remark :	1. 2439 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2439	91.75	-	-	87.59	31.96	6.52	34.32	102	260	Average
2439	102.78	-	-	98.62	31.96	6.52	34.32	102	260	Peak
4875	47.42	-26.58	74	58.55	34.37	10.18	55.68	100	0	Peak
7311	49.13	-24.87	74	58.86	35.61	10.94	56.28	100	0	Peak



Test Mode :	2.4GHz 802.11n HT40	Temperature :	22~24°C
Test Channel :	09	Relative Humidity :	47~49%
Test Engineer :	Marlboro Hsu	Polarization :	Horizontal
Remark :	1. 2450 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
65.1	22.33	-17.67	40	46.89	6.3	0.91	31.77	-	-	Peak
98.85	26.64	-16.86	43.5	46.53	10.76	1.1	31.75	-	-	Peak
240.06	30.05	-15.95	46	48.7	11.4	1.69	31.74	-	-	Peak
527.5	32.88	-13.12	46	44.31	18.02	2.52	31.97	-	-	Peak
793.5	29.46	-16.54	46	38.55	19.8	3.06	31.95	-	-	Peak
816.6	33.61	-12.39	46	42.4	19.97	3.12	31.88	155	239	Peak
2450	94.47	-	-	90.3	31.96	6.52	34.31	100	239	Average
2450	104.88	-	-	100.71	31.96	6.52	34.31	100	239	Peak
4905	47.7	-26.3	74	58.89	34.35	10.2	55.74	100	0	Peak
7356	49.13	-24.87	74	58.81	35.58	10.92	56.18	100	0	Peak



Test Mode :	2.4GHz 802.11n HT40	Temperature :	22~24°C
Test Channel :	09	Relative Humidity :	47~49%
Test Engineer :	Marlboro Hsu	Polarization :	Vertical
Remark :	1. 2450 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
35.4	27.24	-12.76	40	43.29	15.04	0.7	31.79	-	-	Peak
55.65	31.37	-8.63	40	55.71	6.6	0.84	31.78	100	198	Peak
66.45	30.23	-9.77	40	54.66	6.42	0.92	31.77	-	-	Peak
527.5	34.85	-11.15	46	46.28	18.02	2.52	31.97	-	-	Peak
720	28.01	-17.99	46	37.87	19.2	2.95	32.01	-	-	Peak
816.6	25.94	-20.06	46	34.73	19.97	3.12	31.88	-	-	Peak
2450	91.62	-	-	87.45	31.96	6.52	34.31	100	274	Average
2450	102.38	-	-	98.21	31.96	6.52	34.31	100	274	Peak
4905	46.69	-27.31	74	57.88	34.35	10.2	55.74	100	0	Peak
7356	49.48	-24.52	74	59.16	35.58	10.92	56.18	100	0	Peak

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 (dB μ V)	
	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.

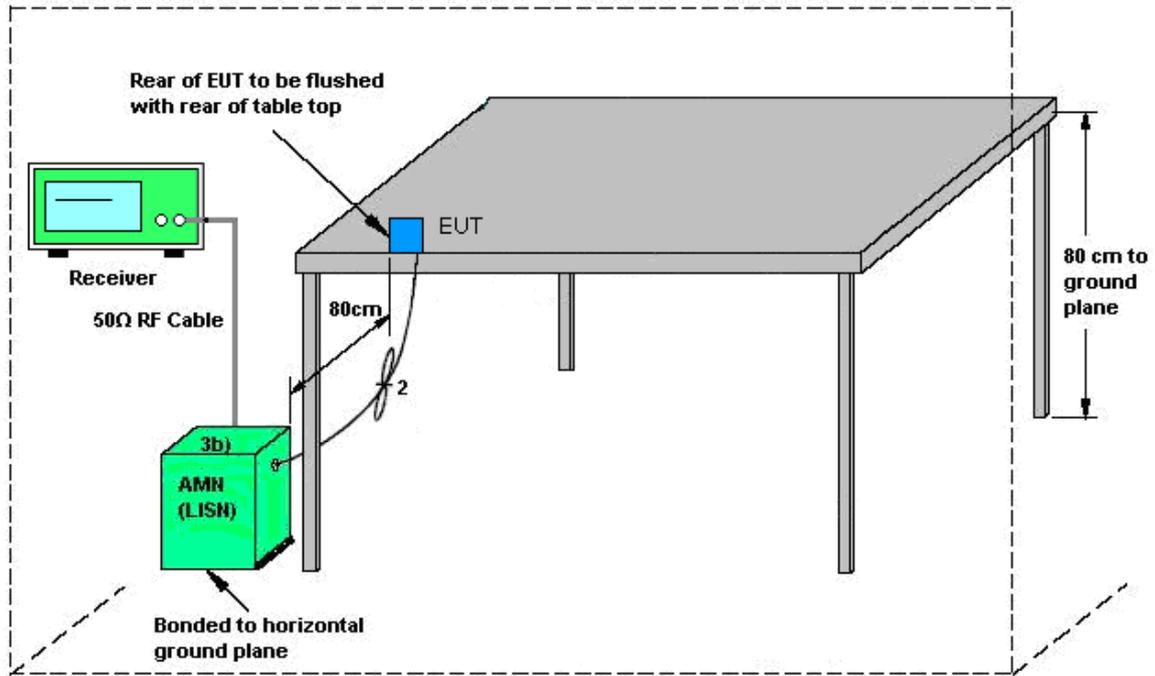
3.6.2 Measuring Instruments

See list of measuring instruments of this test report.

3.6.3 Test Procedures

1. The 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.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
5. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
6. Both sides of AC line were checked for maximum conducted interference.
7. The frequency range from 150 kHz to 30 MHz was searched.
8. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.

3.6.4 Test Setup

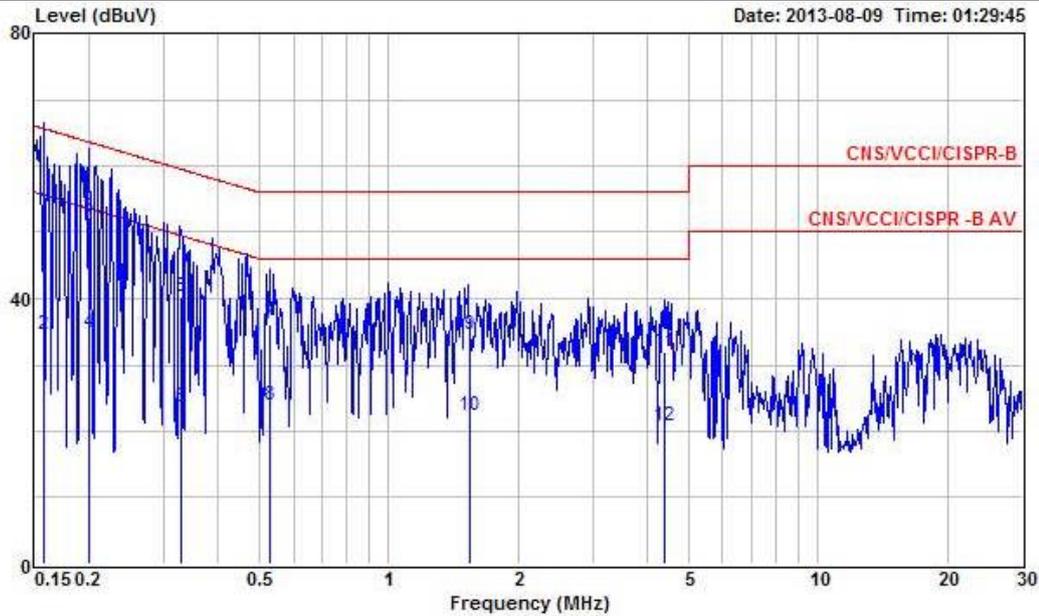


AMN = Artificial mains network (LISN)
 AE = Associated equipment
 EUT = Equipment under test
 ISN = Impedance stabilization network



3.6.5 Test Result of AC Conducted Emission

Test Mode :	Mode 1	Temperature :	24~25°C
Test Engineer :	David Du	Relative Humidity :	56~57%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	WLAN Link + Bluetooth Link + USB Cable (Charging from Adapter) + MP3 + Earphone + H Pattern for Sample 4		

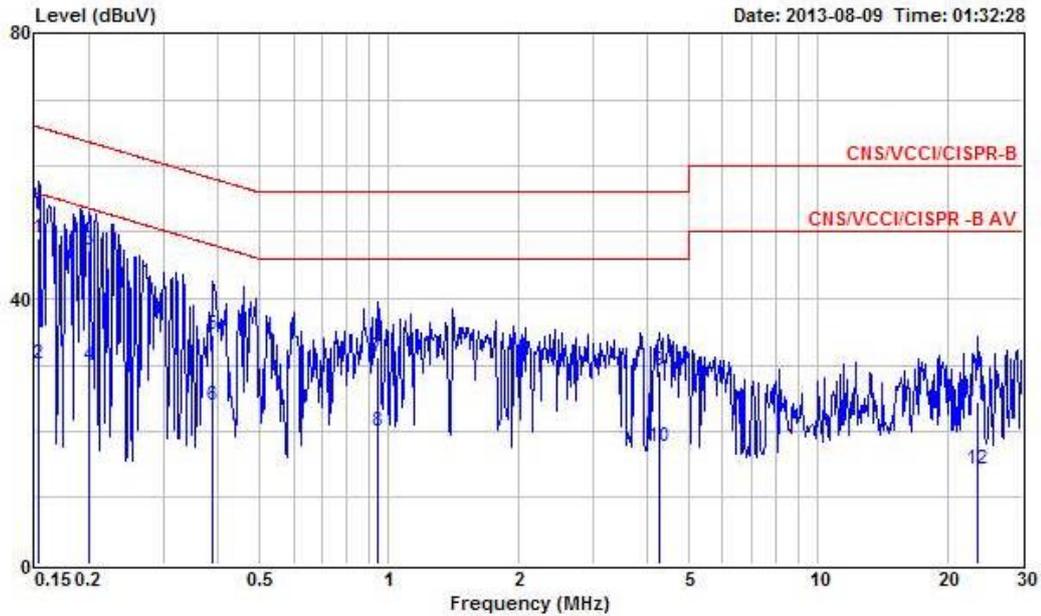


Site : CO01-HY
 Condition : CNS/VCCI/CISPR-B LISN 2001/004-121228 LINE
 EUT : ASUS Tablet
 Power : 120V/60Hz
 Model : ME180A

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.157	53.35	-12.27	65.62	53.12	0.13	0.10	QP
2	0.157	34.45	-21.17	55.62	34.22	0.13	0.10	Average
3	0.200	52.24	-11.37	63.61	52.00	0.14	0.10	QP
4	0.200	34.80	-18.81	53.61	34.56	0.14	0.10	Average
5	0.327	40.38	-19.15	59.53	40.13	0.15	0.10	QP
6	0.327	23.75	-25.78	49.53	23.50	0.15	0.10	Average
7	0.527	36.15	-19.85	56.00	35.89	0.16	0.10	QP
8	0.527	23.93	-22.07	46.00	23.67	0.16	0.10	Average
9	1.540	34.47	-21.53	56.00	34.19	0.18	0.10	QP
10	1.540	22.29	-23.71	46.00	22.01	0.18	0.10	Average
11	4.410	31.99	-24.01	56.00	31.74	0.24	0.01	QP
12	4.410	20.72	-25.28	46.00	20.47	0.24	0.01	Average



Test Mode :	Mode 1	Temperature :	24~25°C
Test Engineer :	David Du	Relative Humidity :	56~57%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	WLAN Link + Bluetooth Link + USB Cable (Charging from Adapter) + MP3 + Earphone + H Pattern for Sample 4		



Site : CO01-HY
 Condition : CNS/VCCI/CISPR-B LISN 2001/004-121228 NEUTRAL
 EUT : ASUS Tablet
 Power : 120V/60Hz
 Model : ME180A

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.153	49.14	-16.70	65.84	48.93	0.11	0.10	QP
2	0.153	30.12	-25.72	55.84	29.91	0.11	0.10	Average
3	0.201	47.23	-16.34	63.57	47.03	0.10	0.10	QP
4	0.201	29.97	-23.60	53.57	29.77	0.10	0.10	Average
5	0.387	34.45	-23.68	58.13	34.23	0.12	0.10	QP
6	0.387	23.91	-24.22	48.13	23.69	0.12	0.10	Average
7	0.938	31.15	-24.85	56.00	30.91	0.14	0.10	QP
8	0.938	20.02	-25.98	46.00	19.78	0.14	0.10	Average
9	4.270	28.97	-27.03	56.00	28.74	0.22	0.01	QP
10	4.270	17.71	-28.29	46.00	17.48	0.22	0.01	Average
11	23.640	24.35	-35.65	60.00	23.61	0.54	0.20	QP
12	23.640	14.36	-35.64	50.00	13.62	0.54	0.20	Average



3.7 Antenna Requirements

3.7.1 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.

3.7.2 Antenna Connected Construction

Embedded in Antenna.

3.7.3 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	Rohde & Schwarz	FSP40	100055	9kHz~40GHz	Jun. 07, 2013	Aug. 12, 2013~ Aug. 14, 2013	Jun. 06, 2014	Conducted (TH02-HY)
Power Meter	Anritsu	ML2495A	1036004	300MHz~40GHz	Sep. 08, 2012	Aug. 12, 2013~ Aug. 14, 2013	Sep. 07, 2013	Conducted (TH02-HY)
Power Sensor	Anritsu	MA2411B	1027253	300MHz~40GHz	Sep. 08, 2012	Aug. 12, 2013~ Aug. 14, 2013	Sep. 07, 2013	Conducted (TH02-HY)
EMC Receiver	R&S	ESCS 30	100132	9kHz ~ 2.75GHz	Nov. 14, 2012	Aug. 01, 2013	Nov. 13, 2013	Conduction (CO01-HY)
LISN	MessTec	NNB-2/16Z	2001/004	9kHz ~ 30MHz	Dec. 28, 2012	Aug. 01, 2013	Dec. 27, 2013	Conduction (CO01-HY)
LISN (Support Unit)	MessTec	NNB-2/16Z	2001/009	9kHz ~ 30MHz	Jan. 08, 2013	Aug. 01, 2013	Jan. 07, 2014	Conduction (CO01-HY)
EMI Filter	LINDGREN	LRE-2060	1004	< 450Hz	N/A	Aug. 01, 2013	N/A	Conduction (CO01-HY)
EMI Filter	LINDGREN	N6006	201052	0~60Hz	N/A	Aug. 01, 2013	N/A	Conduction (CO01-HY)
RF Cable-CON	HUBER+SUHNER	RG213/U	076118320 10001	9kHz ~ 30MHz	Mar. 01, 2013	Aug. 01, 2013	Feb. 28, 2014	Conduction (CO01-HY)
Spectrum Analyzer	R&S	FSP30	101352	9kHz~30GHz	Nov. 07, 2012	Aug. 13, 2013~ Aug. 14, 2013	Nov. 06, 2013	Radiation (03CH06-HY)
Spectrum Analyzer	Agilent	E4408B	MY442110 30	9kHz ~ 26.5GHz	Nov. 26, 2012	Aug. 13, 2013~ Aug. 14, 2013	Nov. 25, 2013	Radiation (03CH06-HY)
EMI Test Receiver	R&S	ESVS10	834468/00 03	20MHz ~ 1000MHz	May 06, 2013	Aug. 13, 2013~ Aug. 14, 2013	May 05, 2014	Radiation (03CH06-HY)
Loop Antenna	Rohde & Schwarz	HFH2-Z2	860004/00 01	9 kHz~30 MHz	Jul. 03, 2012	Aug. 13, 2013~ Aug. 14, 2013	Jul. 03, 2014	Radiation (03CH06-HY)
Bilog Antenna	SCHAFFNER	CBL6112B	2885	30MHz ~ 2GHz	Oct. 06, 2012	Aug. 13, 2013~ Aug. 14, 2013	Oct. 05, 2013	Radiation (03CH06-HY)
Double Ridge Horn Antenna	EMCO	3117	00066583	1GHz ~ 18GHz	Aug. 02, 2013	Aug. 13, 2013~ Aug. 14, 2013	Aug. 01, 2014	Radiation (03CH06-HY)
Amplifier	Agilent	310N	186713	9kHz ~ 1GHz	Apr. 12, 2013	Aug. 13, 2013~ Aug. 14, 2013	Apr. 11, 2014	Radiation (03CH06-HY)
Pre Amplifier	EMCI	EMC051845	SN980048	1GHz ~ 18GHz	Jul. 18, 2013	Aug. 13, 2013~ Aug. 14, 2013	Jul. 17, 2014	Radiation (03CH06-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170 251	15GHz ~ 40GHz	Sep. 28, 2012	Aug. 13, 2013~ Aug. 14, 2013	Sep. 27, 2013	Radiation (03CH06-HY)
Preamplifier	Agilent	8449B	3008A019 17	1GHz ~ 26.5GHz	Apr. 12, 2013	Aug. 13, 2013~ Aug. 14, 2013	Apr. 11, 2014	Radiation (03CH06-HY)
Turn Table	INN-CO	DS2000	420/650/00	0 - 360 degree	N/A	Aug. 13, 2013~ Aug. 14, 2013	N/A	Radiation (03CH06-HY)
Antenna Mast	MF	MF-7802	MF780208 212	1 m ~ 4 m	N/A	Aug. 13, 2013~ Aug. 14, 2013	N/A	Radiation (03CH06-HY)



5 Uncertainty of Evaluation

Uncertainty of Conducted Emission Measurement (150kHz ~ 30MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	2.26
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Uncertainty of Radiated Emission Measurement (30MHz ~ 1000MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	2.54
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Uncertainty of Radiated Emission Measurement (1GHz ~ 40GHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	4.72
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