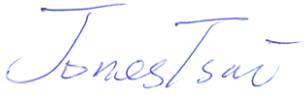
FCC RF Test Report

APPLICANT	:	PEGATRON CORPORATION
EQUIPMENT	:	Tablet
BRAND NAME	:	TOSHIBA
MODEL NAME	:	TOSHIBA AT10-A、TOSHIBA AT15-A
FCC ID	:	VUIPDAPDAAT10-A
STANDARD	:	FCC Part 15 Subpart C §15.247
CLASSIFICATION	:	(DTS) Digital Transmission System

The product was received on Feb. 28, 2013 and completely tested on Apr. 10, 2013. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the procedures 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: 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.

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR322823C	Rev. 01	Initial issue of report	Apr. 15, 2013

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	≥ 0.5MHz	Pass	-
3.1	-	RSS-Gen 4.6.1	99% Bandwidth	-	Pass	-
3.2	15.247(b)	RSS-210 A8.4	Power Output Measurement	≤ 30dBm	Pass	-
3.3	15.247(e)	RSS-210 A8.2(b)	Power Spectral Density	≤ 8dBm/3kHz	Pass	-
3.4	15.247(d)	RSS-210 A8.5	Conducted Band Edges	≤ 20dBc	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 1.10 dB at 2390.000 MHz
3.6	15.207	RSS-Gen 7.2.4	AC Conducted Emission	15.207(a)	Pass	Under limit 4.36 dB at 7.810 MHz
3.7	15.203 & 15.247(b)	RSS-210 A8.4	Antenna Requirement	N/A	Pass	-

1 General Description

1.1 Applicant

PEGATRON CORPORATION
No. 76, Ligong St., Beitou District, Taipei City 112

1.2 Manufacturer

Toshiba Corporation
1-1, Shibaura 1-chome, Minato-ku, Tokyo 105-8001, Japan

1.3 Feature of Equipment Under Test

Product Feature	
Equipment	Tablet
Brand Name	TOSHIBA
Model Name	TOSHIBA AT10-A、TOSHIBA AT15-A
FCC ID	VUIPDAPDAAT10-A
EUT supports Radios application	WLAN 11abgn / Bluetooth 2.1/3.0/4.0 / NFC
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.

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 802.11a/n: 5745~5825MHz.
Maximum Output Power to Antenna	**<2412 MHz ~ 2462 MHz>** 802.11b : 15.75 dBm (0.0376 W) 802.11g : 21.39 dBm (0.1377 W) 802.11n HT20 : 21.57 dBm (0.1435 W) 802.11n HT40 : 21.78 dBm (0.1507 W) **<5745 MHz ~ 5825 MHz>** 802.11a : 20.97 dBm (0.1250 W) 802.11n HT20 : 20.80 dBm (0.1202 W) 802.11n HT40 : 20.12 dBm (0.1028 W)
99% Occupied Bandwidth	**<2412 MHz ~ 2462 MHz>** 802.11b : 12.60MHz 802.11g : 18.80MHz 802.11n HT20 : 19.50MHz 802.11n HT40 : 38.10MHz **<5745 MHz ~ 5825 MHz>** 802.11a : 18.55MHz 802.11n HT20 : 19.30MHz 802.11n HT40 : 37.90MHz
Antenna Type	802.11b/g/n : Chip Antenna type with gain 1.6999 dBi 802.11a/n : Chip Antenna type with gain 2.0000 dBi
Type of Modulation	802.11b : DSSS (DBPSK / DQPSK / CCK) 802.11a/g/n : OFDM (BPSK / QPSK / 16QAM / 64QAM)

1.5 Testing Site

Test Site	SPORTON INTERNATIONAL INC.			
Test Site Location	No. 52, Hwa Ya 1st 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	CO01-HY	03CH07-HY	722060/4086B-1

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

1.6 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 C63.10-2009
- IC RSS-210 Issue 8
- IC RSS-Gen Issue 3
- NOTICE 2012-DRS0126

Remark:

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. Per the section 2.2.3 of Notice of 2012-DRS0126, " Receivers Excluded from Industry Canada Requirements", only radiocommunication receivers operating in stand-alone mode within the band 30-960 MHz and scanner receivers are subject to Industry Canada requirements.

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 (X 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		

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
5725-5850 MHz Band 4	149	5745	159	5795
	151	5755	161	5805
	153	5765	165	5825
	157	5785	-	-

2.2 Pre-Scanned RF Power

Preliminary tests were performed in different data rate and antenna configurations as following table and the highest power data rates were chosen for full test in the following tables. Final Output Power equals to Measured Output Power adds the duty factor.

2.4GHz 802.11b mode				
Data Rate (MHz)	1M bps	2M bps	5.5M bps	11M bps
Peak Power (dBm)	15.75	15.72	15.71	15.71

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)	21.39	21.34	21.37	21.16	21.24	21.38	21.21	21.31

2.4GHz 802.11n HT20 mode								
Data Rate (MHz)	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
Peak Power (dBm)	21.57	21.51	21.45	21.36	21.39	21.54	21.46	21.31

2.4GHz 802.11n HT40 mode								
Data Rate (MHz)	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
Peak Power (dBm)	21.78	21.73	21.74	21.75	21.77	21.77	21.62	21.77

5GHz 802.11a mode								
Data Rate (MHz)	6M bps	9M bps	12M bps	18M bps	24M bps	36M bps	48M bps	54M bps
Peak Power (dBm)	20.97	20.82	20.55	20.41	20.75	20.79	20.71	20.67

5GHz 802.11n HT20 mode								
Data Rate (MHz)	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
Peak Power (dBm)	20.80	20.42	20.37	20.51	20.13	20.11	20.04	20.10

5GHz 802.11n HT40 mode								
Data Rate (MHz)	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
Peak Power (dBm)	20.12	19.82	19.74	19.84	19.99	19.71	19.20	19.71

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	6.5 Mbps	1/6/11
		802.11n HT40	13.5 Mbps	3/6/9
	Output Power	802.11b	1 Mbps	1/6/11
		802.11g	6 Mbps	1/6/11
		802.11n HT20	6.5 Mbps	1/6/11
		802.11n HT40	13.5 Mbps	3/6/9
	Conducted Band Edge	802.11b	1 Mbps	1/11
		802.11g	6 Mbps	1/11
		802.11n HT20	6.5 Mbps	1/11
		802.11n HT40	13.5 Mbps	3/9
	Conducted Spurious Emission	802.11b	1 Mbps	1/6/11
		802.11g	6 Mbps	1/6/11
		802.11n HT20	6.5 Mbps	1/6/11
		802.11n HT40	13.5 Mbps	3/6/9
Radiated TCs	Radiated Band Edge	802.11b	1 Mbps	1/11
		802.11g	6 Mbps	1/11
		802.11n HT20	6.5 Mbps	1/11
		802.11n HT40	13.5 Mbps	3/9
	Radiated Spurious Emission	802.11b	1 Mbps	1/6/11
		802.11g	6 Mbps	1/6/11
		802.11n HT20	6.5 Mbps	1/6/11
		802.11n HT40	13.5 Mbps	3/6/9

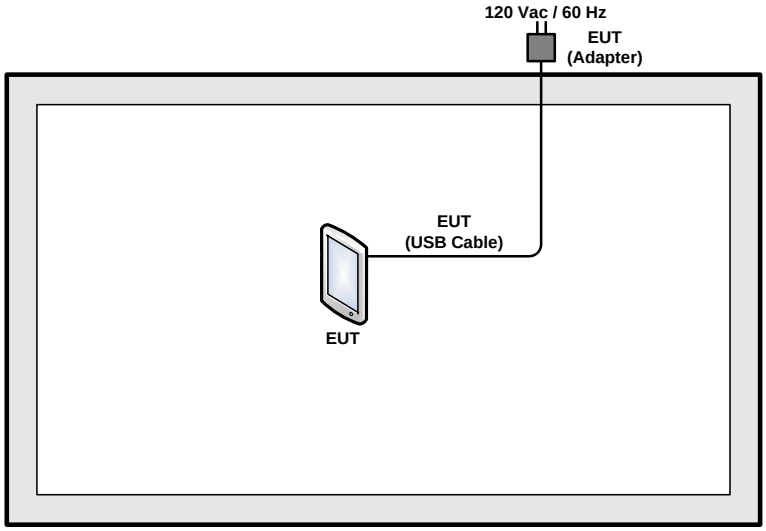
<5GHz>

Test Cases				
	Test Items	Mode	Data Rate	Test Channel
Conducted TCs	6dB and 99% BW Power Spectral Density	802.11a	6 Mbps	149/157/165
		802.11n HT20	6.5 Mbps	149/157/165
		802.11n HT40	13.5 Mbps	151/159
	Output Power	802.11a	6 Mbps	149/157/165
		802.11n HT20	6.5 Mbps	149/157/165
		802.11n HT40	13.5 Mbps	151/159
	Conducted Band Edge	802.11a	6 Mbps	149/165
		802.11n HT20	6.5 Mbps	149/165
		802.11n HT40	13.5 Mbps	151/159
	Conducted Spurious Emission	802.11a	6 Mbps	149/157/165
		802.11n HT20	6.5 Mbps	149/157/165
		802.11n HT40	13.5 Mbps	151/159
Radiated TCs	Radiated Band Edge	802.11a	6 Mbps	149/165
		802.11n HT20	6.5 Mbps	149/165
		802.11n HT40	13.5 Mbps	151/159
	Radiated Spurious Emission	802.11a	6 Mbps	149/157/165
		802.11n HT20	6.5 Mbps	149/157/165
		802.11n HT40	13.5 Mbps	151/159

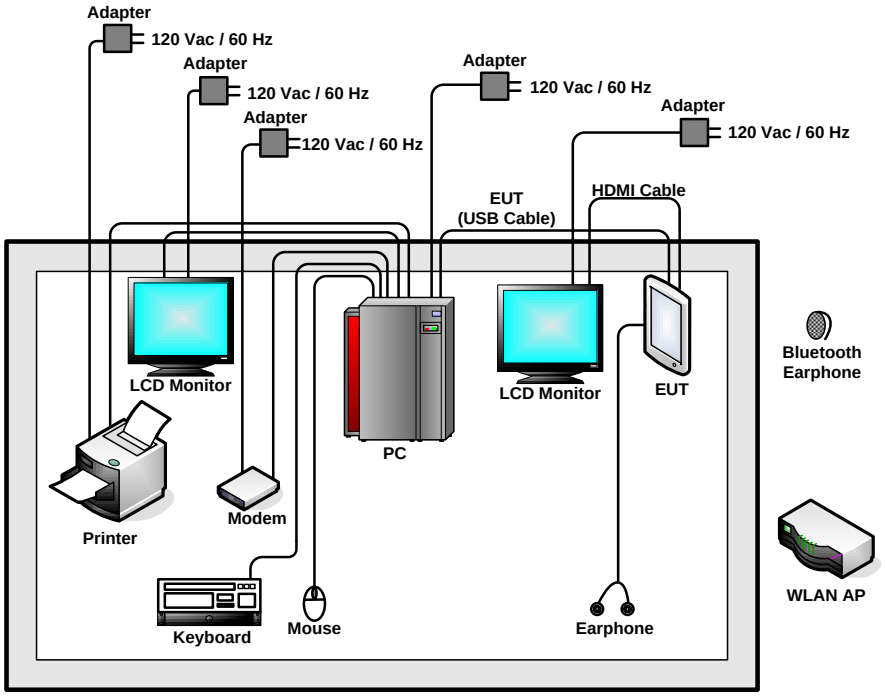
Test Cases	
AC Conducted Emission	Mode 1 : Bluetooth Link + WLAN Link + MP3 + SD Card + H Pattern + HDMI Cable + Earphone + USB Cable (Data Link with PC) + NFC On

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	N/A	N/A	Unshielded, 1.5 m
2.	Bluetooth Earphone	SONY	Z354	N/A	N/A	N/A
3.	PC	HP	DC7700	FCC DoC	N/A	Unshielded, 1.8 m
4.	LCD Monitor	DELL	U2410f	FCC DoC	Shielded, 1.5 m	Unshielded, 1.8 m
5.	(USB) Mouse	Microsoft	1113	FCC DoC	Shielded, 1.8 m	N/A
6.	(USB) Keyboard	Microsoft	1366	FCC DoC	Shielded, 2.0 m	N/A
7.	Printer	EPSON	LQ300+	FCC DoC	Shielded, 1.8 m	Unshielded, 1.8 m
8.	Earphone	Apple	MB770FE/A	N/A	Unshielded, 1.5m	N/A
9.	MicroSD Card	Transcend	8G	FCC DoC	N/A	N/A
10.	NFC Card	Metro Taipei	Easy Card	N/A	N/A	N/A
11.	Modem	ACCEX	DM1414	IFAXDM1414	Shielded, 1 m	Unshielded, 1.8 m

2.6 Description of RF Function Operation Test Setup

For WLAN function, programmed RF utility, “WiFi Tx Command” installed in the notebook make the EUT provides functions like channel selection and power level for continuous transmitting and receiving signals.

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.

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.

Example :

Offset(dB) = RF cable loss(dB) + attenuator factor(dB).

= 4.2 + 10 = 14.2 (dB)

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.

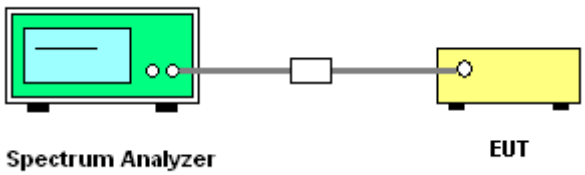
3.1.2 Measuring Instruments

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 Bandwidth

Test Mode :	802.11b	Temperature :	24~26℃
Test Engineer :	Reece Lee	Relative Humidity :	50~53%

Channel	Frequency (MHz)	802.11b 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
01	2412	8.04	0.5	Pass
06	2437	8.00	0.5	Pass
11	2462	8.04	0.5	Pass

Test Mode :	802.11g	Temperature :	24~26℃
Test Engineer :	Reece Lee	Relative Humidity :	50~53%

Channel	Frequency (MHz)	802.11g 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
01	2412	16.36	0.5	Pass
06	2437	16.36	0.5	Pass
11	2462	16.40	0.5	Pass

Test Mode :	802.11n HT20	Temperature :	24~26℃
Test Engineer :	Reece Lee	Relative Humidity :	50~53%

Channel	Frequency (MHz)	2.4GHz 802.11n HT20 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
01	2412	17.58	0.5	Pass
06	2437	17.60	0.5	Pass
11	2462	17.56	0.5	Pass

Test Mode :	802.11n HT40	Temperature :	24~26℃
Test Engineer :	Reece Lee	Relative Humidity :	50~53%

Channel	Frequency (MHz)	2.4GHz 802.11n HT40 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
03	2422	36.32	0.5	Pass
06	2437	36.40	0.5	Pass
09	2452	36.32	0.5	Pass

Test Mode :	802.11a	Temperature :	24~26℃
Test Engineer :	Reece Lee	Relative Humidity :	50~53%

Channel	Frequency (MHz)	802.11a 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
149	5745	16.40	0.5	Pass
157	5785	16.48	0.5	Pass
165	5825	16.40	0.5	Pass

Test Mode :	802.11n HT20	Temperature :	24~26℃
Test Engineer :	Reece Lee	Relative Humidity :	50~53%

Channel	Frequency (MHz)	5GHz 802.11n HT20 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
149	5745	17.60	0.5	Pass
157	5785	17.64	0.5	Pass
165	5825	17.60	0.5	Pass

Test Mode :	802.11n HT40	Temperature :	24~26℃
Test Engineer :	Reece Lee	Relative Humidity :	50~53%

Channel	Frequency (MHz)	5GHz 802.11n HT40 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
151	5755	36.40	0.5	Pass
159	5795	36.40	0.5	Pass

3.1.6 Test Result of 99% Occupied Bandwidth

Test Mode :	802.11b	Temperature :	24~26℃
Test Engineer :	Reece Lee	Relative Humidity :	50~53%

Channel	Frequency (MHz)	802.11b 99% Occupied Bandwidth (MHz)	Pass/Fail
01	2412	12.55	Pass
06	2437	12.55	Pass
11	2462	12.60	Pass

Test Mode :	802.11g	Temperature :	24~26℃
Test Engineer :	Reece Lee	Relative Humidity :	50~53%

Channel	Frequency (MHz)	802.11g 99% Occupied Bandwidth (MHz)	Pass/Fail
01	2412	18.55	Pass
06	2437	18.65	Pass
11	2462	18.80	Pass

Test Mode :	802.11n HT20	Temperature :	24~26℃
Test Engineer :	Reece Lee	Relative Humidity :	50~53%

Channel	Frequency (MHz)	2.4GHz 802.11n HT20 99% Occupied Bandwidth (MHz)	Pass/Fail
01	2412	19.35	Pass
06	2437	19.35	Pass
11	2462	19.50	Pass

Test Mode :	802.11n HT40	Temperature :	24~26℃
Test Engineer :	Reece Lee	Relative Humidity :	50~53%

Channel	Frequency (MHz)	2.4GHz 802.11n HT40 99% Occupied Bandwidth (MHz)	Pass/Fail
03	2422	37.90	Pass
06	2437	38.10	Pass
09	2452	37.80	Pass

Test Mode :	802.11a	Temperature :	24~26℃
Test Engineer :	Reece Lee	Relative Humidity :	50~53%

Channel	Frequency (MHz)	802.11a 99% Occupied Bandwidth (MHz)	Pass/Fail
149	5745	18.55	Pass
157	5785	18.35	Pass
165	5825	18.40	Pass

Test Mode :	802.11n HT20	Temperature :	24~26℃
Test Engineer :	Reece Lee	Relative Humidity :	50~53%

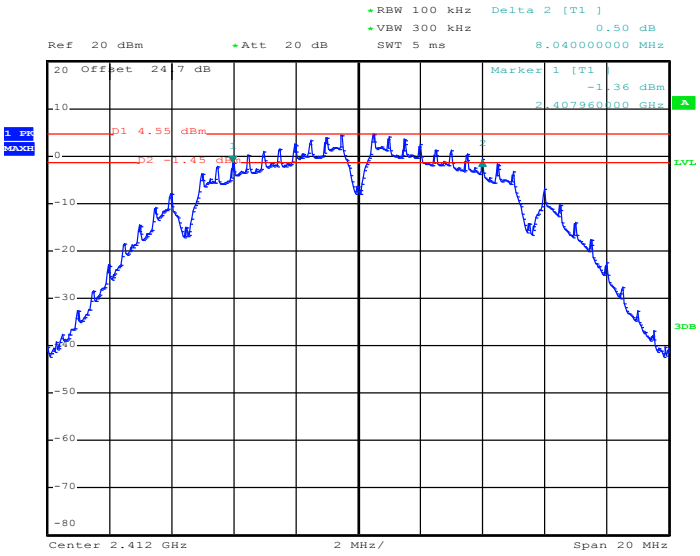
Channel	Frequency (MHz)	5GHz 802.11n HT20 99% Occupied Bandwidth (MHz)	Pass/Fail
149	5745	19.15	Pass
157	5785	19.20	Pass
165	5825	19.30	Pass

Test Mode :	802.11n HT40	Temperature :	24~26℃
Test Engineer :	Reece Lee	Relative Humidity :	50~53%

Channel	Frequency (MHz)	5GHz 802.11n HT40 99% Occupied Bandwidth (MHz)	Pass/Fail
151	5755	37.90	Pass
159	5795	37.70	Pass

3.1.7 Test Result of 6dB Bandwidth Plots

6 dB Bandwidth Plot on 802.11b Channel 01



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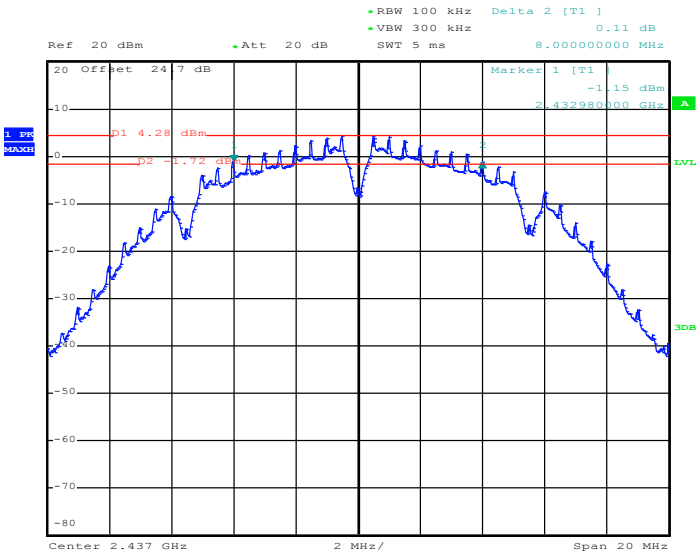
6 dB Bandwidth Plot on 802.11b Channel 06



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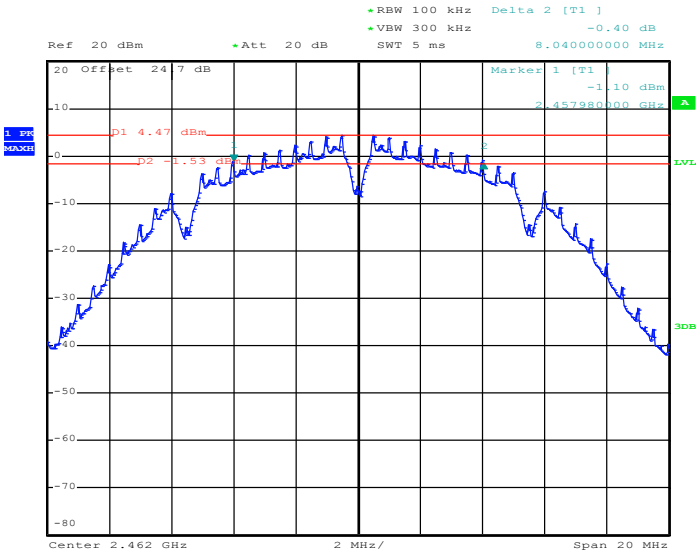
6 dB Bandwidth Plot on 802.11b Channel 11



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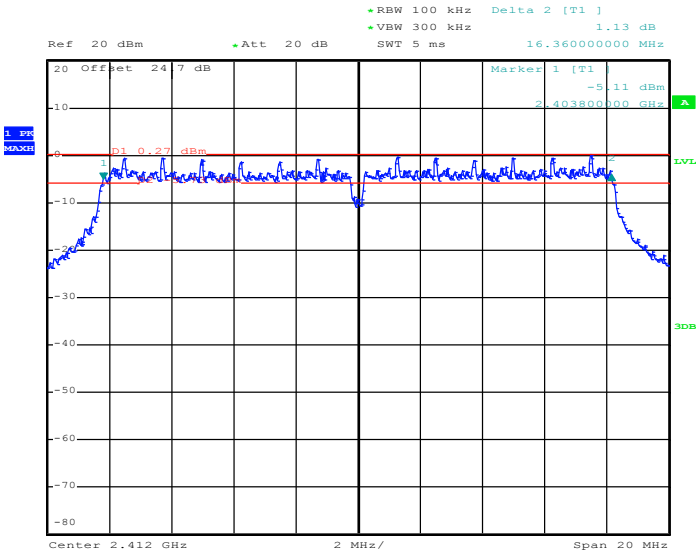

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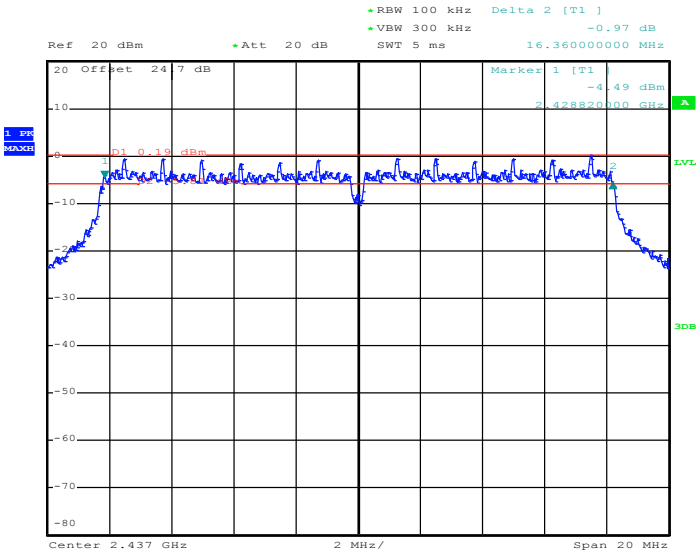

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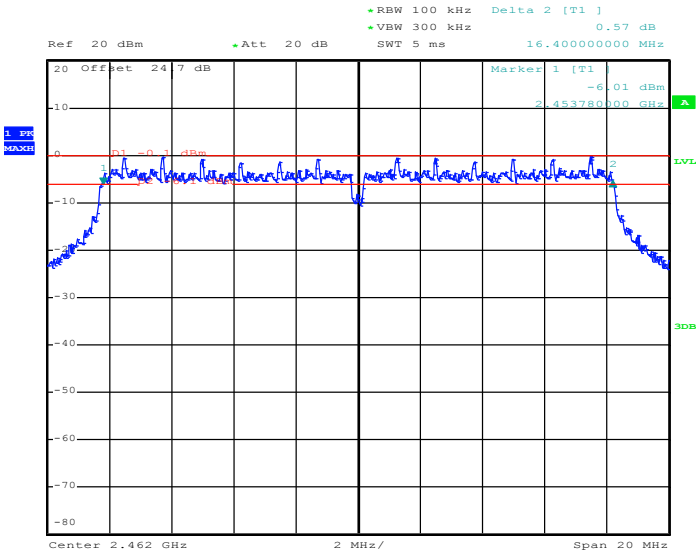
6 dB Bandwidth Plot on 802.11g Channel 11



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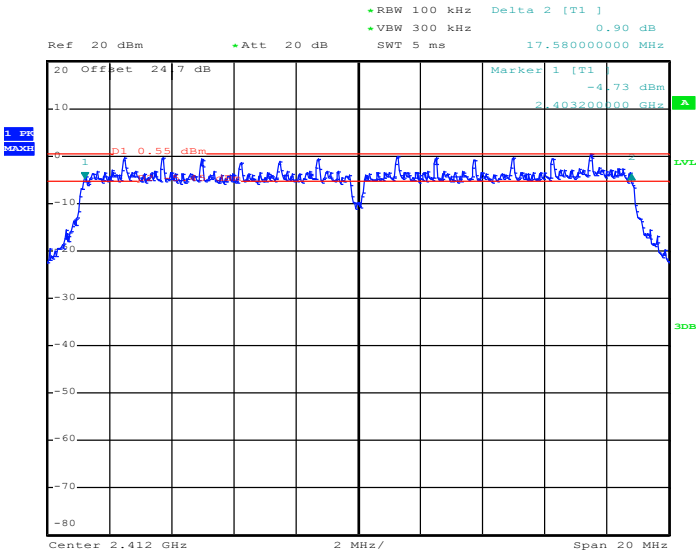
6 dB Bandwidth Plot on 2.4GHz 802.11n HT20 Channel 01



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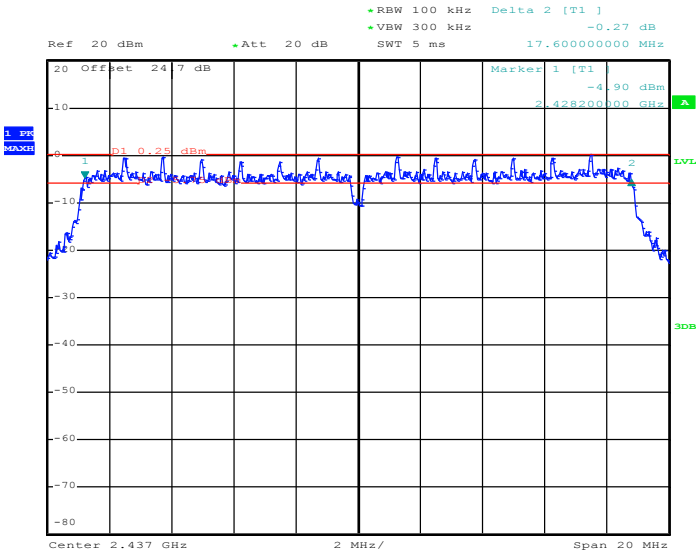
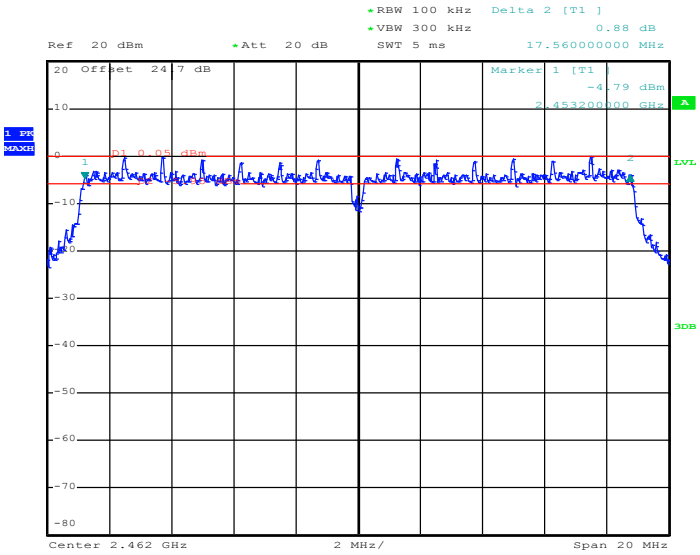
6 dB Bandwidth Plot on 2.4GHz 802.11n HT20 Channel 06



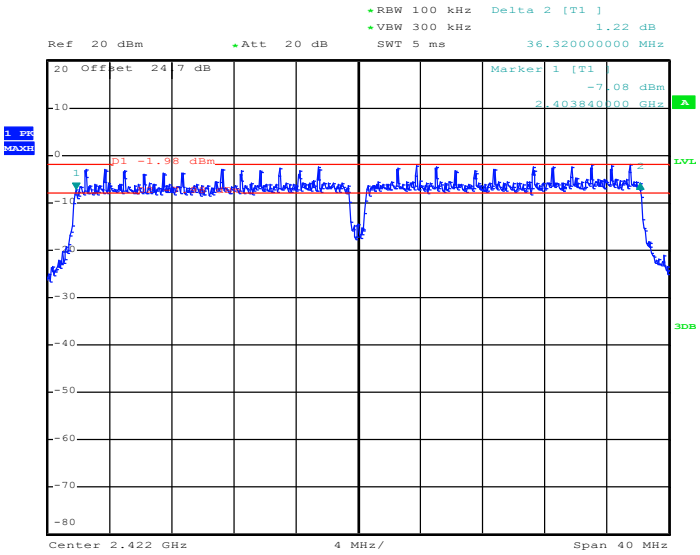
Date: 20.MAR.2013 22:09:43

6 dB Bandwidth Plot on 2.4GHz 802.11n HT20 Channel 11



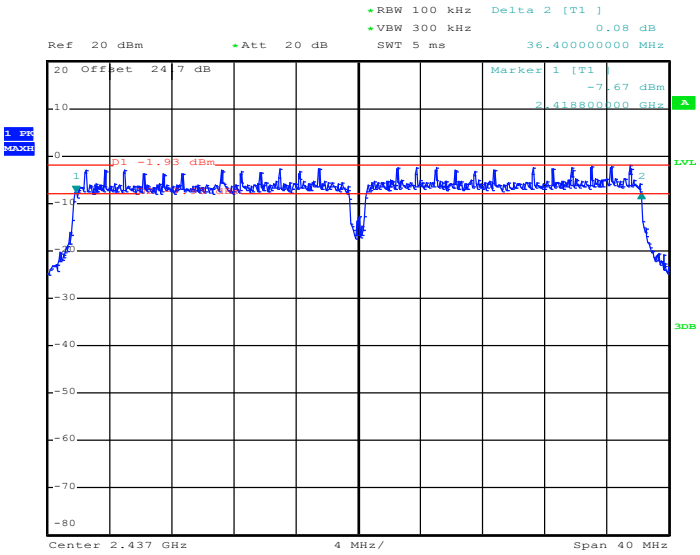
Date: 20.MAR.2013 22:24:44

6 dB Bandwidth Plot on 2.4GHz 802.11n HT40 Channel 03



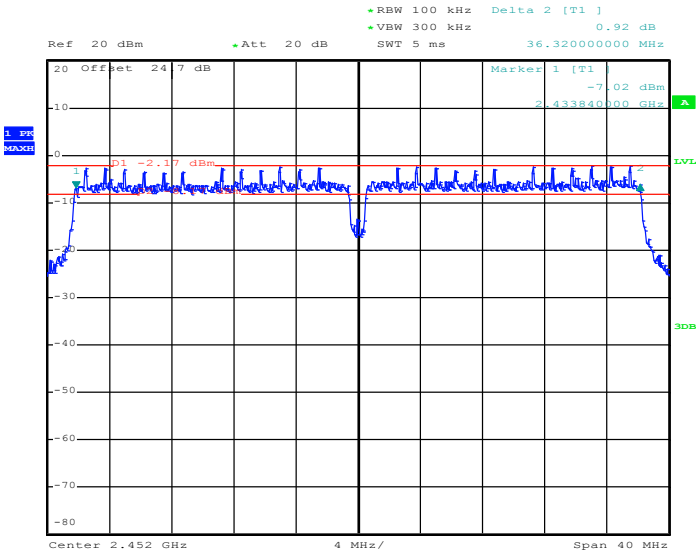
Date: 20.MAR.2013 22:33:50

6 dB Bandwidth Plot on 2.4GHz 802.11n HT40 Channel 06



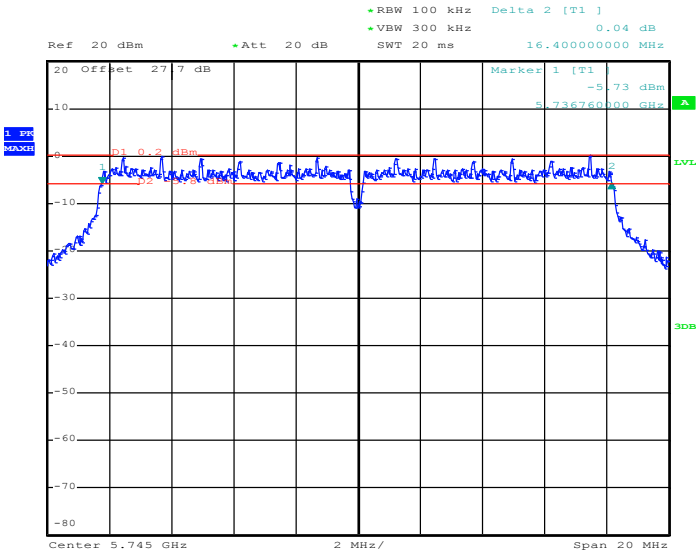
Date: 20.MAR.2013 22:46:11

6 dB Bandwidth Plot on 2.4GHz 802.11n HT40 Channel 09



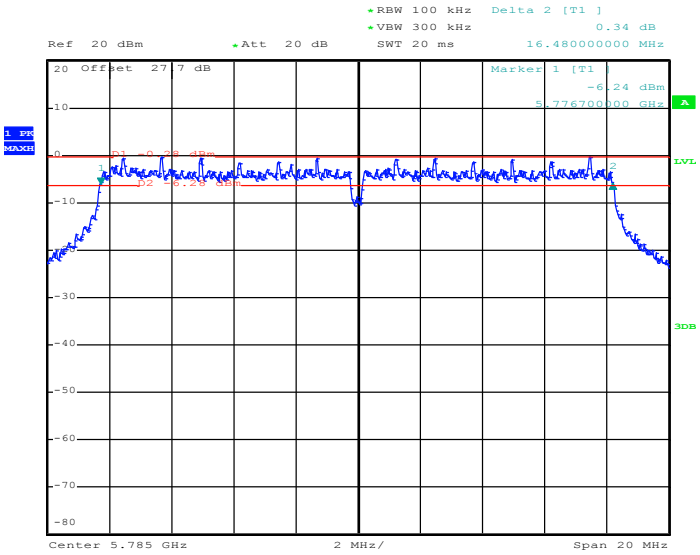
Date: 20.MAR.2013 22:56:31

6 dB Bandwidth Plot on 802.11a Channel 149



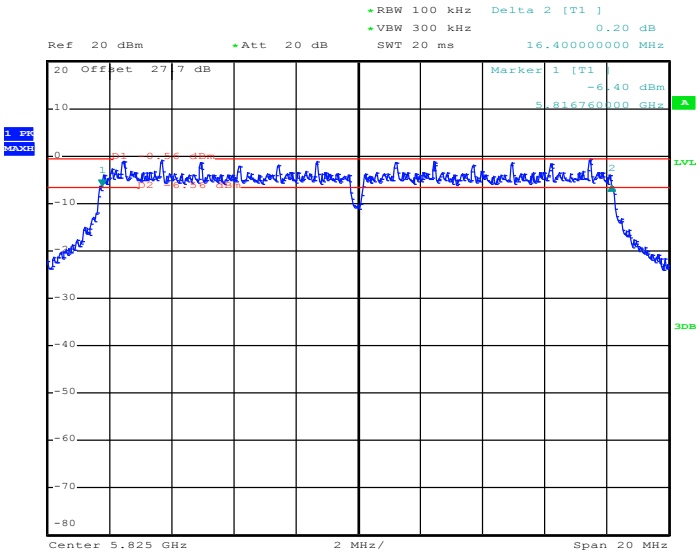
Date: 20.MAR.2013 23:07:06

6 dB Bandwidth Plot on 802.11a Channel 157



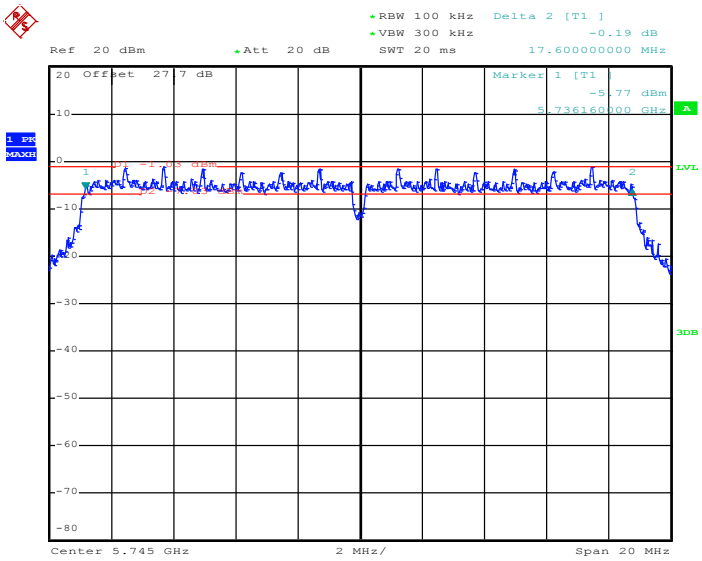
Date: 20.MAR.2013 23:16:59

6 dB Bandwidth Plot on 802.11a Channel 165



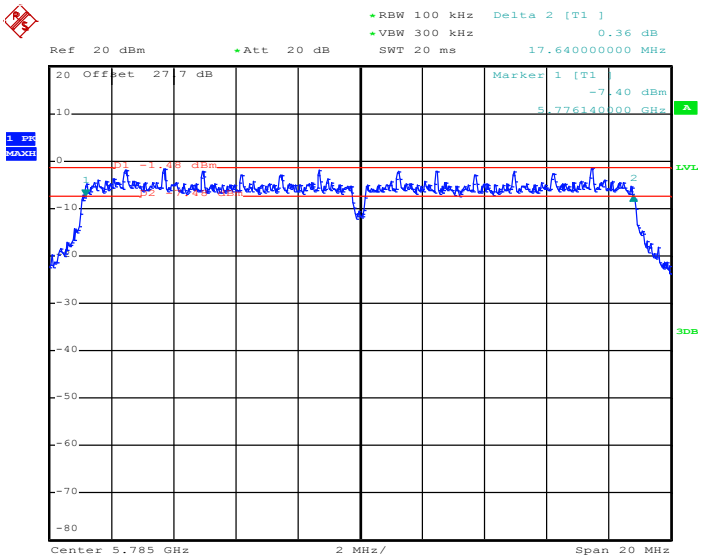
Date: 20.MAR.2013 23:20:36

6 dB Bandwidth Plot on 5GHz 802.11n HT20 Channel 149



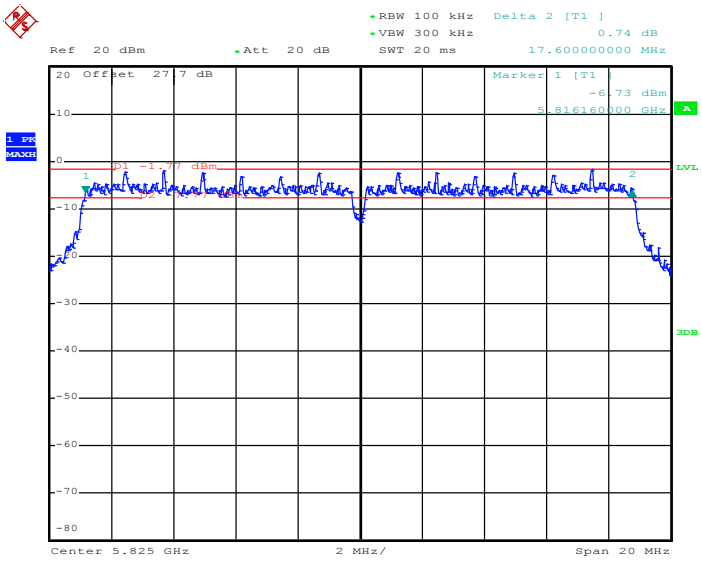
Date: 22.MAR.2013 23:52:03

6 dB Bandwidth Plot on 5GHz 802.11n HT20 Channel 157



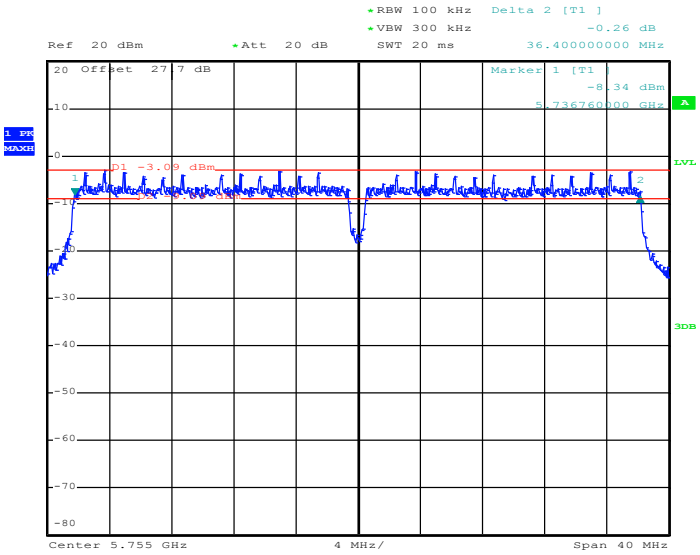
Date: 22.MAR.2013 23:56:37

6 dB Bandwidth Plot on 5GHz 802.11n HT20 Channel 165



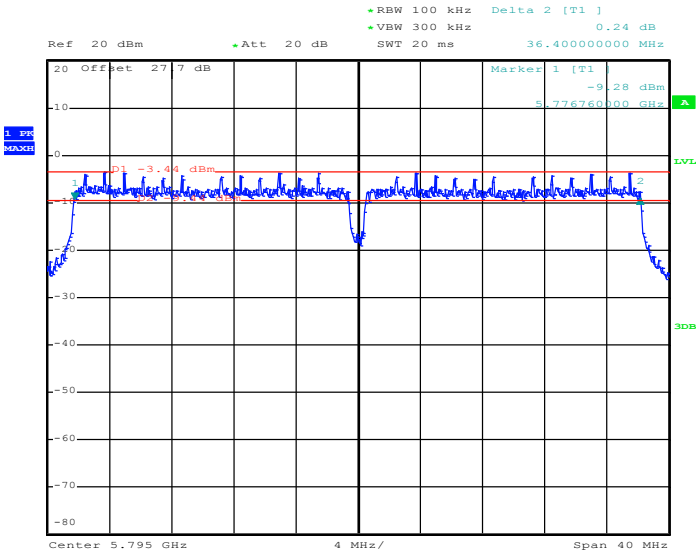
Date: 22.MAR.2013 23:59:40

6 dB Bandwidth Plot on 5GHz 802.11n HT40 Channel 151



Date: 21.MAR.2013 00:01:54

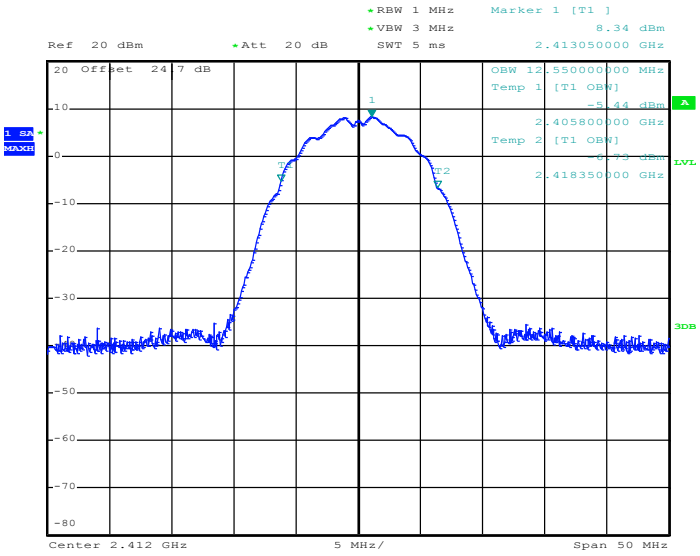
6 dB Bandwidth Plot on 5GHz 802.11n HT40 Channel 159



Date: 21.MAR.2013 00:05:42

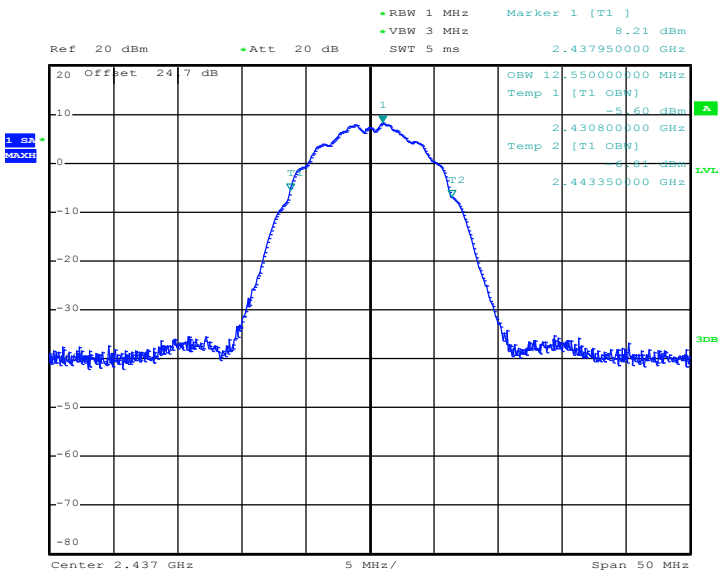
3.1.8 Test Result of 99% Bandwidth Plots

99% Occupied Bandwidth Plot on 802.11b Channel 01



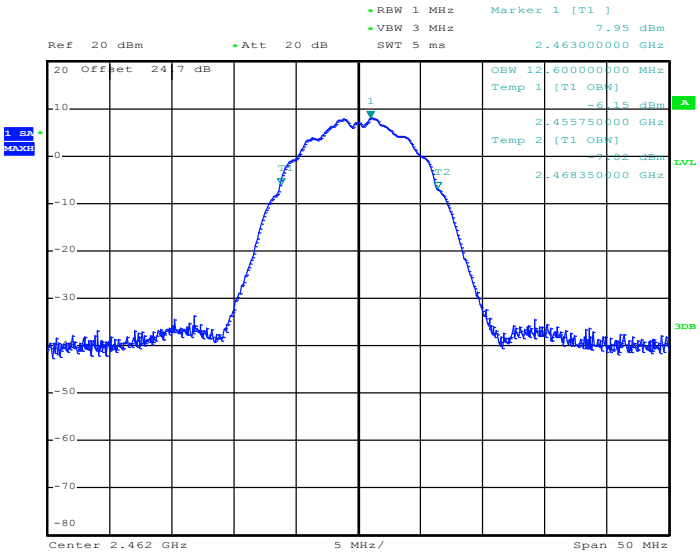
Date: 20.MAR.2013 20:19:43

99% Occupied Bandwidth Plot on 802.11b Channel 06



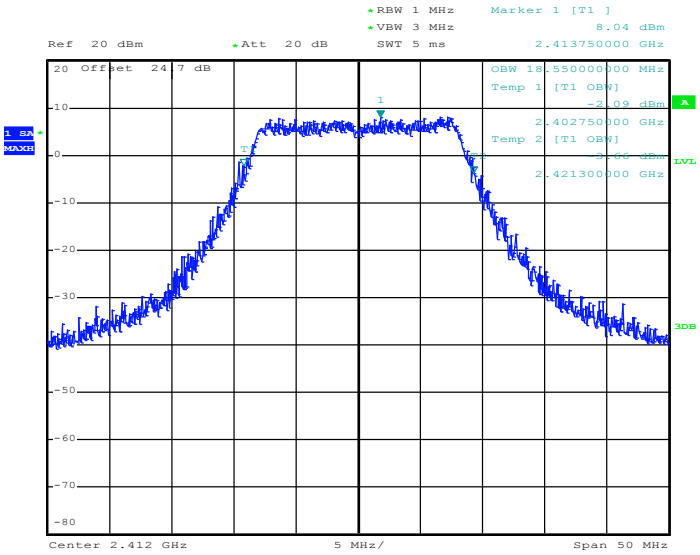
Date: 20.MAR.2013 20:02:33

99% Occupied Bandwidth Plot on 802.11b Channel 11



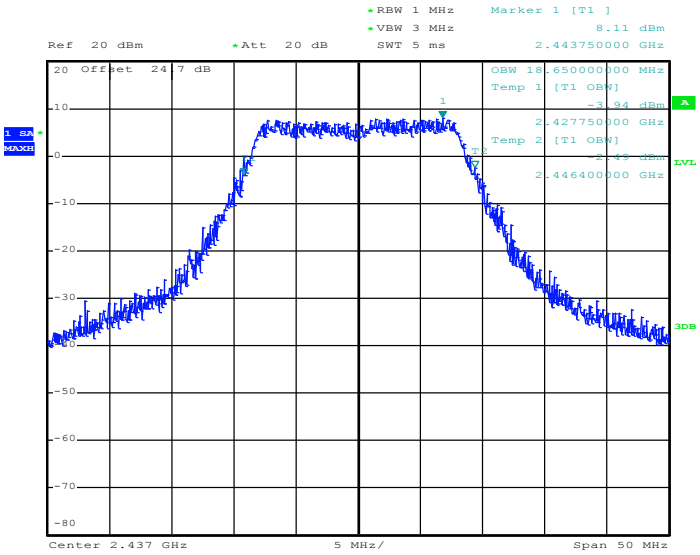
Date: 20.MAR.2013 20:26:13

99% Occupied Bandwidth Plot on 802.11g Channel 01



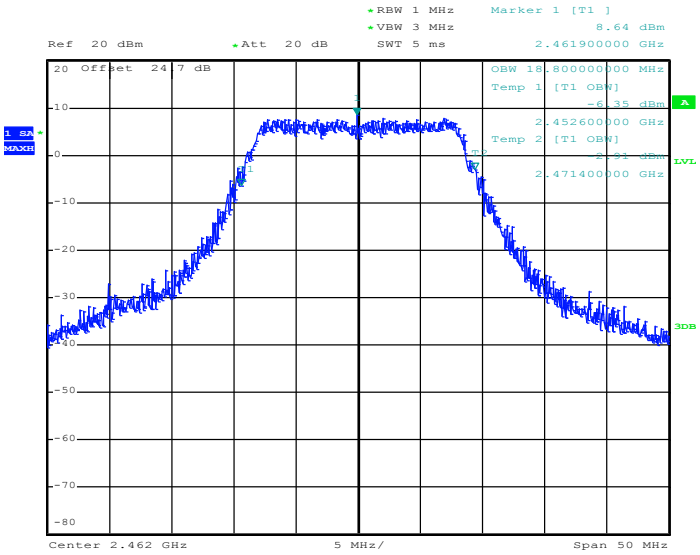
Date: 20.MAR.2013 20:40:43

99% Occupied Bandwidth Plot on 802.11g Channel 06



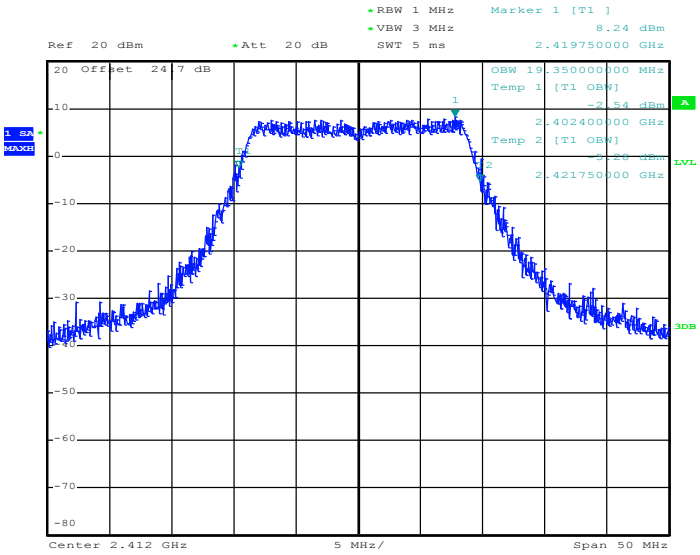
Date: 20.MAR.2013 20:44:36

99% Occupied Bandwidth Plot on 802.11g Channel 11



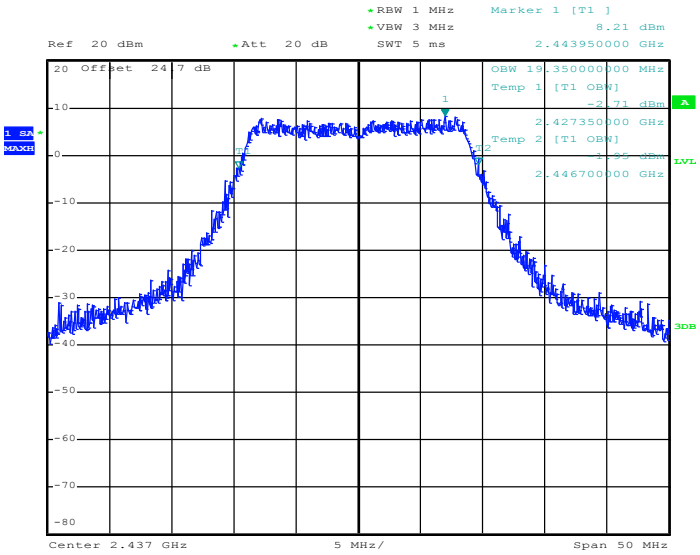
Date: 20.MAR.2013 21:58:42

99% Occupied Bandwidth Plot on 2.4GHz 802.11n HT20 Channel 01



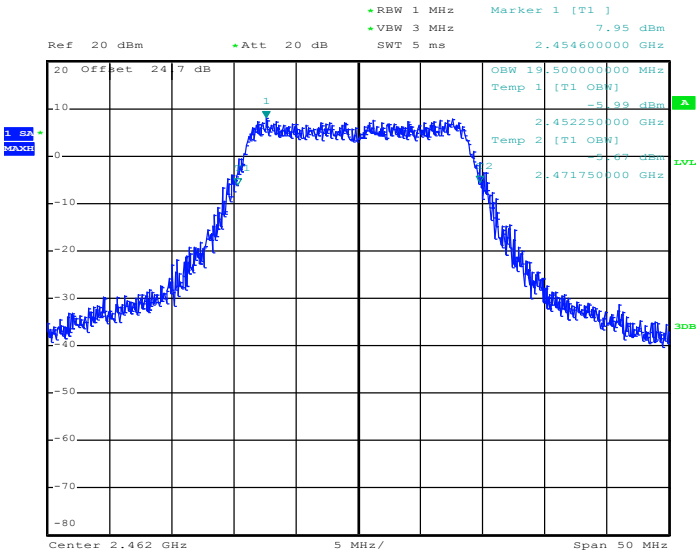
Date: 20.MAR.2013 22:07:44

99% Occupied Bandwidth Plot on 2.4GHz 802.11n HT20 Channel 06



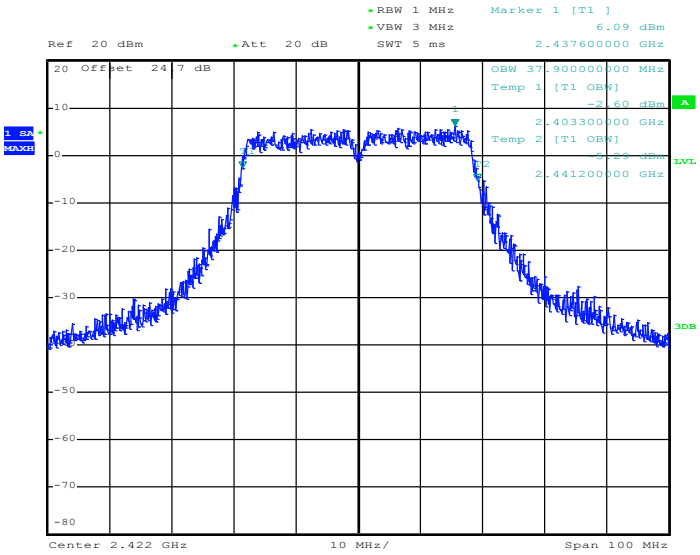
Date: 20.MAR.2013 22:11:32

99% Occupied Bandwidth Plot on 2.4GHz 802.11n HT20 Channel 11



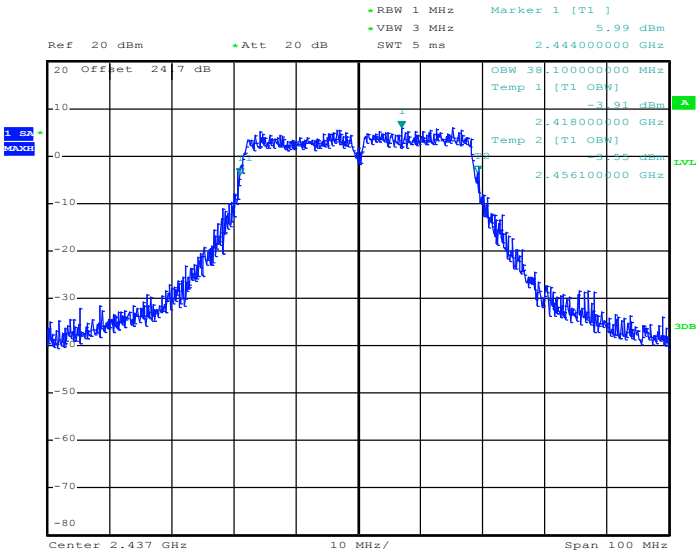
Date: 20.MAR.2013 22:26:43

99% Occupied Bandwidth Plot on 2.4GHz 802.11n HT40 Channel 03



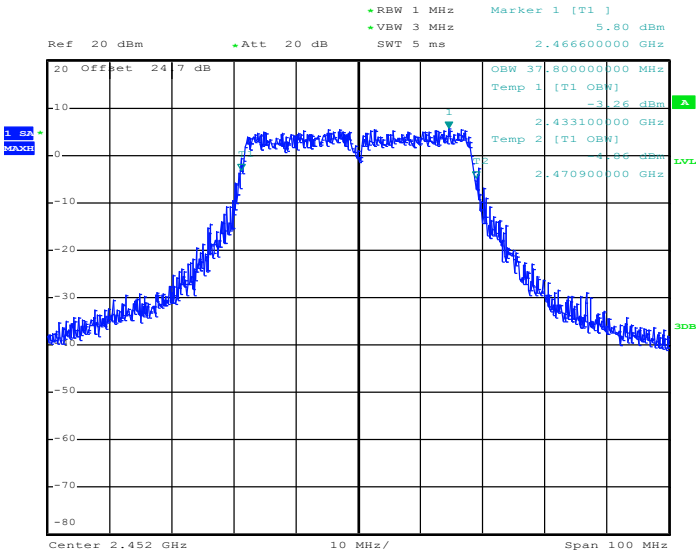
Date: 20.MAR.2013 22:42:31

99% Occupied Bandwidth Plot on 2.4GHz 802.11n HT40 Channel 06



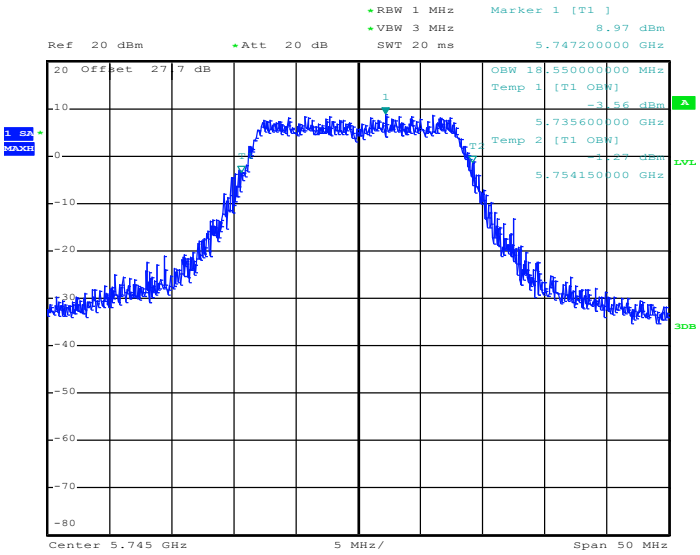
Date: 20.MAR.2013 22:48:53

99% Occupied Bandwidth Plot on 2.4GHz 802.11n HT40 Channel 09



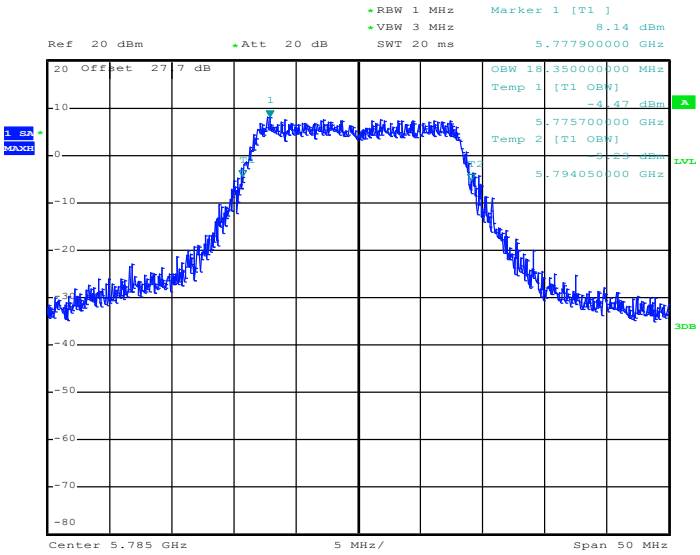
Date: 20.MAR.2013 22:59:29

99% Occupied Bandwidth Plot on 802.11a Channel 149



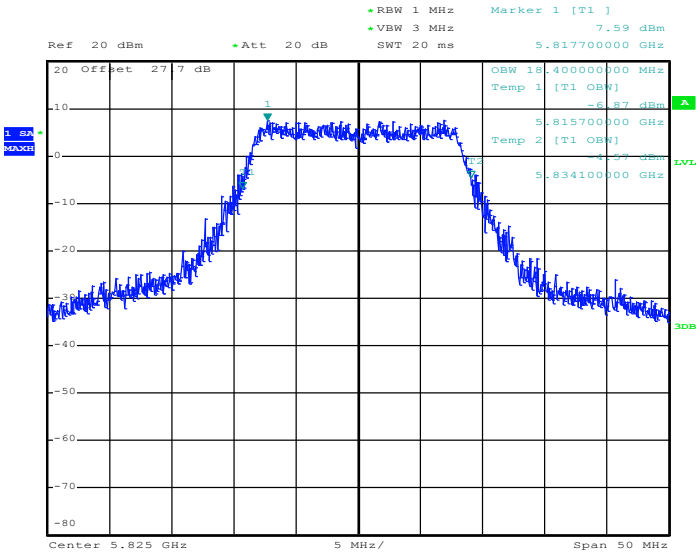
Date: 20.MAR.2013 23:13:33

99% Occupied Bandwidth Plot on 802.11a Channel 157



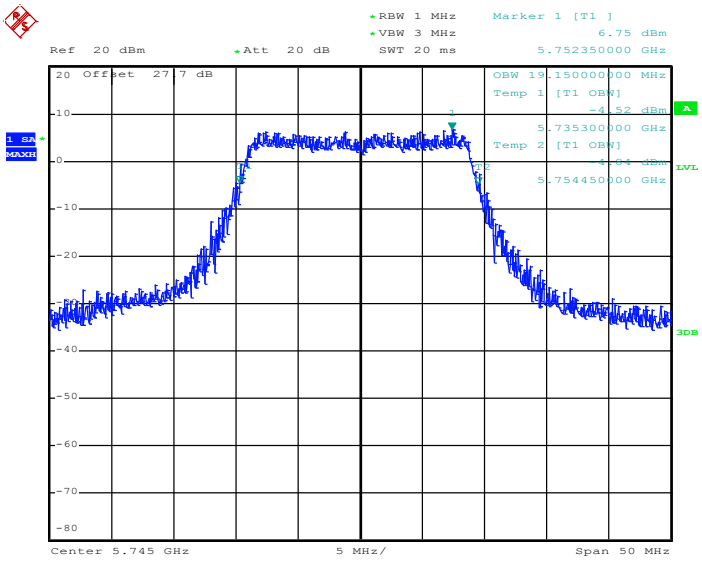
Date: 20.MAR.2013 23:18:44

99% Occupied Bandwidth Plot on 802.11a Channel 165



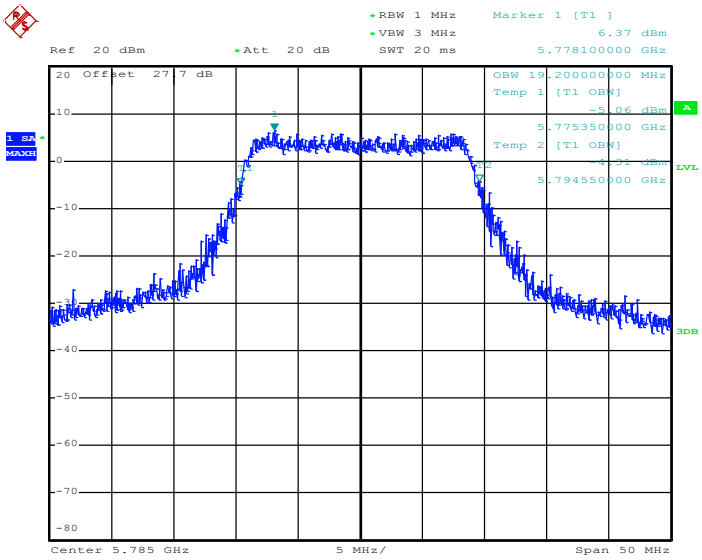
Date: 20.MAR.2013 23:23:09

99% Occupied Bandwidth Plot on 5GHz 802.11n HT20 Channel 149



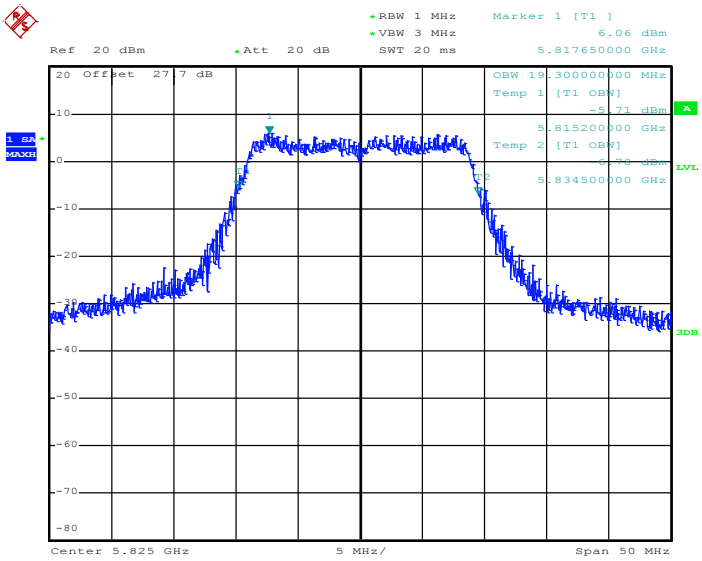
Date: 22.MAR.2013 23:54:32

99% Occupied Bandwidth Plot on 5GHz 802.11n HT20 Channel 157



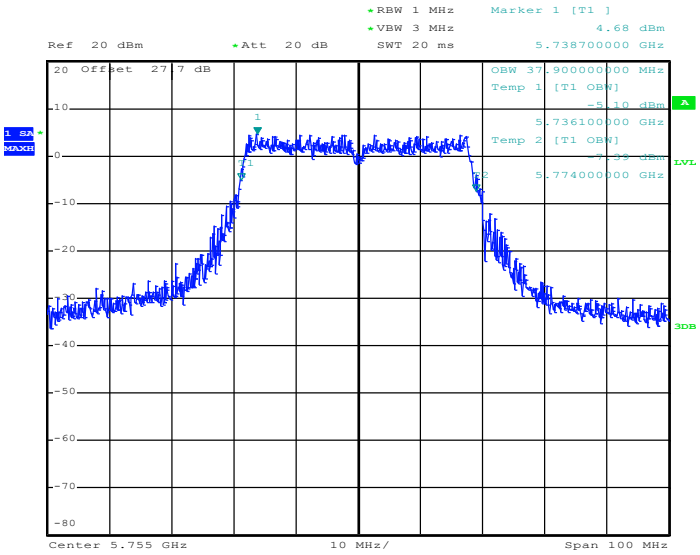
Date: 22.MAR.2013 23:58:03

99% Occupied Bandwidth Plot on 5GHz 802.11n HT20 Channel 165



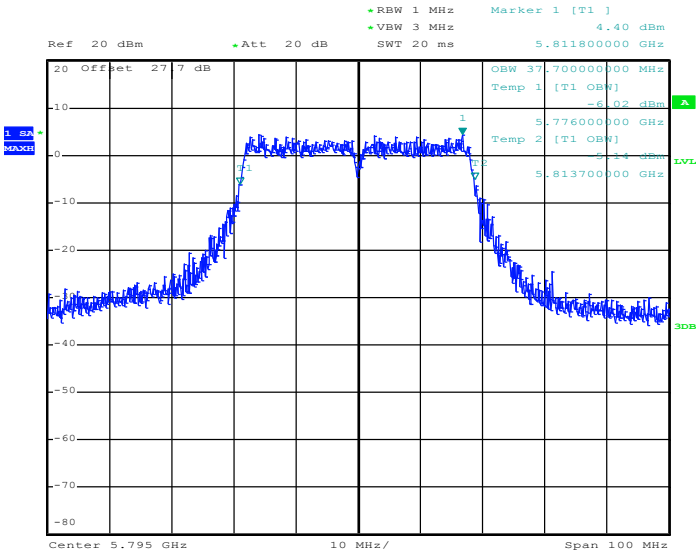
Date: 23.MAR.2013 00:01:20

99% Occupied Bandwidth Plot on 5GHz 802.11n HT40 Channel 151



Date: 21.MAR.2013 00:04:09

99% Occupied Bandwidth Plot on 5GHz 802.11n HT40 Channel 159



Date: 21.MAR.2013 00:08:51

3.2 Output Power Measurement

3.2.1 Limit of Output Power

For systems using digital modulation in the 2400-2483.5MHz and 5725-5850MHz, 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.

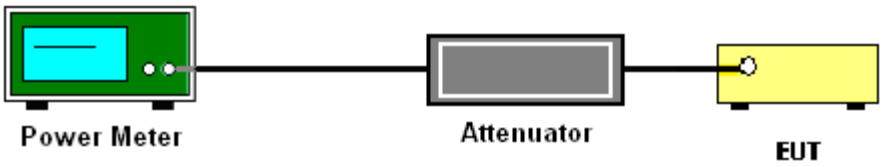
3.2.2 Measuring Instruments

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 :	802.11b	Temperature :	24~26℃
Test Engineer :	Reece Lee	Relative Humidity :	50~53%

Channel	Frequency (MHz)	802.11b Peak Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	15.75	30	Pass
06	2437	15.57	30	Pass
11	2462	15.68	30	Pass

Test Mode :	802.11g	Temperature :	24~26℃
Test Engineer :	Reece Lee	Relative Humidity :	50~53%

Channel	Frequency (MHz)	802.11g Peak Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	21.39	30	Pass
06	2437	21.29	30	Pass
11	2462	21.36	30	Pass

Test Mode :	802.11n HT20	Temperature :	24~26℃
Test Engineer :	Reece Lee	Relative Humidity :	50~53%

Channel	Frequency (MHz)	2.4GHz 802.11n HT20 Peak Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	21.57	30	Pass
06	2437	21.49	30	Pass
11	2462	21.43	30	Pass

Test Mode :	802.11n HT40	Temperature :	24~26℃
Test Engineer :	Reece Lee	Relative Humidity :	50~53%

Channel	Frequency (MHz)	2.4GHz 802.11n HT40 Peak Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
03	2422	21.81	30	Pass
06	2437	21.73	30	Pass
09	2452	21.78	30	Pass

Test Mode :	802.11 a	Temperature :	24~26℃
Test Engineer :	Reece Lee	Relative Humidity :	50~53%

Channel	Frequency (MHz)	802.11a Peak Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
149	5745	20.97	30	Pass
157	5785	20.35	30	Pass
165	5825	19.94	30	Pass

Test Mode :	802.11n HT20	Temperature :	24~26℃
Test Engineer :	Reece Lee	Relative Humidity :	50~53%

Channel	Frequency (MHz)	5GHz 802.11n HT20 Peak Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
149	5745	20.80	30	Pass
157	5785	20.23	30	Pass
165	5825	20.10	30	Pass

Test Mode :	802.11n HT40	Temperature :	24~26℃
Test Engineer :	Reece Lee	Relative Humidity :	50~53%

Channel	Frequency (MHz)	5GHz 802.11n HT40 Peak Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
151	5755	20.12	30	Pass
159	5795	19.14	30	Pass

3.2.6 Test Result of Average output Power (Reporting Only)

Test Mode :	802.11b	Temperature :	24~26℃
Test Engineer :	Reece Lee	Relative Humidity :	50~53%
Duty Cycle:	97.49%	Duty Factor:	0.11dB

Channel	Frequency (MHz)	802.11b Average Output Power (dBm)
01	2412	12.74
06	2437	12.68
11	2462	12.53

Test Mode :	802.11g	Temperature :	24~26℃
Test Engineer :	Reece Lee	Relative Humidity :	50~53%
Duty Cycle:	86.44%	Duty Factor:	0.63dB

Channel	Frequency (MHz)	802.11g Average Output Power (dBm)
01	2412	11.89
06	2437	11.71
11	2462	11.88

Test Mode :	802.11n HT20	Temperature :	24~26℃
Test Engineer :	Reece Lee	Relative Humidity :	50~53%
Duty Cycle:	86.10%	Duty Factor:	0.65dB

Channel	Frequency (MHz)	2.4GHz 802.11n HT20 Average Output Power (dBm)
01	2412	11.92
06	2437	11.79
11	2462	11.86

Test Mode :	802.11n HT40	Temperature :	24~26℃
Test Engineer :	Reece Lee	Relative Humidity :	50~53%
Duty Cycle:	75.96%	Duty Factor:	1.19dB

Channel	Frequency (MHz)	2.4GHz 802.11n HT40 Average Output Power (dBm)
03	2422	10.83
06	2437	12.76
09	2452	12.77

Test Mode :	802.11a	Temperature :	24~26℃
Test Engineer :	Reece Lee	Relative Humidity :	50~53%
Duty Cycle:	86.55%	Duty Factor:	0.63dB

Channel	Frequency (MHz)	802.11a Average Output Power (dBm)
149	5745	11.40
157	5785	10.97
165	5825	10.40

Test Mode :	802.11n HT20	Temperature :	24~26℃
Test Engineer :	Reece Lee	Relative Humidity :	50~53%
Duty Cycle:	86.49%	Duty Factor:	0.63dB

Channel	Frequency (MHz)	5GHz 802.11n HT20 Average Output Power (dBm)
149	5745	11.21
157	5785	10.91
165	5825	10.38

Test Mode :	802.11n HT40	Temperature :	24~26℃
Test Engineer :	Reece Lee	Relative Humidity :	50~53%
Duty Cycle:	75.96%	Duty Factor:	1.19dB

Channel	Frequency (MHz)	5GHz 802.11n HT40 Average Output Power (dBm)
151	5755	10.97
159	5795	10.24

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.

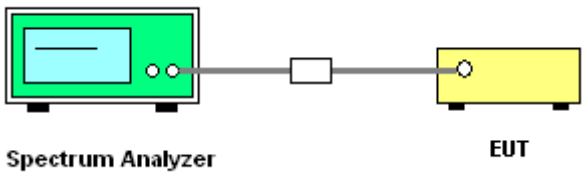
3.3.2 Measuring Instruments

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.
7. The Measured power density (dBm)/ 100KHz is a reference level and used as 20dBc down limit line for Conducted Band Edges and Conducted Spurious Emission.

3.3.4 Test Setup



3.3.5 Test Result of Power Spectral Density

Test Mode :	802.11b	Temperature :	24~26℃
Test Engineer :	Reece Lee	Relative Humidity :	50~53%

Channel	Frequency (MHz)	802.11b Power Density		Max. Limits (dBm/3kHz)	Pass/Fail
		PSD/100kHz (dBm)	PSD/3kHz (dBm)		
01	2412	4.04	-9.20	8	Pass
06	2437	4.25	-10.15	8	Pass
11	2462	4.29	-9.25	8	Pass

Test Mode :	802.11g	Temperature :	24~26℃
Test Engineer :	Reece Lee	Relative Humidity :	50~53%

Channel	Frequency (MHz)	802.11g Power Density		Max. Limits (dBm/3kHz)	Pass/Fail
		PSD/100kHz (dBm)	PSD/3kHz (dBm)		
01	2412	-0.16	-14.09	8	Pass
06	2437	0.08	-13.99	8	Pass
11	2462	-0.33	-14.84	8	Pass

Test Mode :	802.11n HT20	Temperature :	24~26℃
Test Engineer :	Reece Lee	Relative Humidity :	50~53%

Channel	Frequency (MHz)	2.4GHz 802.11n HT20 Power Density		Max. Limits (dBm/3kHz)	Pass/Fail
		PSD/100kHz (dBm)	PSD/3kHz (dBm)		
01	2412	-0.41	-13.88	8	Pass
06	2437	-0.08	-13.89	8	Pass
11	2462	-0.82	-14.21	8	Pass

Test Mode :	802.11n HT40	Temperature :	24~26℃
Test Engineer :	Reece Lee	Relative Humidity :	50~53%

Channel	Frequency (MHz)	2.4GHz 802.11n HT40 Power Density		Max. Limits (dBm/3kHz)	Pass/Fail
		PSD/100kHz (dBm)	PSD/3kHz (dBm)		
03	2422	-2.09	-16.65	8	Pass
06	2437	-2.37	-16.29	8	Pass
09	2452	-2.29	-16.79	8	Pass

Test Mode :	802.11a	Temperature :	24~26℃
Test Engineer :	Reece Lee	Relative Humidity :	50~53%

Channel	Frequency (MHz)	802.11a Power Density		Max. Limits (dBm/3kHz)	Pass/Fail
		PSD/100kHz (dBm)	PSD/3kHz (dBm)		
149	5745	0.23	-13.35	8	Pass
157	5785	-0.67	-13.92	8	Pass
165	5825	-0.70	-14.43	8	Pass

Test Mode :	802.11n HT20	Temperature :	24~26℃
Test Engineer :	Reece Lee	Relative Humidity :	50~53%

Channel	Frequency (MHz)	5GHz 802.11n HT20 Power Density		Max. Limits (dBm/3kHz)	Pass/Fail
		PSD/100kHz (dBm)	PSD/3kHz (dBm)		
149	5745	-1.17	-13.48	8	Pass
157	5785	-1.61	-16.65	8	Pass
165	5825	-2.00	-14.82	8	Pass

Test Mode :	802.11n HT40	Temperature :	24~26℃
Test Engineer :	Reece Lee	Relative Humidity :	50~53%

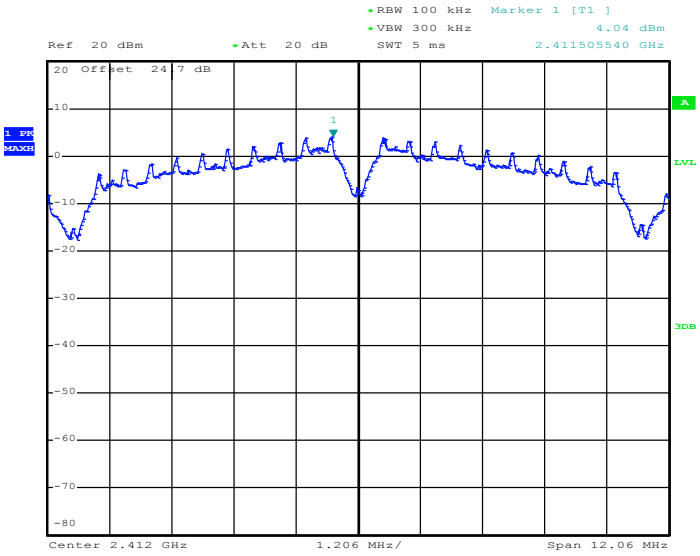
Channel	Frequency (MHz)	5GHz 802.11n HT40 Power Density		Max. Limits (dBm/3kHz)	Pass/Fail
		PSD/100kHz (dBm)	PSD/3kHz (dBm)		
151	5755	-3.38	-17.04	8	Pass
159	5795	-3.95	-17.76	8	Pass

Note:

1. *Measured power density (dBm) has offset with cable loss.*
2. *The Measured power density (dBm)/ 100kHz is reference level and used as 20dBc down for Conducted Band Edges and Conducted Spurious Emission limit line.*

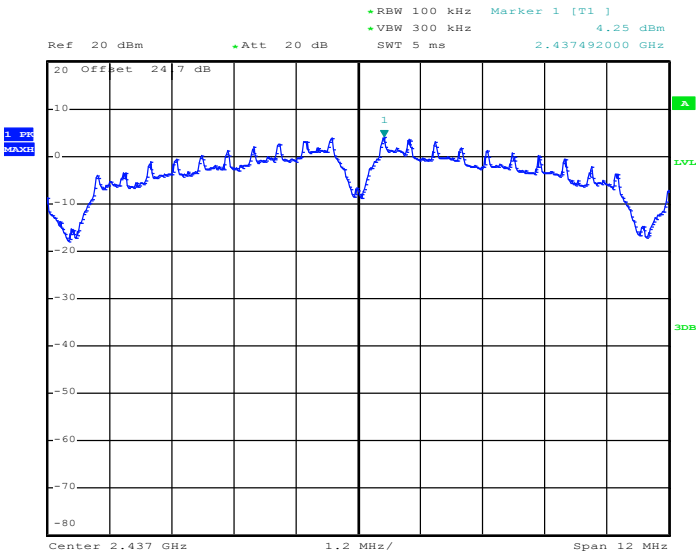
3.3.6 Test Result of Power Spectral Density Plots (100kHz)

PSD 100kHz Plot on 802.11b Channel 01



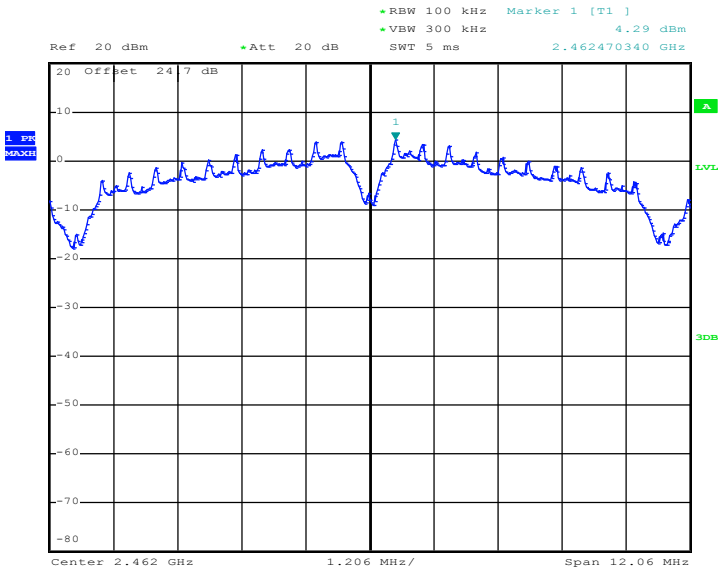
Date: 20.MAR.2013 20:18:28

PSD 100kHz Plot on 802.11b Channel 06



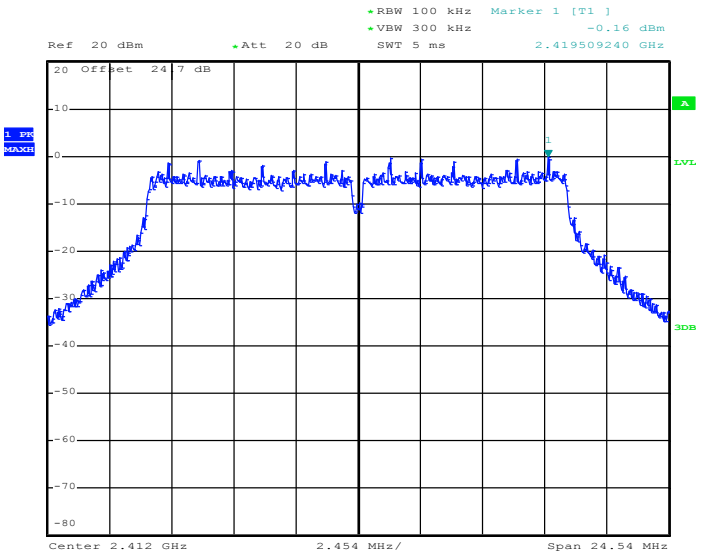
Date: 20.MAR.2013 20:00:51

PSD 100kHz Plot on 802.11b Channel 11



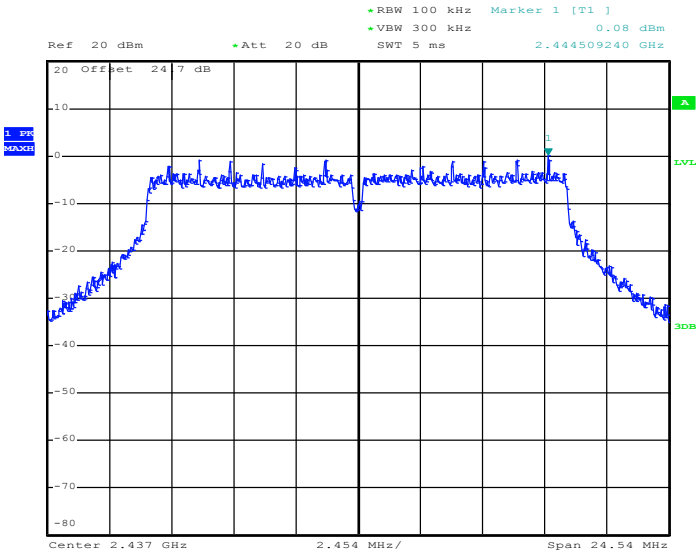
Date: 20.MAR.2013 20:24:53

PSD 100kHz Plot on 802.11g Channel 01



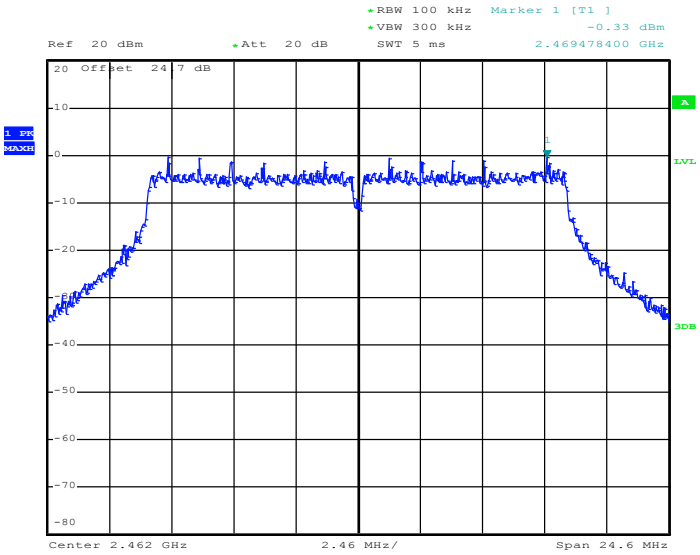
Date: 20.MAR.2013 20:38:31

PSD 100kHz Plot 802.11g Channel 06



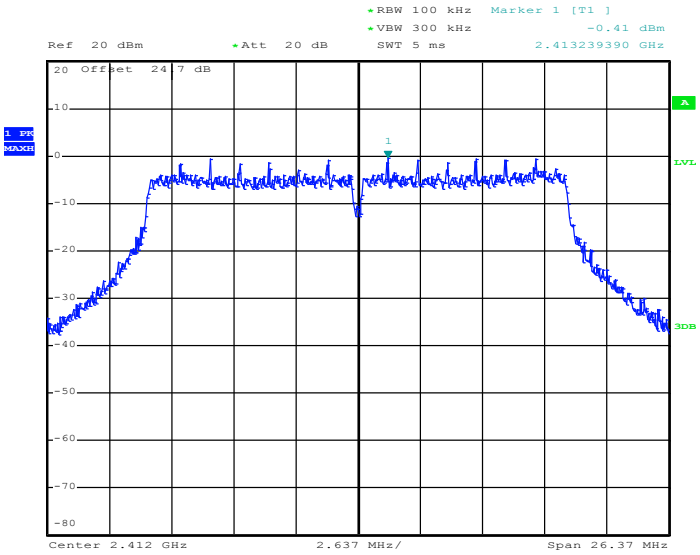
Date: 20.MAR.2013 20:43:36

PSD 100kHz Plot 802.11g Channel 11



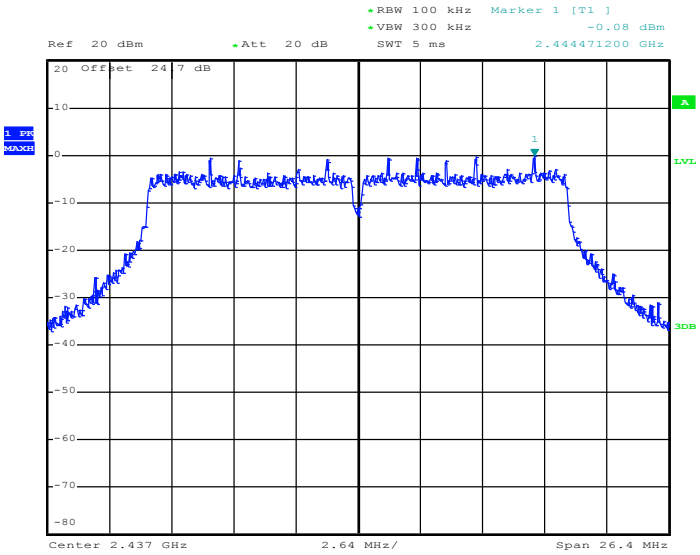
Date: 20.MAR.2013 21:57:27

PSD 100kHz Plot on 2.4GHz 802.11n HT20 Channel 01



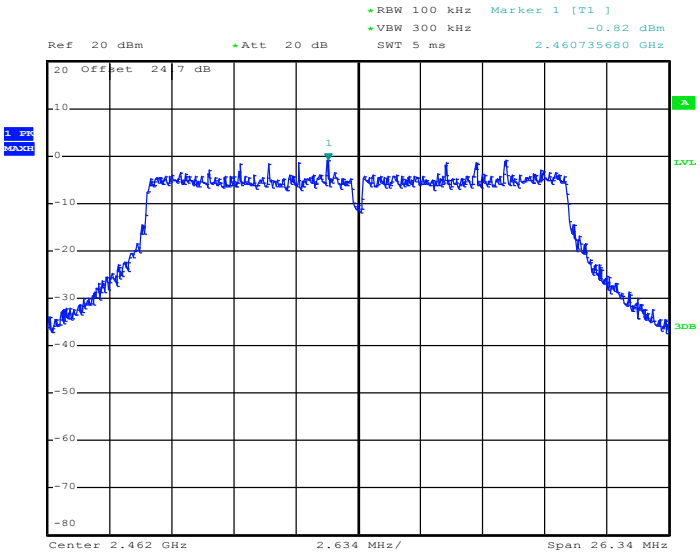
Date: 20.MAR.2013 22:06:33

PSD 100kHz Plot on 2.4GHz 802.11n HT20 Channel 06



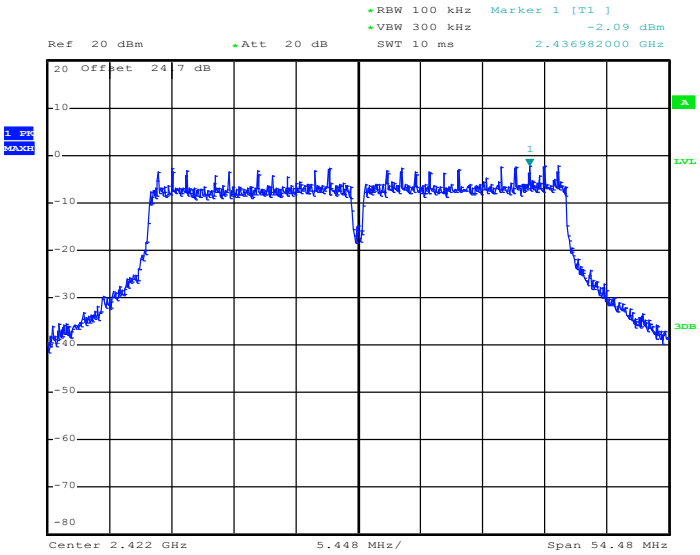
Date: 20.MAR.2013 22:10:19

PSD 100kHz Plot on 2.4GHz 802.11n HT20 Channel 11



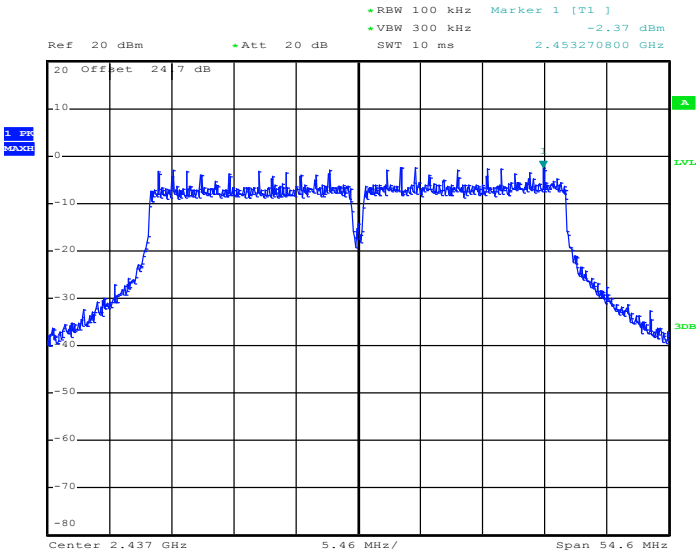
Date: 20.MAR.2013 22:25:29

PSD 100kHz Plot on 2.4GHz 802.11n HT40 Channel 03



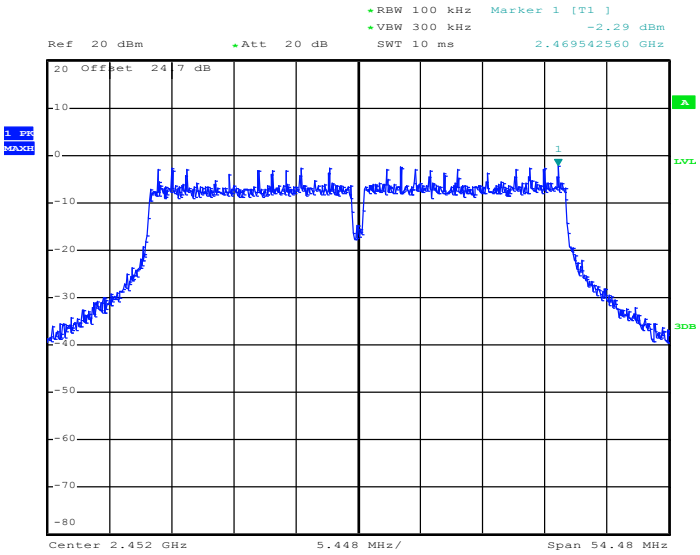
Date: 20.MAR.2013 22:34:28

PSD 100kHz Plot on 2.4GHz 802.11n HT40 Channel 06



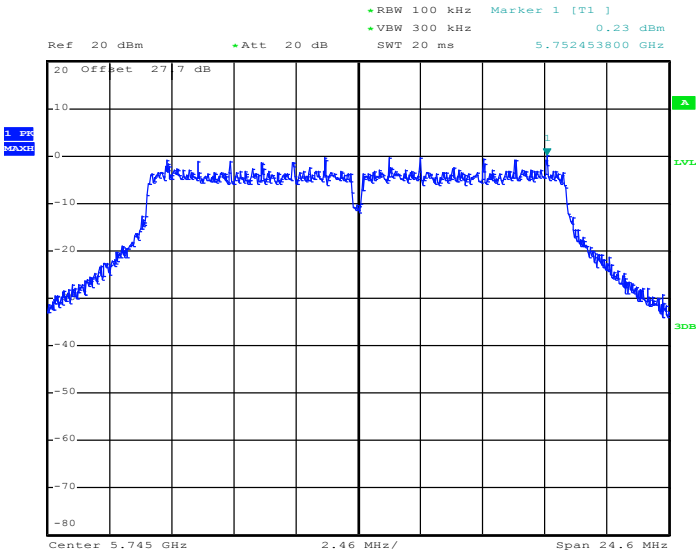
Date: 20.MAR.2013 22:46:47

PSD 100kHz Plot on 2.4GHz 802.11n HT40 Channel 09



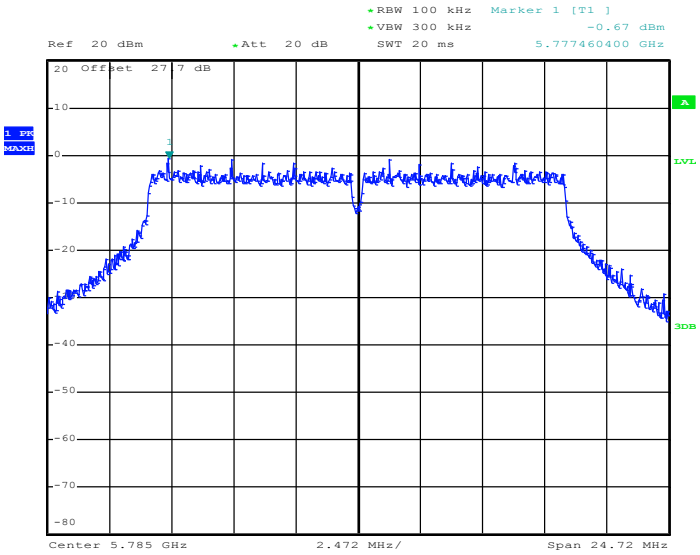
Date: 20.MAR.2013 22:57:06

PSD 100kHz Plot on 802.11a Channel 149



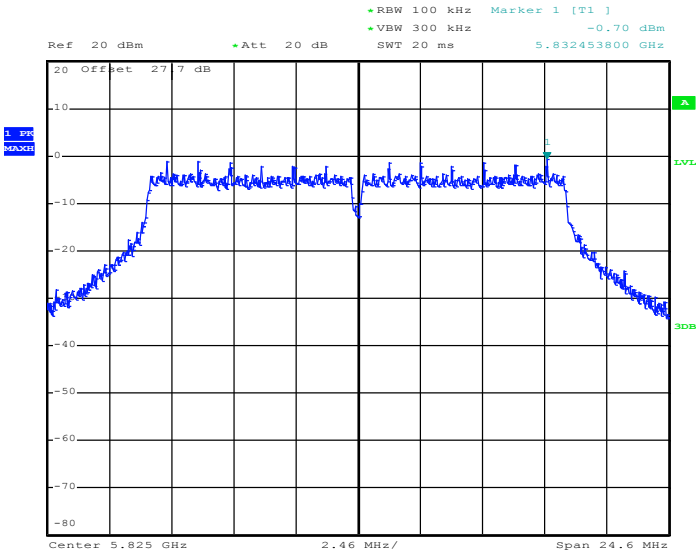
Date: 20.MAR.2013 23:08:07

PSD 100kHz Plot on 802.11a Channel 157



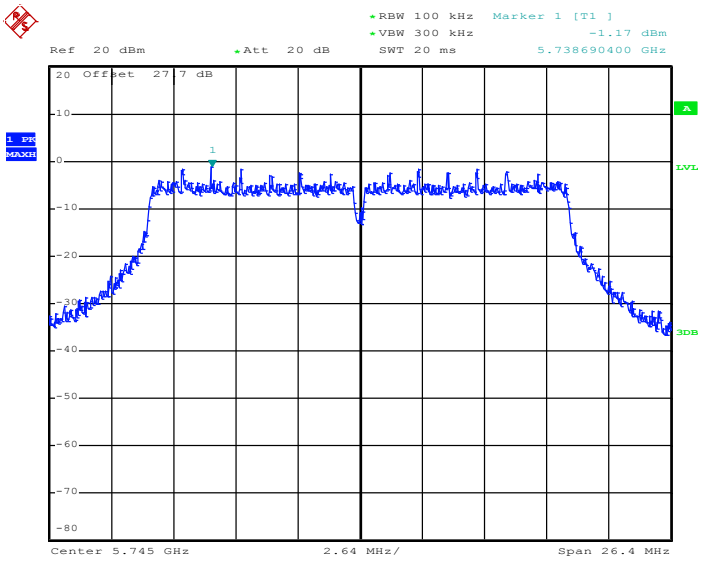
Date: 20.MAR.2013 23:17:38

PSD 100kHz Plot on 802.11a Channel 165



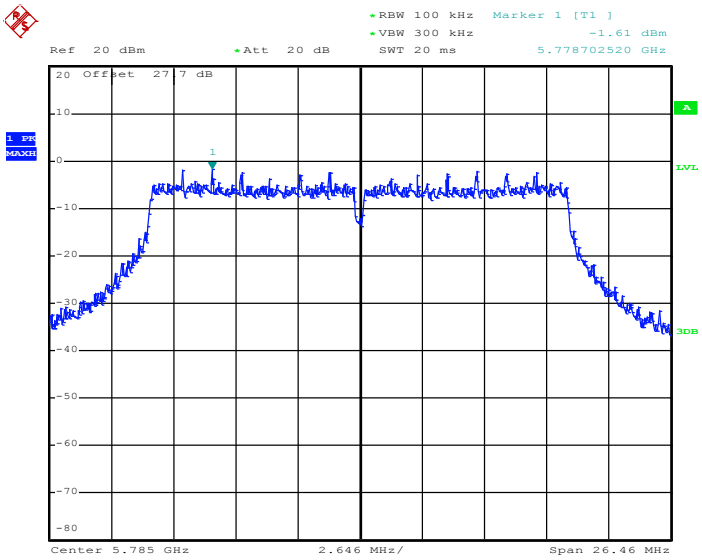
Date: 20.MAR.2013 23:21:10

PSD 100kHz Plot on 5GHz 802.11n HT20 Channel 149



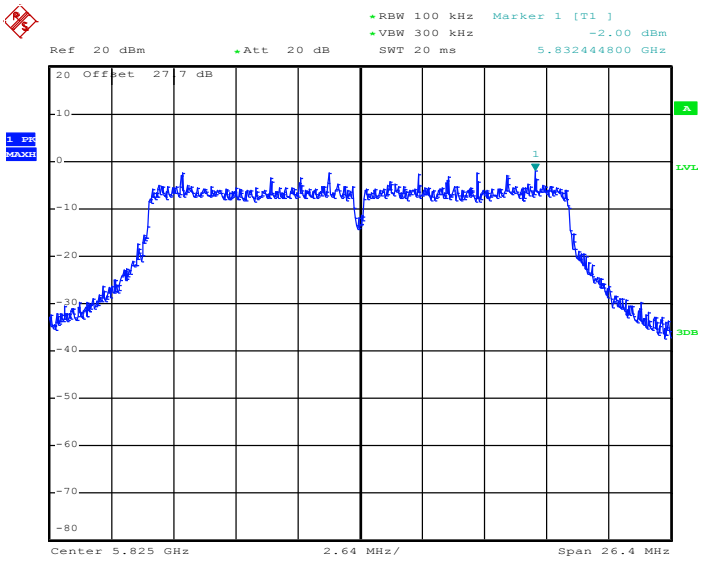
Date: 22.MAR.2013 23:52:39

PSD 100kHz Plot on 5GHz 802.11n HT20 Channel 157



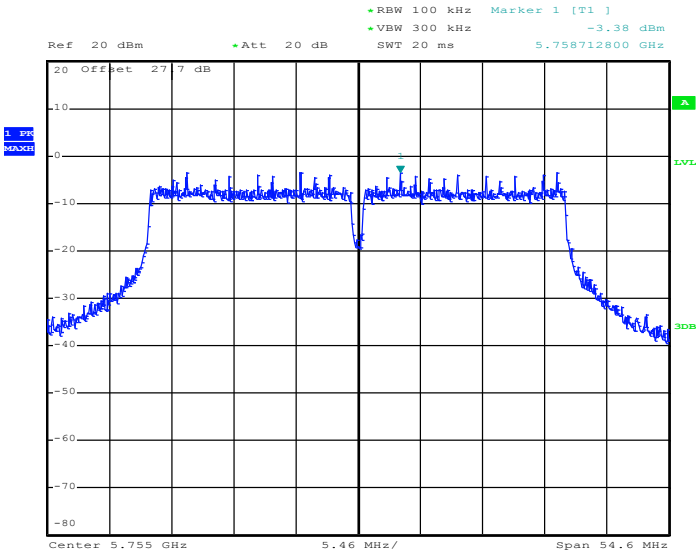
Date: 22.MAR.2013 23:57:09

PSD 100kHz Plot on 5GHz 802.11n HT20 Channel 165



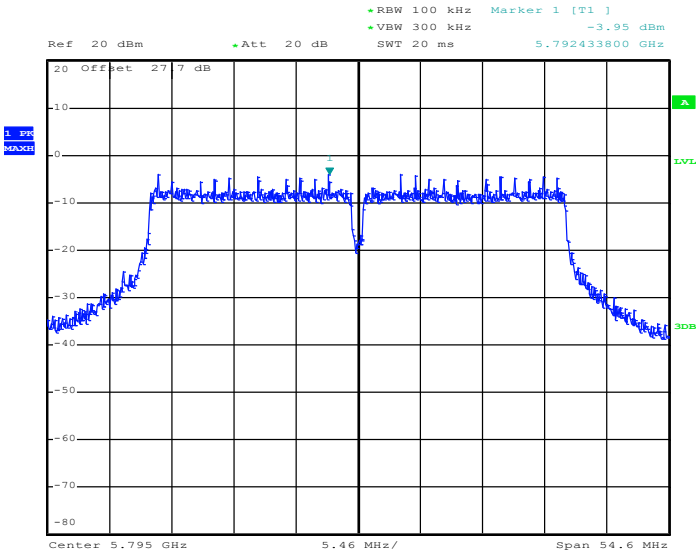
Date: 23.MAR.2013 00:00:12

PSD 100kHz Plot on 5GHz 802.11n HT40 Channel 151



Date: 21.MAR.2013 00:02:32

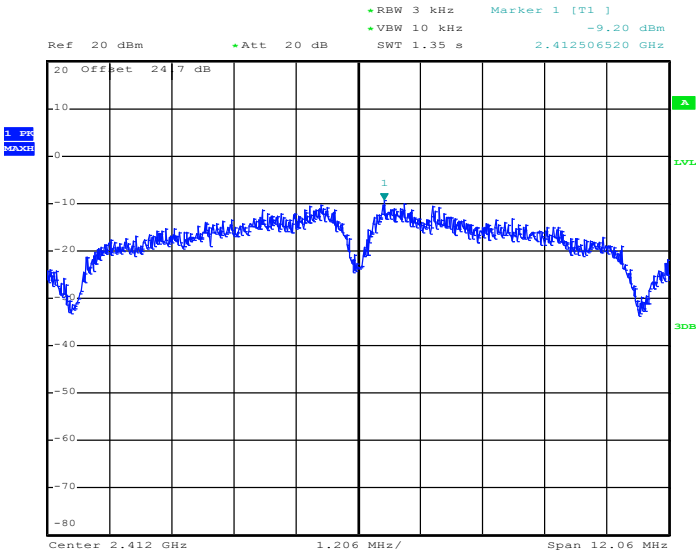
PSD 100kHz Plot on 5GHz 802.11n HT40 Channel 159



Date: 21.MAR.2013 00:06:21

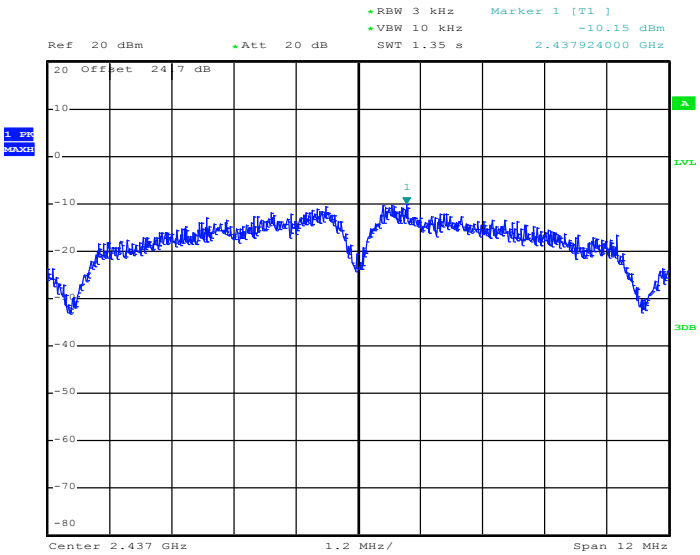
3.3.7 Test Result of Power Spectral Density Plots (3kHz)

PSD 3kHz Plot on 802.11b Channel 01



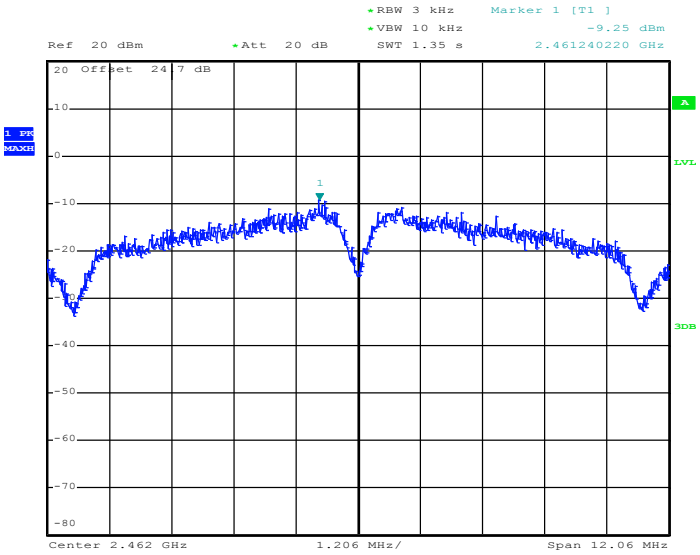
Date: 20.MAR.2013 20:18:15

PSD 3kHz Plot on 802.11b Channel 06



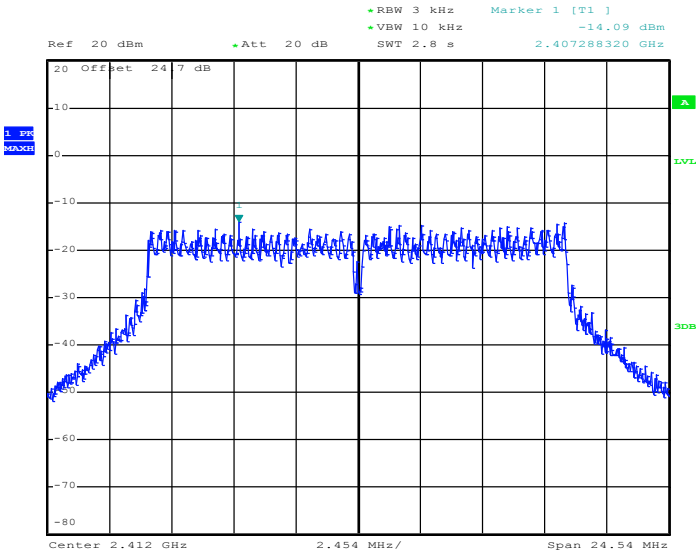
Date: 20.MAR.2013 20:00:42

PSD 3kHz Plot on 802.11b Channel 11



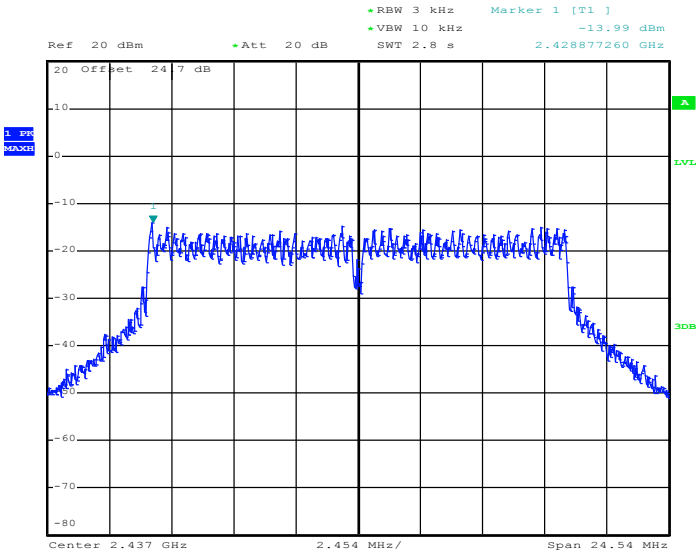
Date: 20.MAR.2013 20:24:42

PSD 3kHz Plot on 802.11g Channel 01



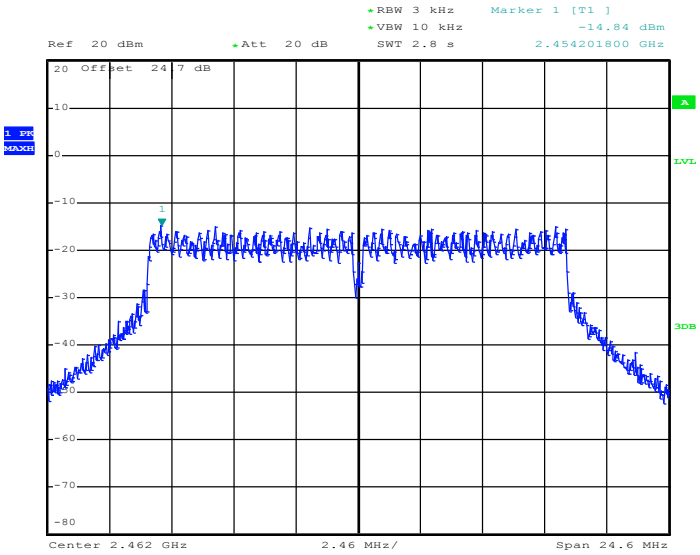
Date: 20.MAR.2013 20:38:14

PSD 3kHz Plot on 802.11g Channel 06



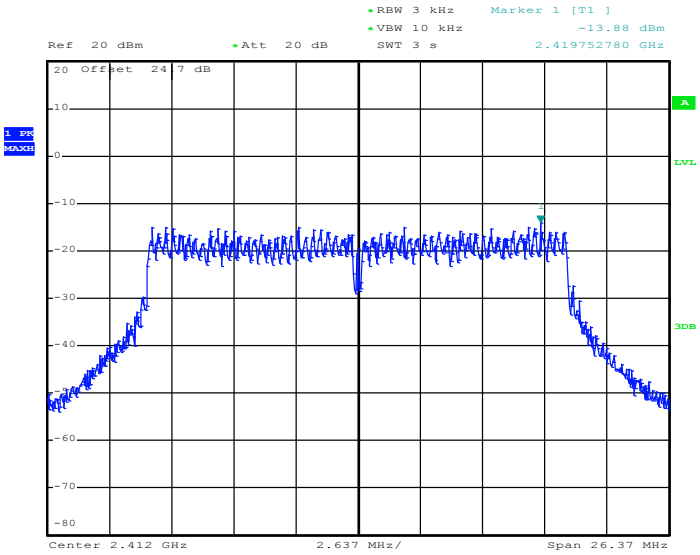
Date: 20.MAR.2013 20:43:26

PSD 3kHz Plot on 802.11g Channel 11



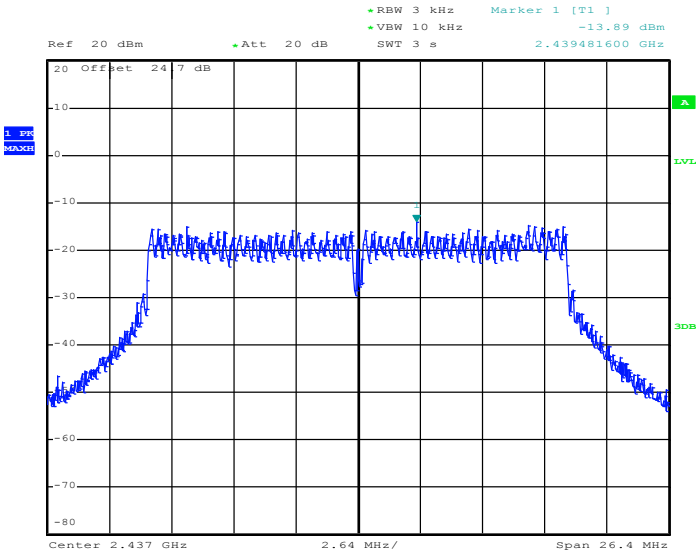
Date: 20.MAR.2013 21:57:01

PSD 3kHz Plot on 2.4GHz 802.11n HT20 Channel 01



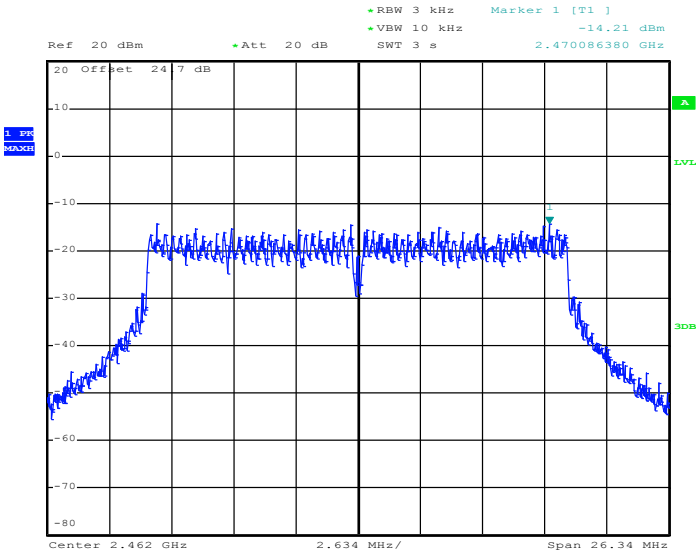
Date: 20.MAR.2013 22:06:22

PSD 3kHz Plot on 2.4GHz 802.11n HT20 Channel 06



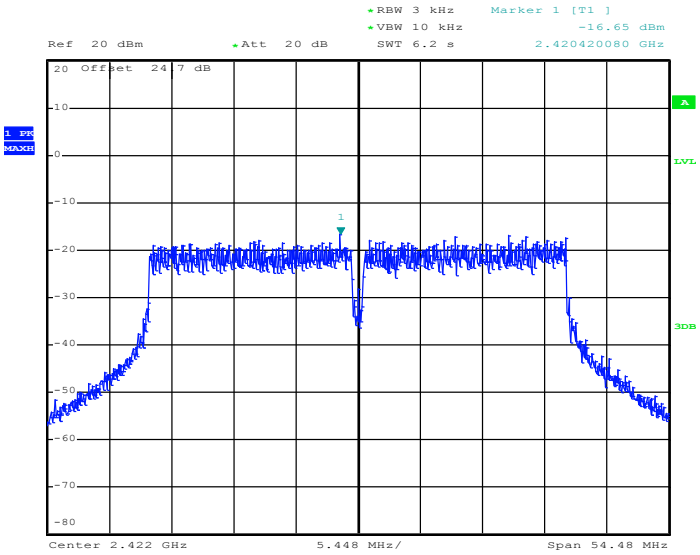
Date: 20.MAR.2013 22:10:07

PSD 3kHz Plot on 2.4GHz 802.11n HT20 Channel 11



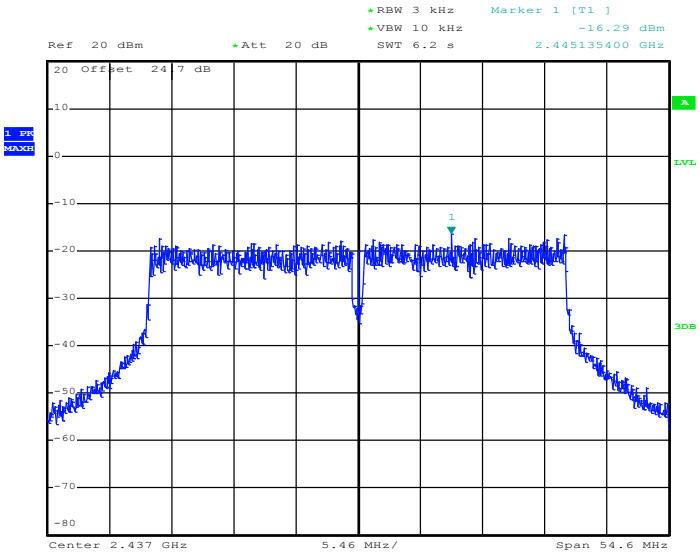
Date: 20.MAR.2013 22:25:09

PSD 3kHz Plot on 2.4GHz 802.11n HT40 Channel 03



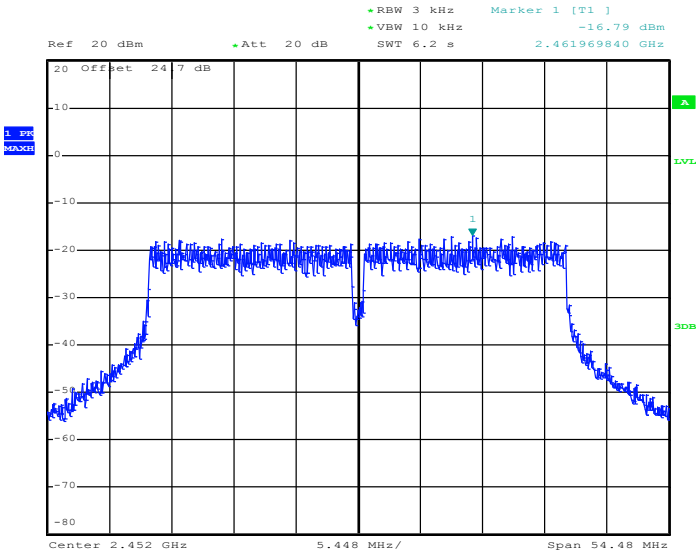
Date: 20.MAR.2013 22:34:17

PSD 3kHz Plot on 2.4GHz 802.11n HT40 Channel 06



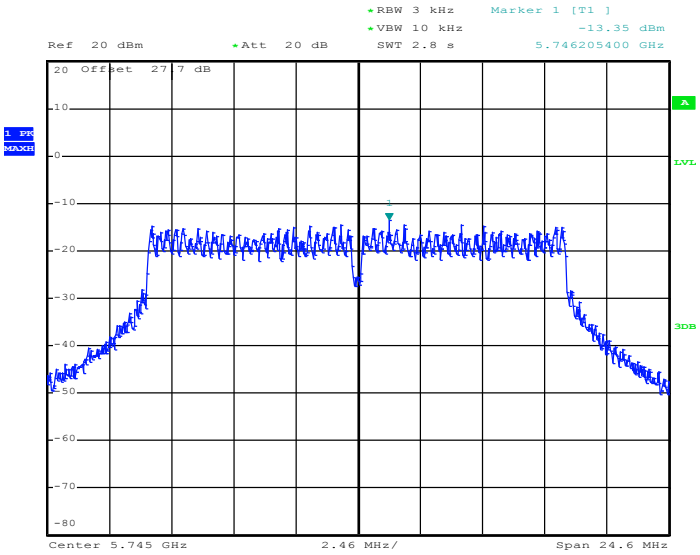
Date: 20.MAR.2013 22:46:37

PSD 3kHz Plot on 2.4GHz 802.11n HT40 Channel 09



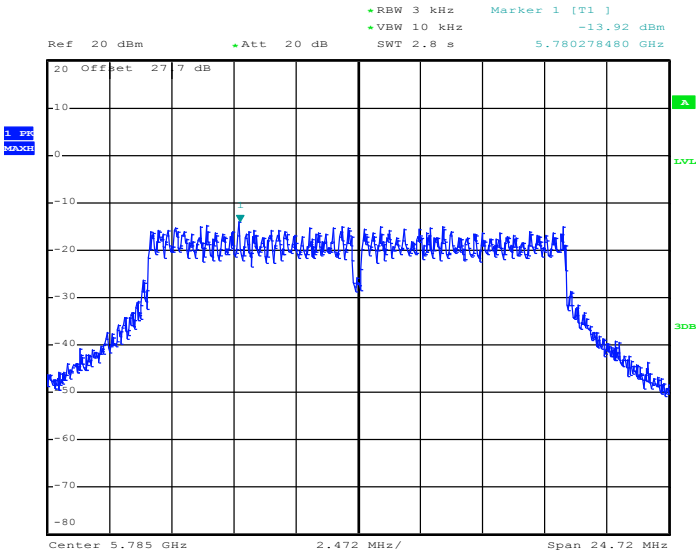
Date: 20.MAR.2013 22:56:57

PSD 3kHz Plot on 802.11a Channel 149



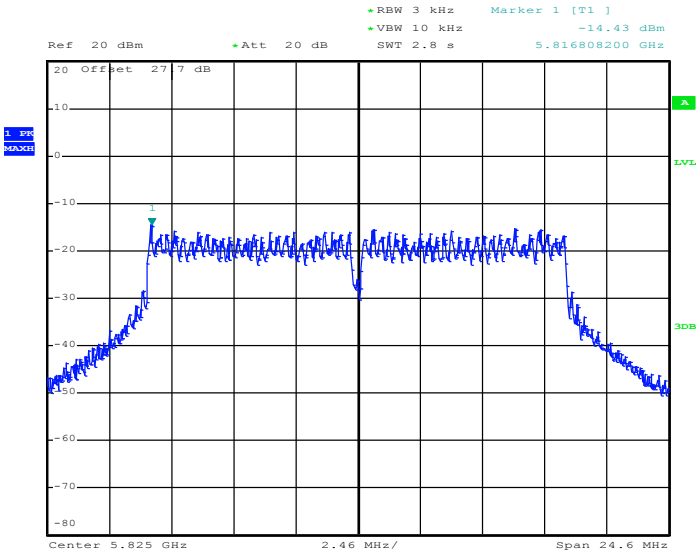
Date: 20.MAR.2013 23:07:58

PSD 3kHz Plot on 802.11a Channel 157



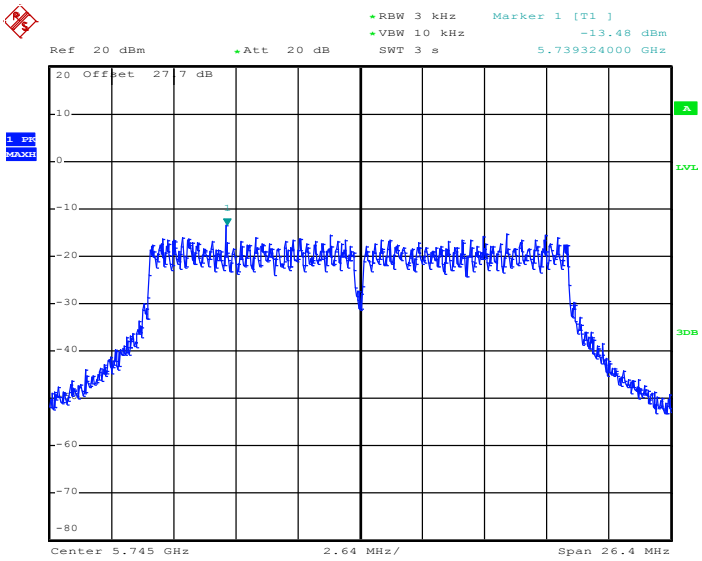
Date: 20.MAR.2013 23:17:25

PSD 3kHz Plot on 802.11a Channel 165



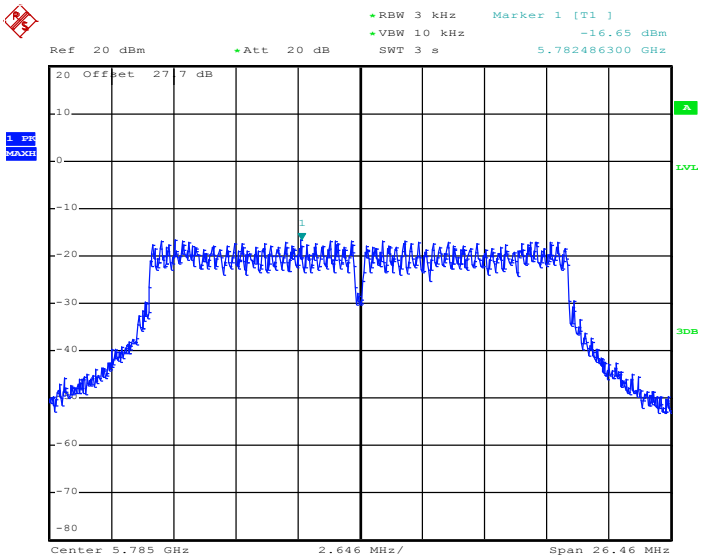
Date: 20.MAR.2013 23:20:59

PSD 3kHz Plot on 5GHz 802.11n HT20 Channel 149



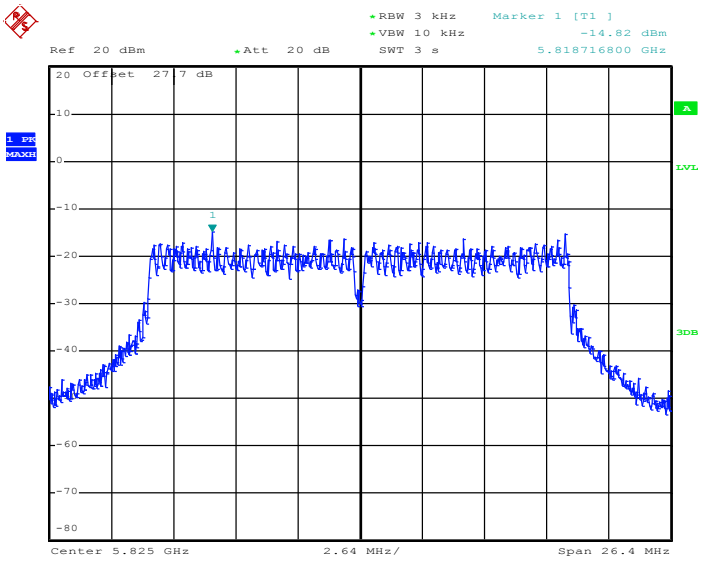
Date: 22.MAR.2013 23:52:29

PSD 3kHz Plot on 5GHz 802.11n HT20 Channel 157



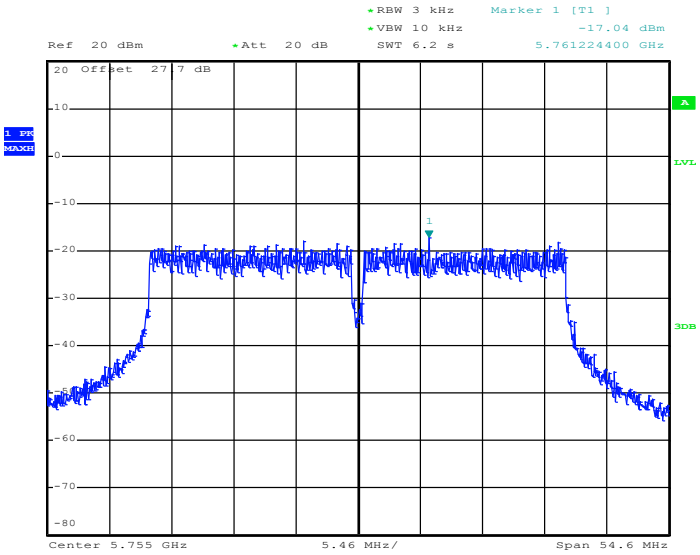
Date: 22.MAR.2013 23:57:00

PSD 3kHz Plot on 5GHz 802.11n HT20 Channel 165



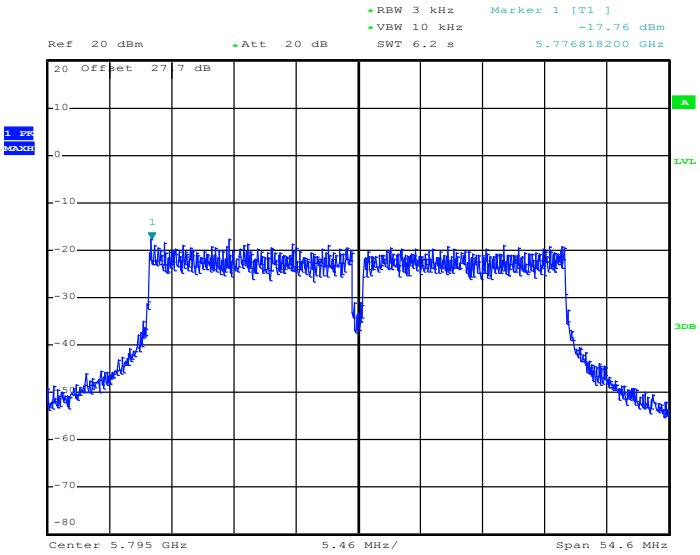
Date: 23.MAR.2013 00:00:03

PSD 3kHz Plot on 5GHz 802.11n HT40 Channel 151



Date: 21.MAR.2013 00:02:21

PSD 3kHz Plot on 5GHz 802.11n HT40 Channel 159



Date: 21.MAR.2013 00:06:12

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).

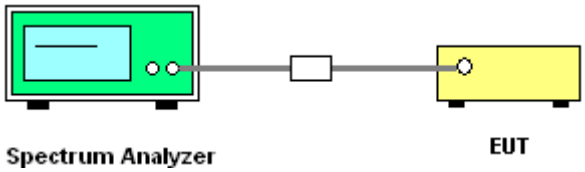
3.4.2 Measuring Instruments

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.

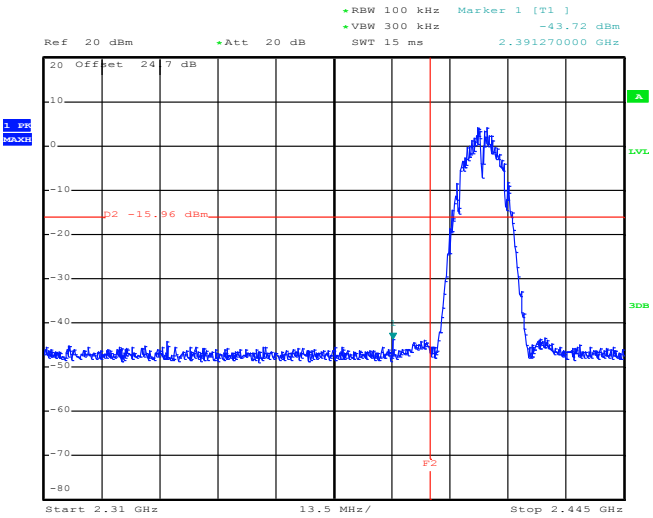
3.4.4 Test Setup



3.4.5 Test Result of Conducted Spurious at Band Edges

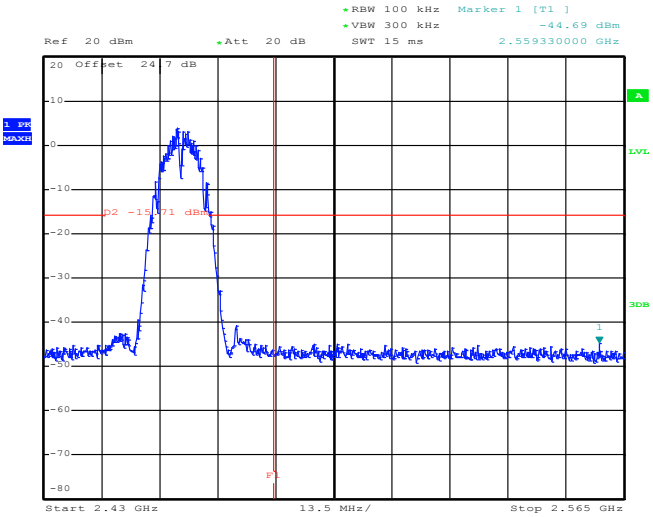
Test Mode :	802.11b	Temperature :	24~26℃
Test Band :	Low and High	Relative Humidity :	50~53%
Test Channel :	01 and 11	Test Engineer :	Reece Lee

Low Band Edge Plot on 802.11b Channel 01



Date: 20.MAR.2013 20:18:51

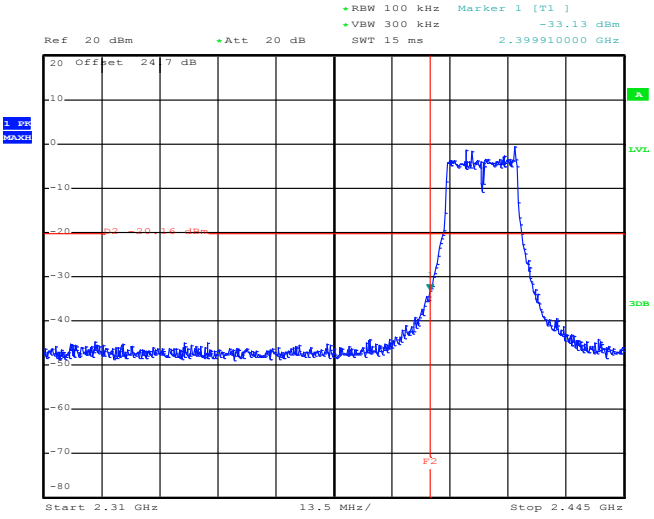
High Band Edge Plot on 802.11b Channel 11



Date: 20.MAR.2013 20:25:20

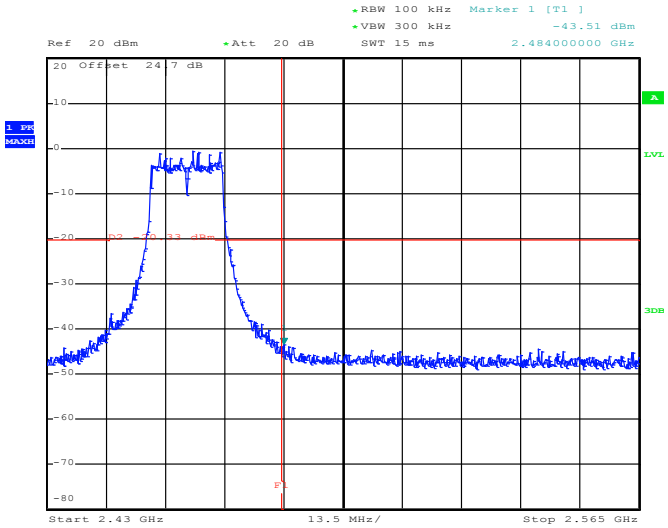
Test Mode :	802.11g	**Temperature :**	24~26℃
Test Band :	Low and High	**Relative Humidity :**	50~53%
Test Channel :	01 and 11	**Test Engineer :**	Reece Lee

Low Band Edge Plot on 802.11g Channel 01



Date: 20.MAR.2013 20:38:47

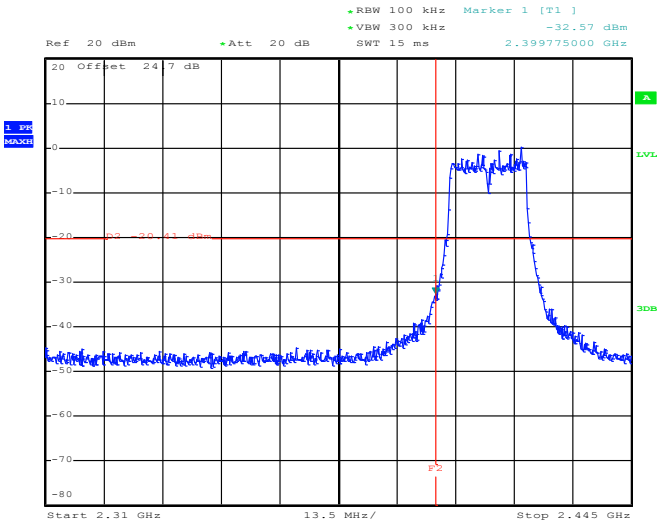
High Band Edge Plot on 802.11g Channel 11



Date: 20.MAR.2013 21:57:44

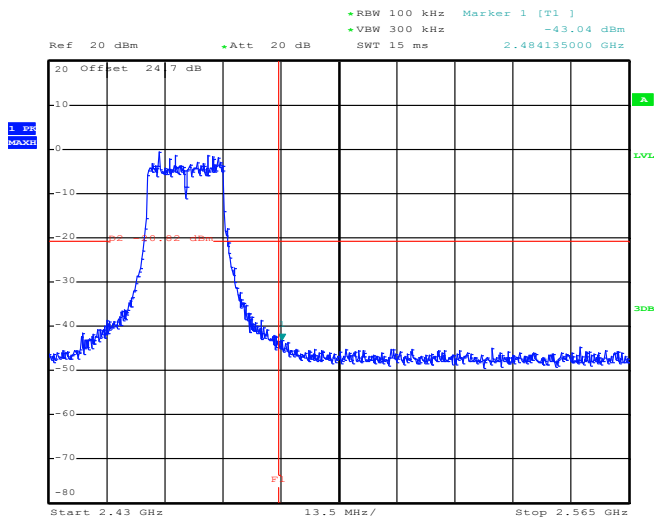
Test Mode :	802.11n HT20	Temperature :	24~26℃
Test Band :	Low and High	Relative Humidity :	50~53%
Test Channel :	01 and 11	Test Engineer :	Reece Lee

Low Band Edge Plot on 2.4GHz 802.11n HT20 Channel 01



Date: 20.MAR.2013 22:06:49

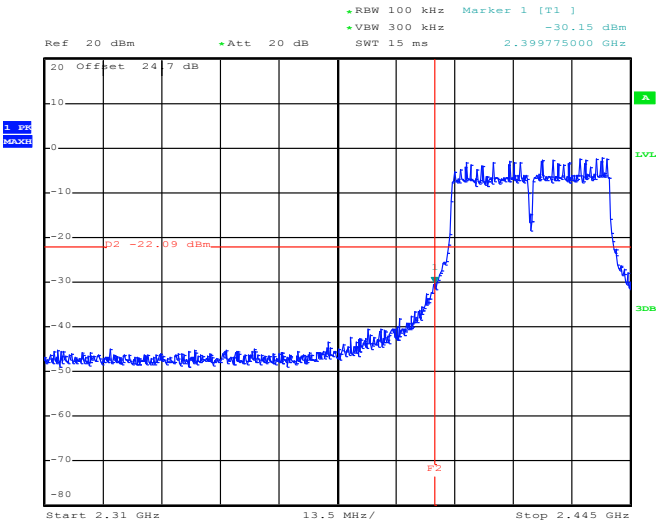
High Band Edge Plot on 2.4GHz 802.11n HT20 Channel 11



Date: 20.MAR.2013 22:25:45

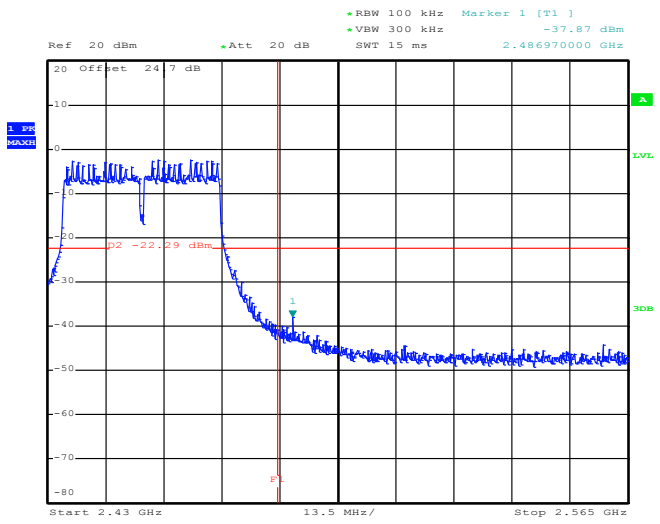
Test Mode :	802.11n HT40	Temperature :	24~26℃
Test Band :	Low and High	Relative Humidity :	50~53%
Test Channel :	03 and 09	Test Engineer :	Reece Lee

Low Band Edge Plot on 2.4GHz 802.11n HT40 Channel 03



Date: 20.MAR.2013 22:34:57

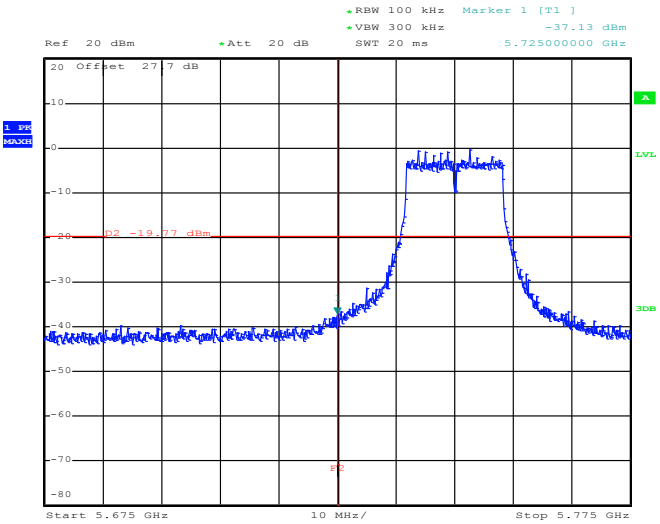
High Band Edge Plot on 2.4GHz 802.11n HT40 Channel 09



Date: 20.MAR.2013 22:57:34

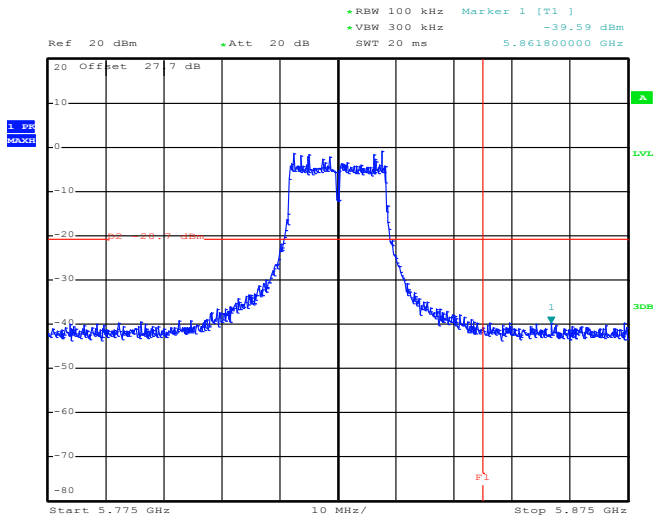
Test Mode :	802.11a	Temperature :	24~26℃
Test Band :	Low and High	Relative Humidity :	50~53%
Test Channel :	149 and 165	Test Engineer :	Reece Lee

Low Band Edge Plot on 802.11a Channel 149



Date: 20.MAR.2013 23:10:31

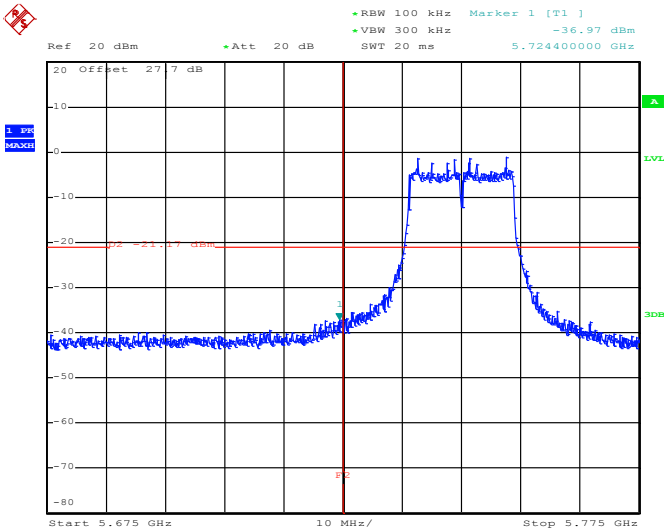
High Band Edge Plot on 802.11a Channel 165



Date: 20.MAR.2013 23:22:10

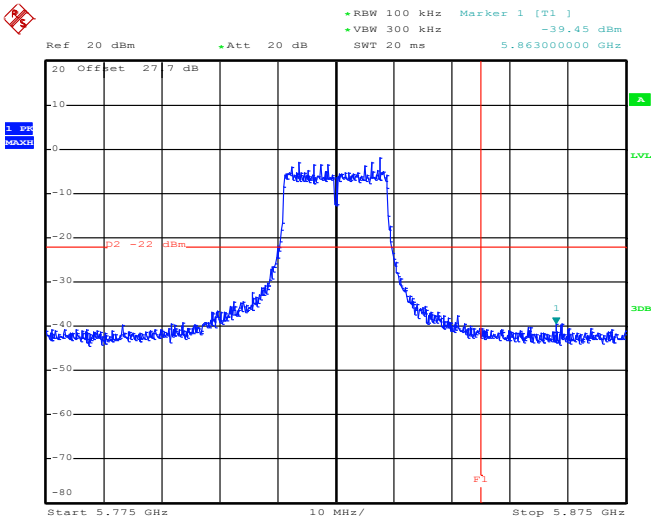
Test Mode :	802.11n HT20	Temperature :	24~26℃
Test Band :	Low and High	Relative Humidity :	50~53%
Test Channel :	149 and 165	Test Engineer :	Reece Lee

Low Band Edge Plot on 5GHz 802.11n HT20 Channel 149



Date: 22.MAR.2013 23:52:54

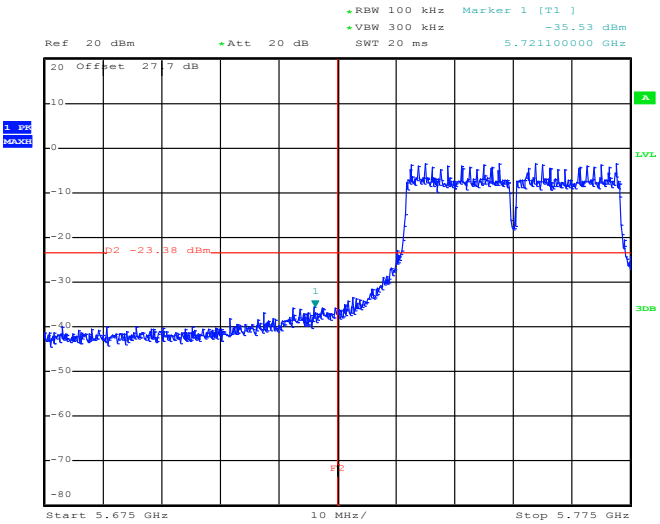
High Band Edge Plot on 5GHz 802.11n HT20 Channel 165



Date: 23.MAR.2013 00:00:27

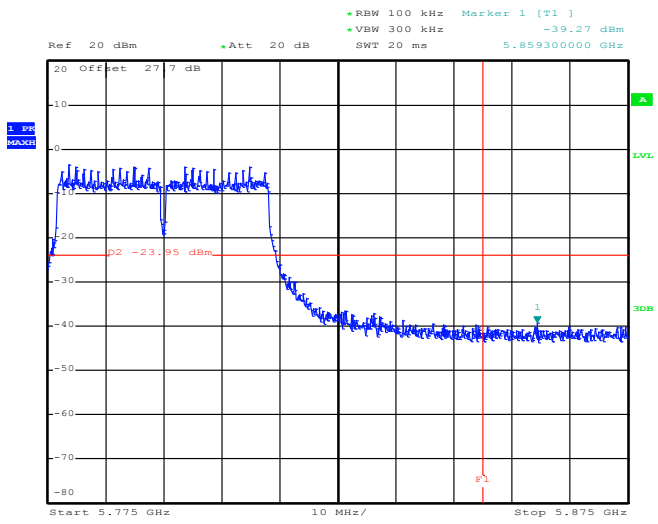
Test Mode :	802.11n HT40	Temperature :	24~26℃
Test Band :	Low and High	Relative Humidity :	50~53%
Test Channel :	151 and 159	Test Engineer :	Reece Lee

Low Band Edge Plot on 5GHz 802.11n HT40 Channel 151



Date: 21.MAR.2013 00:03:15

High Band Edge Plot on 5GHz 802.11n HT40 Channel 159



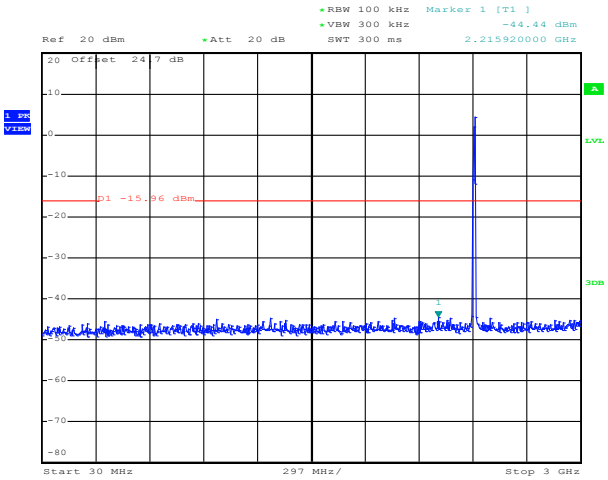
Date: 21.MAR.2013 00:06:49

3.4.6 Test Result of Conducted Spurious Emission

Test Mode :	802.11b	Temperature :	24~26℃
Test Band :	30MHz-3GHz and 2G-25GHz	Relative Humidity :	50~53%
Test Channel :	01, 06, 11	Test Engineer :	Reece Lee

802.11b 30 MHz~3 GHz

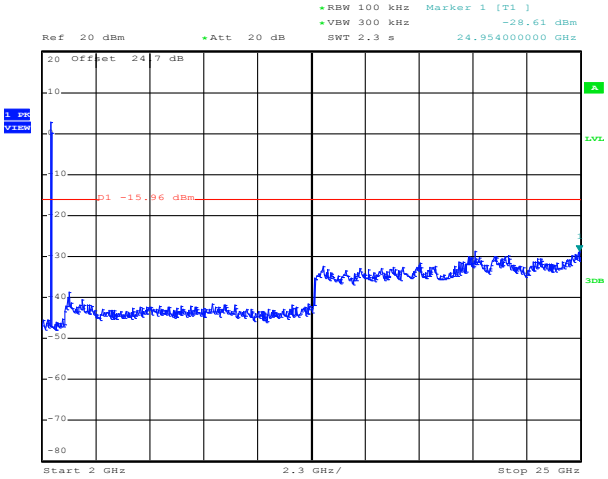
Conducted Spurious Emission Plot on Channel 01



Date: 20.MAR.2013 20:19:11

802.11b 2 GHz~25 GHz

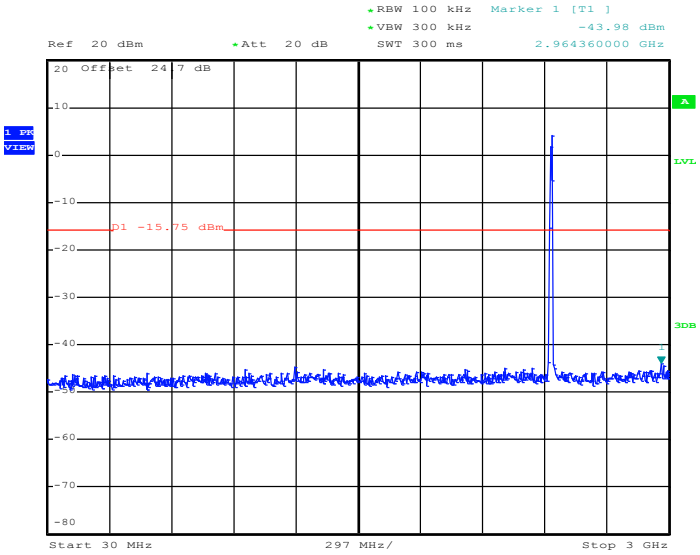
Conducted Spurious Emission Plot on Channel 01



Date: 20.MAR.2013 20:19:30

802.11b 30 MHz~3 GHz

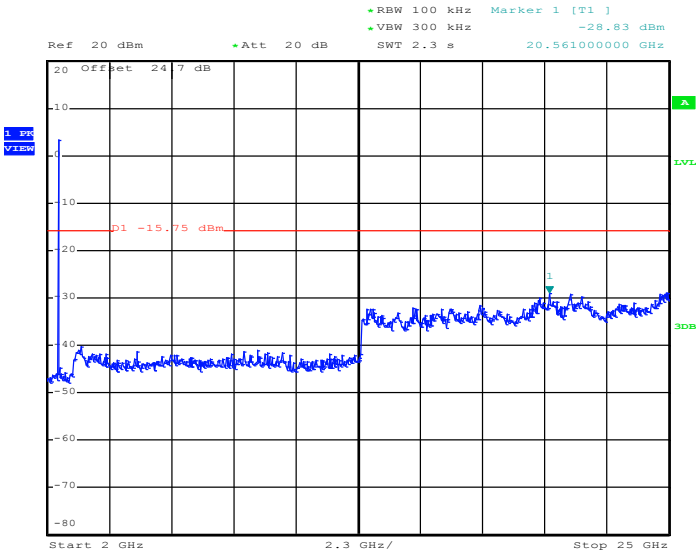
Conducted Spurious Emission Plot on Channel 06



Date: 20.MAR.2013 20:01:22

802.11b 2 GHz~25 GHz

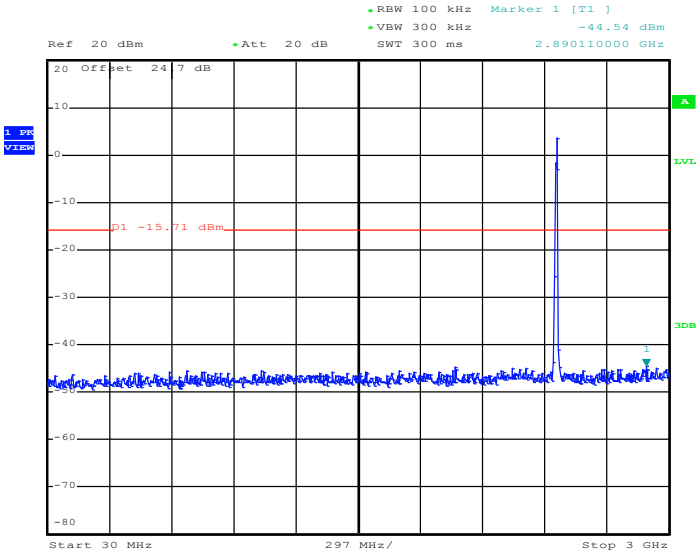
Conducted Spurious Emission Plot on Channel 06



Date: 20.MAR.2013 20:01:40

802.11b 30 MHz~3 GHz

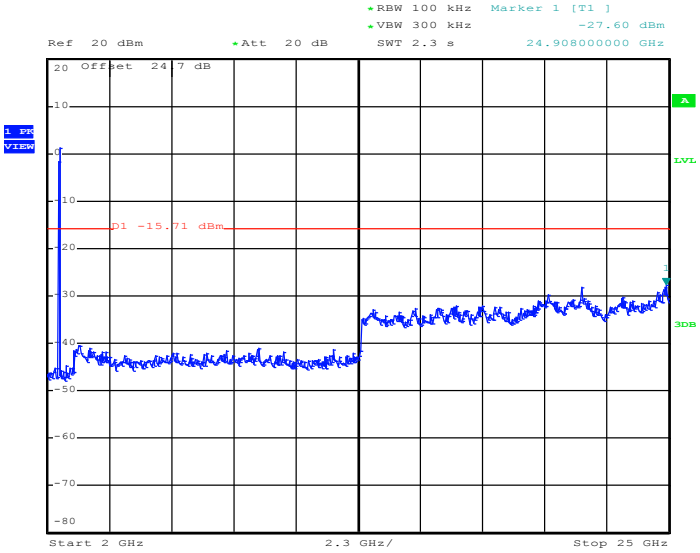
Conducted Spurious Emission Plot on Channel 11



Date: 20.MAR.2013 20:25:43

802.11b 2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 11

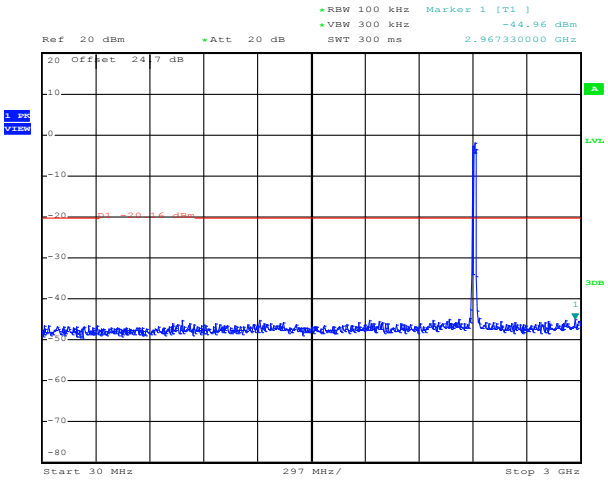


Date: 20.MAR.2013 20:26:01

Test Mode :	802.11g	Temperature :	24~26℃
Test Band :	30MHz-3GHz and 2G-25GHz	Relative Humidity :	50~53%
Test Channel :	01, 06, 11	Test Engineer :	Reece Lee

802.11g 30 MHz~3 GHz

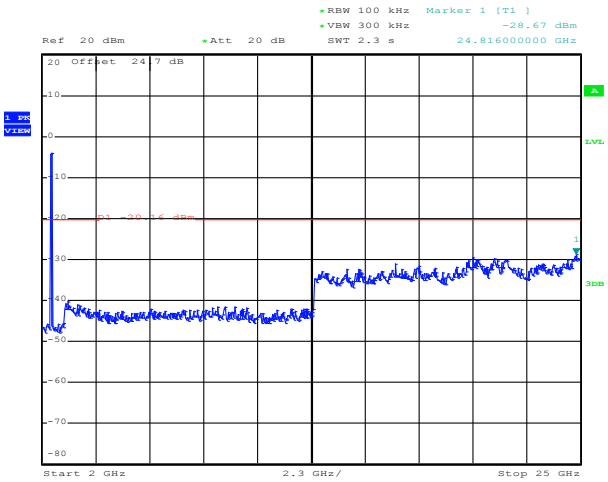
Conducted Spurious Emission Plot on Channel 01



Date: 20.MAR.2013 20:39:11

802.11g 2 GHz~25 GHz

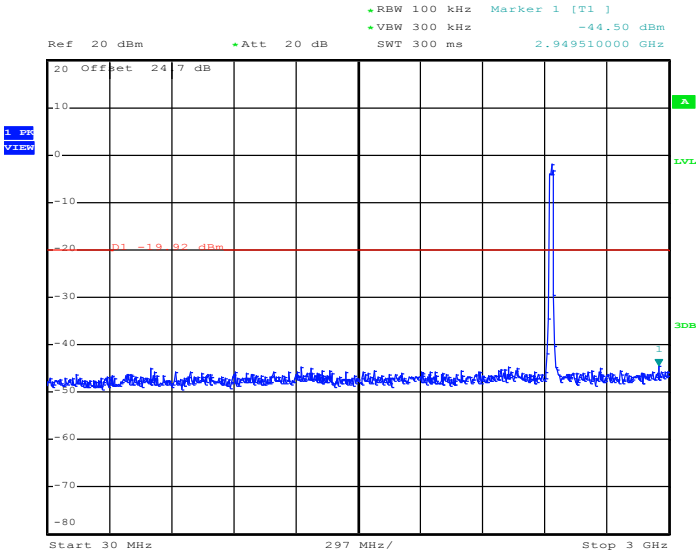
Conducted Spurious Emission Plot on Channel 01



Date: 20.MAR.2013 20:39:30

802.11g 30 MHz~3 GHz

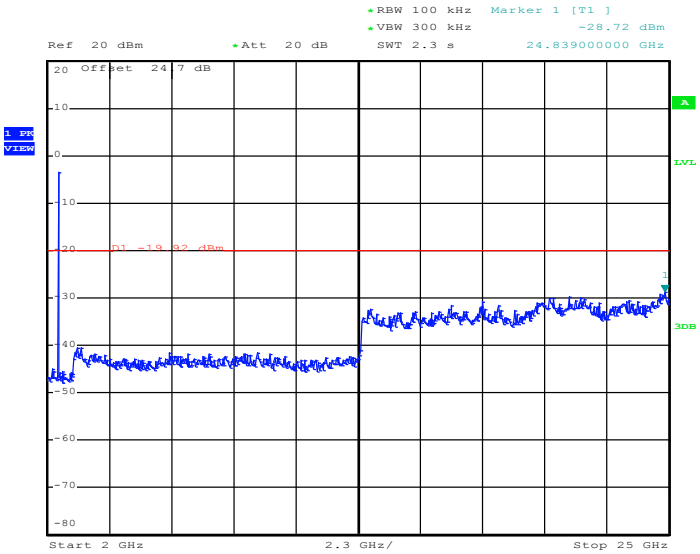
Conducted Spurious Emission Plot on Channel 06



Date: 20.MAR.2013 20:43:59

802.11g 2 GHz~25 GHz

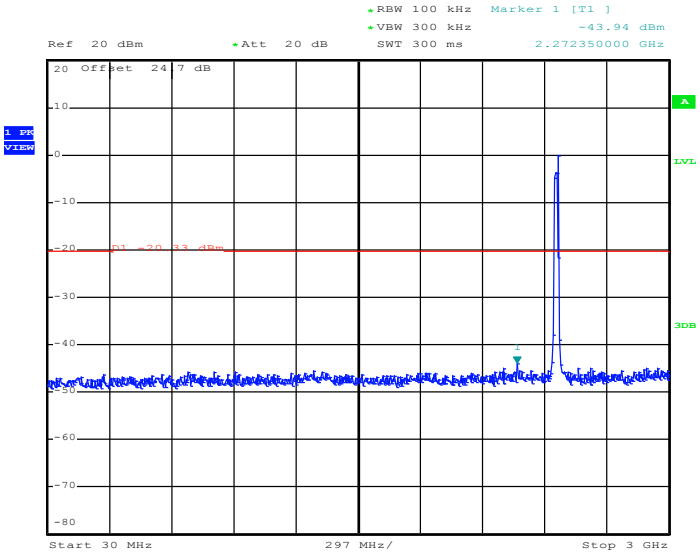
Conducted Spurious Emission Plot on Channel 06



Date: 20.MAR.2013 20:44:18

802.11g 30 MHz~3 GHz

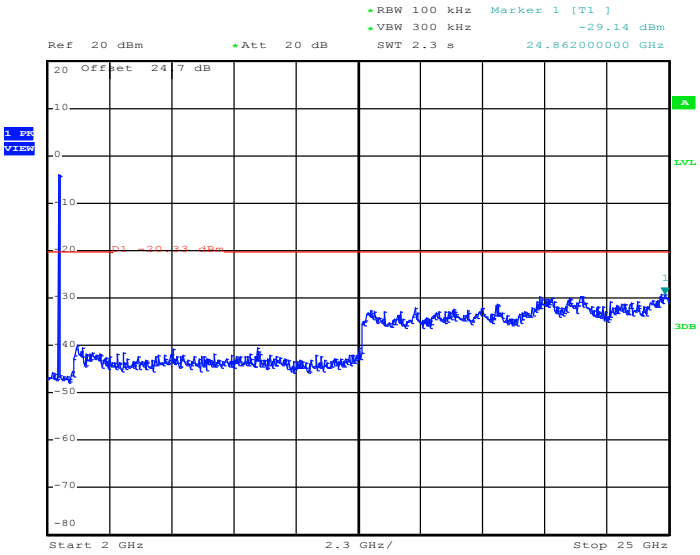
Conducted Spurious Emission Plot on Channel 11



Date: 20.MAR.2013 21:58:09

802.11g 2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 11

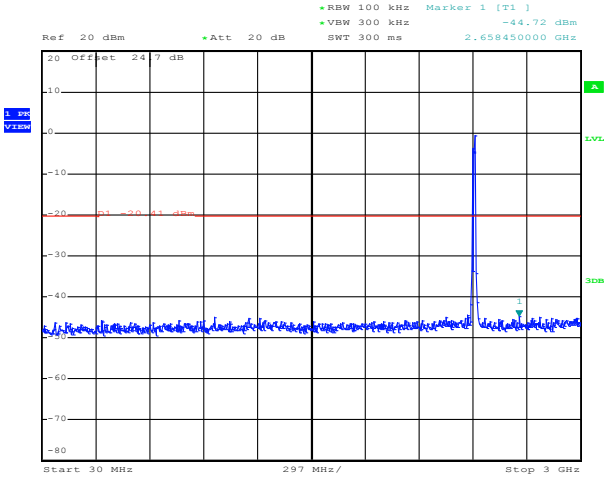


Date: 20.MAR.2013 21:58:27

Test Mode :	802.11n HT20	Temperature :	24~26℃
Test Band :	30MHz-3GHz and 2G-25GHz	Relative Humidity :	50~53%
Test Channel :	01, 06, 11	Test Engineer :	Reece Lee

2.4GHz 802.11n HT20 30 MHz~3 GHz

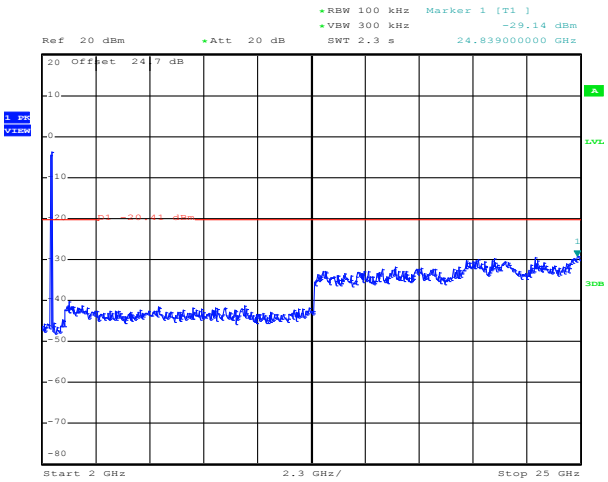
Conducted Spurious Emission Plot on Channel 01



Date: 20.MAR.2013 22:07:09

2.4GHz 802.11n HT20 2 GHz~25 GHz

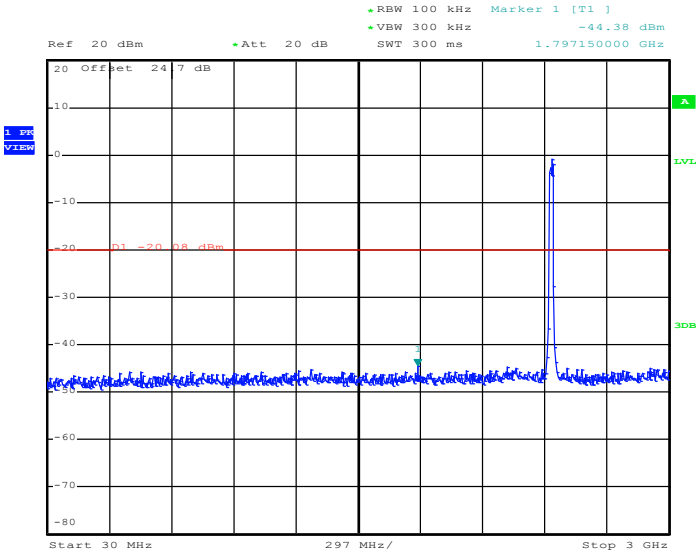
Conducted Spurious Emission Plot on Channel 01



Date: 20.MAR.2013 22:07:28

2.4GHz 802.11n HT20 30 MHz~3 GHz

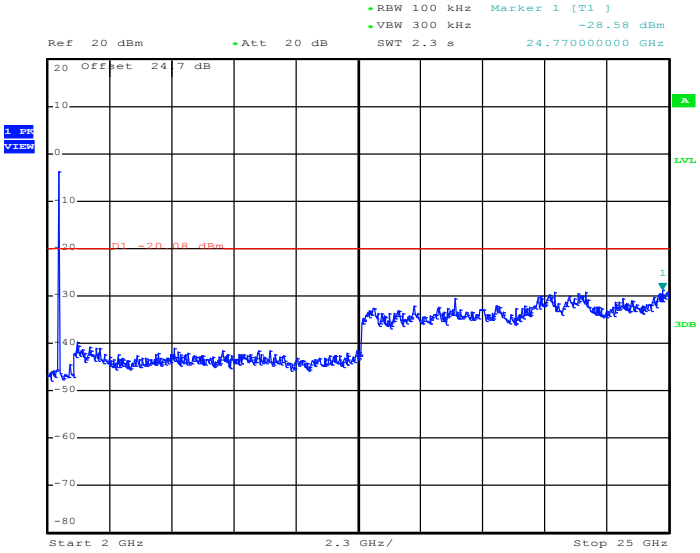
Conducted Spurious Emission Plot on Channel 06



Date: 20.MAR.2013 22:10:43

2.4GHz 802.11n HT20 2 GHz~25 GHz

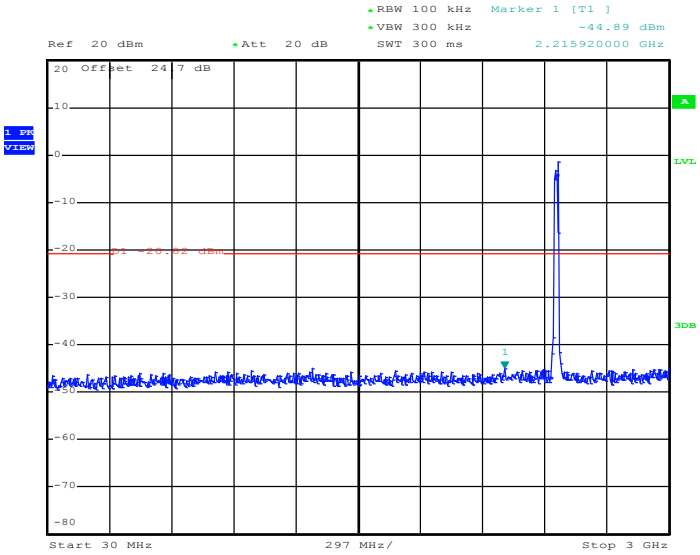
Conducted Spurious Emission Plot on Channel 06



Date: 20.MAR.2013 22:11:01

2.4GHz 802.11n HT20 30 MHz~3 GHz

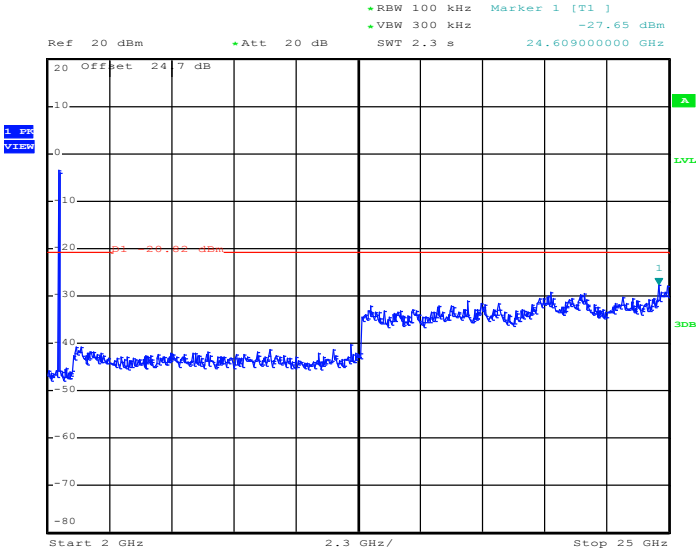
Conducted Spurious Emission Plot on Channel 11



Date: 20.MAR.2013 22:26:08

2.4GHz 802.11n HT20 2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 11

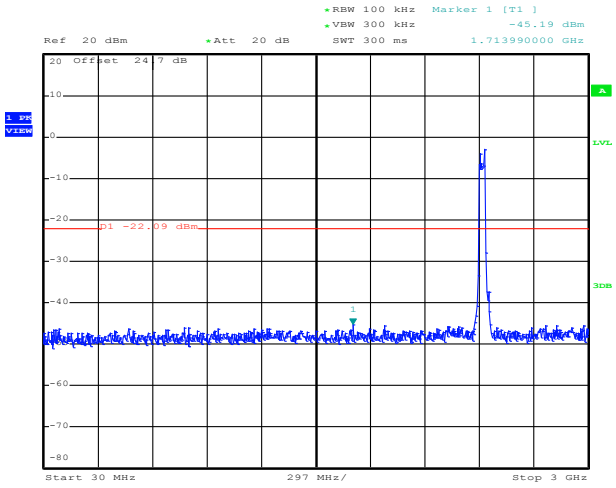


Date: 20.MAR.2013 22:26:27

Test Mode :	802.11n HT40	Temperature :	24~26℃
Test Band :	30MHz-3GHz and 2G-25GHz	Relative Humidity :	50~53%
Test Channel :	03, 06, 09	Test Engineer :	Reece Lee

2.4GHz 802.11n HT40 30 MHz~3 GHz

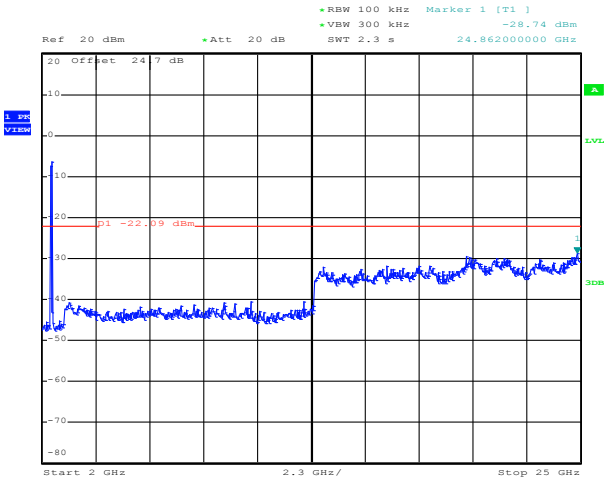
Conducted Spurious Emission Plot on Channel 03



Date: 20.MAR.2013 22:41:51

2.4GHz 802.11n HT40 2 GHz~25 GHz

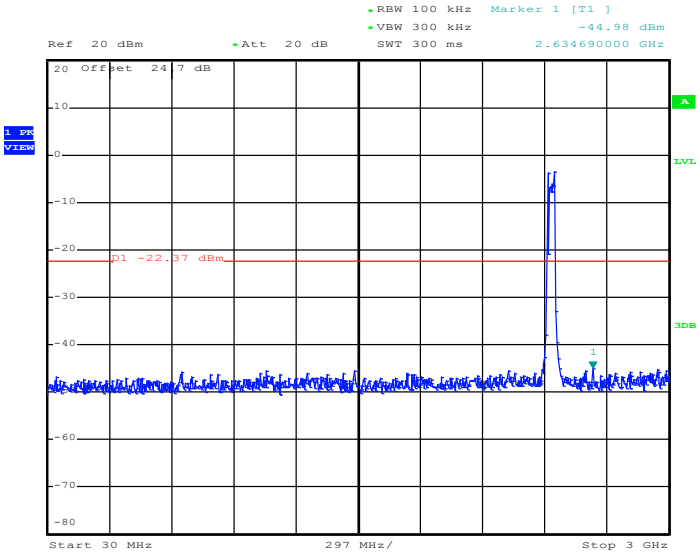
Conducted Spurious Emission Plot on Channel 03



Date: 20.MAR.2013 22:40:24

2.4GHz 802.11n HT40 30 MHz~3 GHz

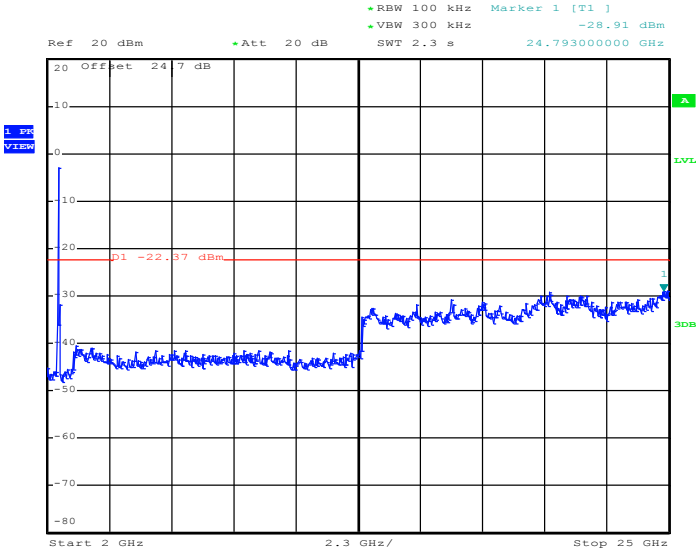
Conducted Spurious Emission Plot on Channel 06



Date: 20.MAR.2013 22:48:27

2.4GHz 802.11n HT40 2 GHz~25 GHz

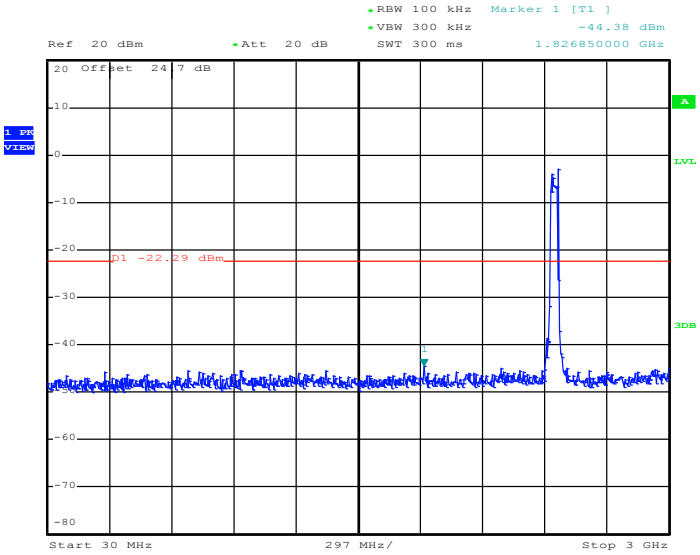
Conducted Spurious Emission Plot on Channel 06



Date: 20.MAR.2013 22:47:33

2.4GHz 802.11n HT40 30 MHz~3 GHz

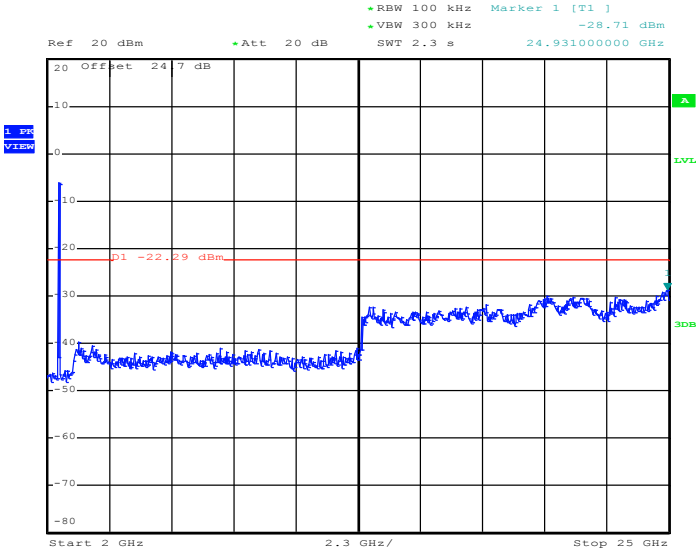
Conducted Spurious Emission Plot on Channel 09



Date: 20.MAR.2013 22:58:59

2.4GHz 802.11n HT40 2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 09

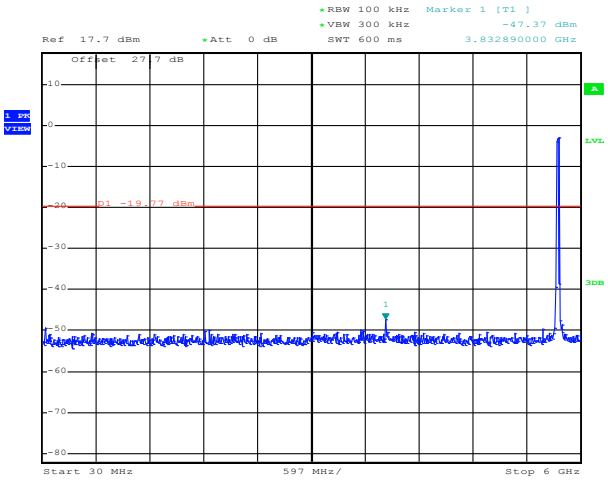


Date: 20.MAR.2013 22:58:13

Test Mode :	802.11a	Temperature :	24~26℃
Test Band :	30MHz-6GHz and 5G-40GHz	Relative Humidity :	50~53%
Test Channel :	149, 157, 165	Test Engineer :	Reece Lee

802.11a 30 MHz~6 GHz

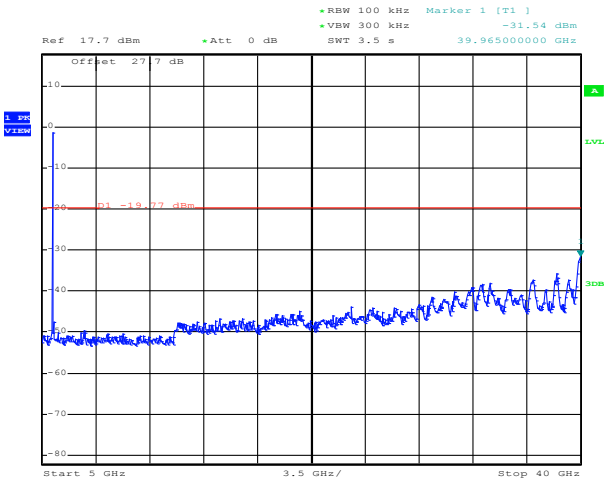
Conducted Spurious Emission Plot on Channel 149



Date: 20.MAR.2013 23:12:58

802.11a 5 GHz~40 GHz

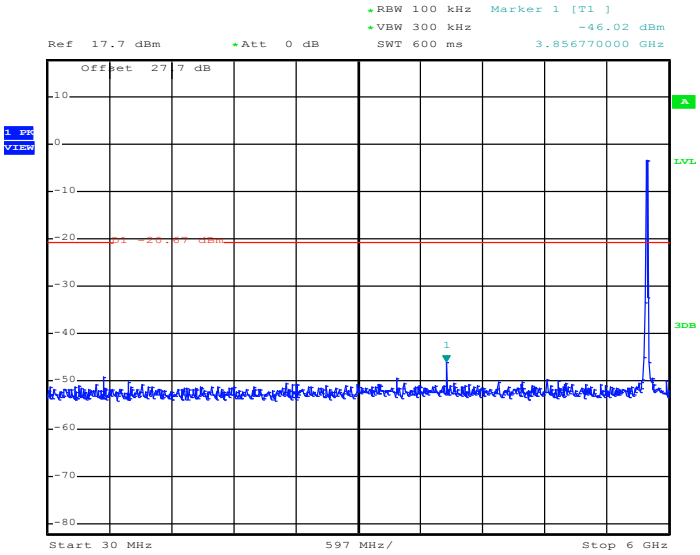
Conducted Spurious Emission Plot on Channel 149



Date: 20.MAR.2013 23:13:17

802.11a 30 MHz~6 GHz

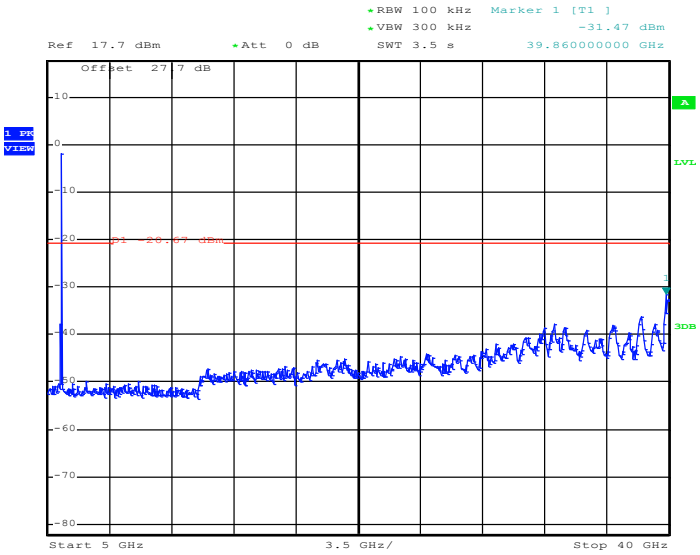
Conducted Spurious Emission Plot on Channel 157



Date: 20.MAR.2013 23:18:14

802.11a 5 GHz~40 GHz

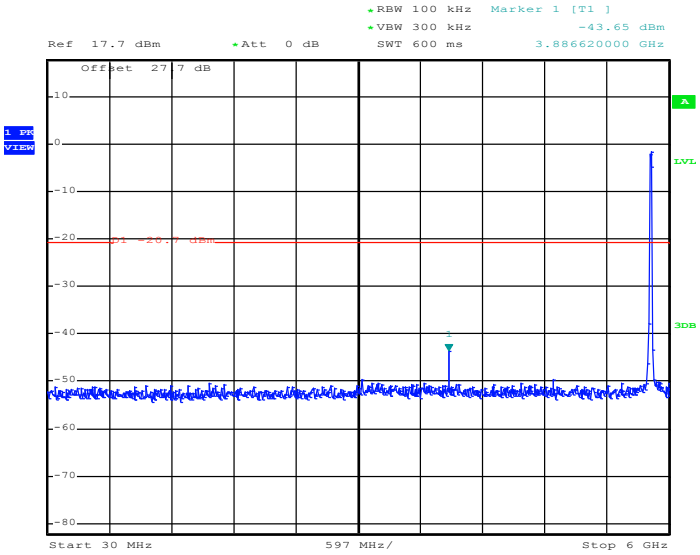
Conducted Spurious Emission Plot on Channel 157



Date: 20.MAR.2013 23:18:33

802.11a 30 MHz~6 GHz

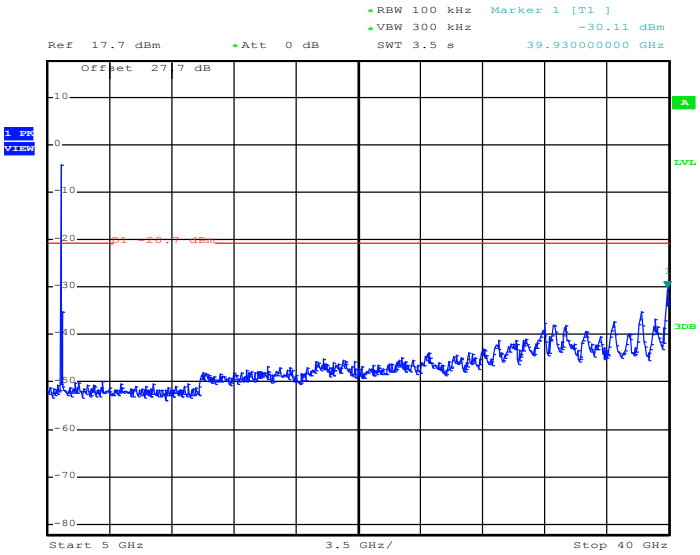
Conducted Spurious Emission Plot on Channel 165



Date: 20.MAR.2013 23:22:35

802.11a 5 GHz~40 GHz

Conducted Spurious Emission Plot on Channel 165

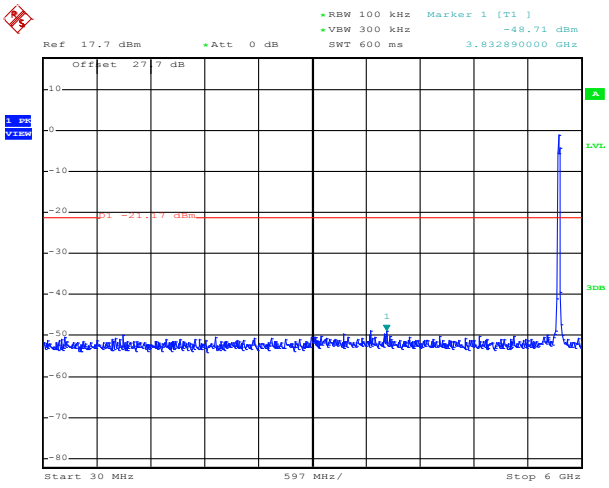


Date: 20.MAR.2013 23:22:53

Test Mode :	802.11n HT20	Temperature :	24~26℃
Test Band :	30MHz-6GHz and 5G-40GHz	Relative Humidity :	50~53%
Test Channel :	149, 157, 165	Test Engineer :	Reece Lee

5GHz 802.11n HT20 30 MHz~6 GHz

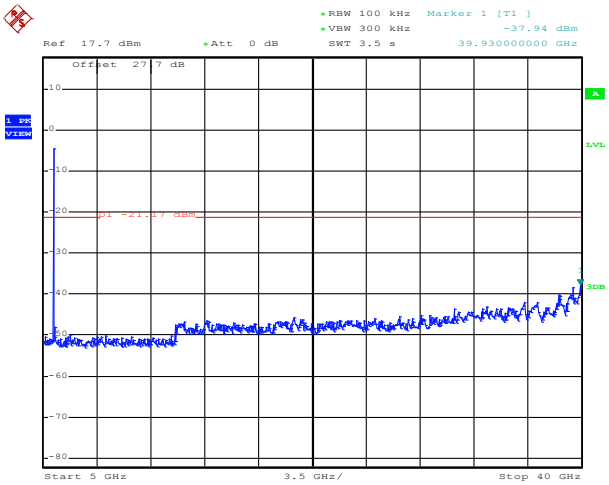
Conducted Spurious Emission Plot on Channel 149



Date: 22.MAR.2013 23:53:14

5GHz 802.11n HT20 5 GHz~40 GHz

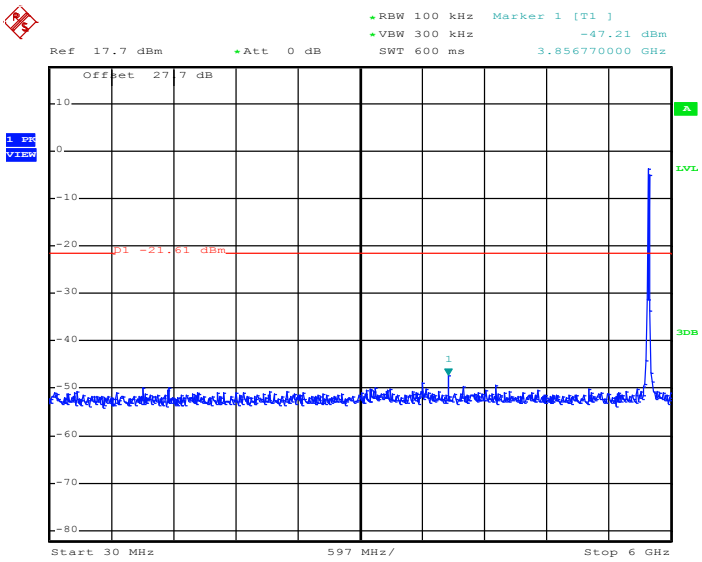
Conducted Spurious Emission Plot on Channel 149



Date: 22.MAR.2013 23:53:33

5GHz 802.11n HT20 30 MHz~6 GHz

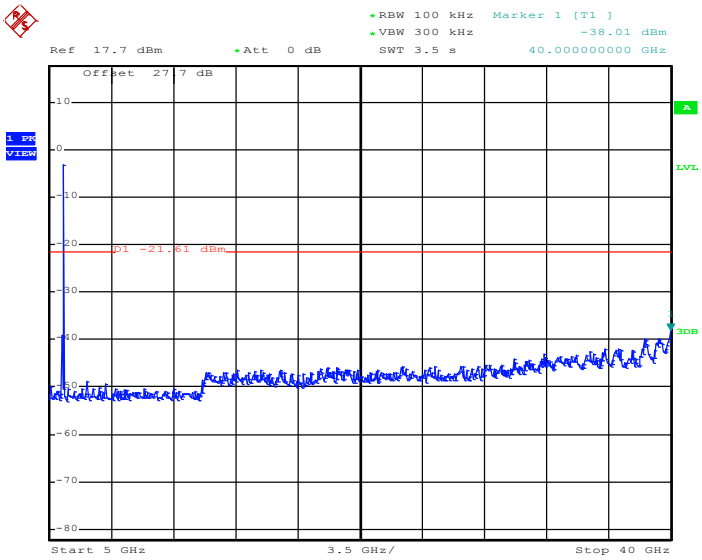
Conducted Spurious Emission Plot on Channel 157



Date: 22.MAR.2013 23:57:29

5GHz 802.11n HT20 5 GHz~40 GHz

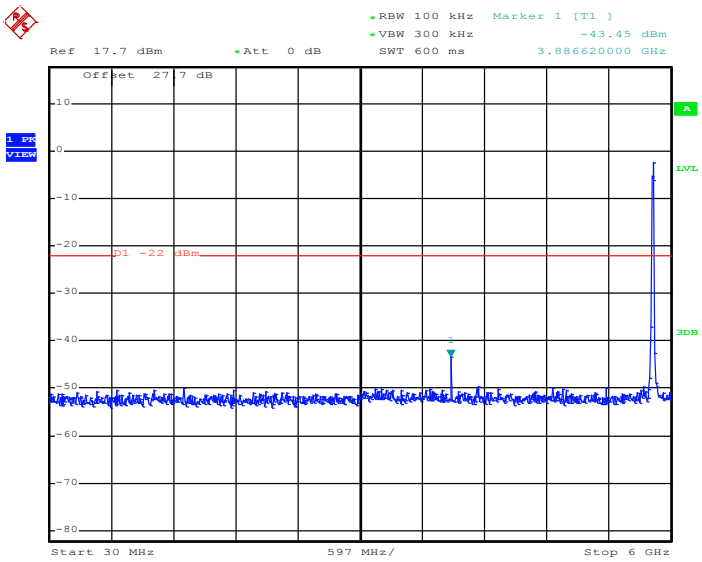
Conducted Spurious Emission Plot on Channel 157



Date: 22.MAR.2013 23:57:47

5GHz 802.11n HT20 30 MHz~6 GHz

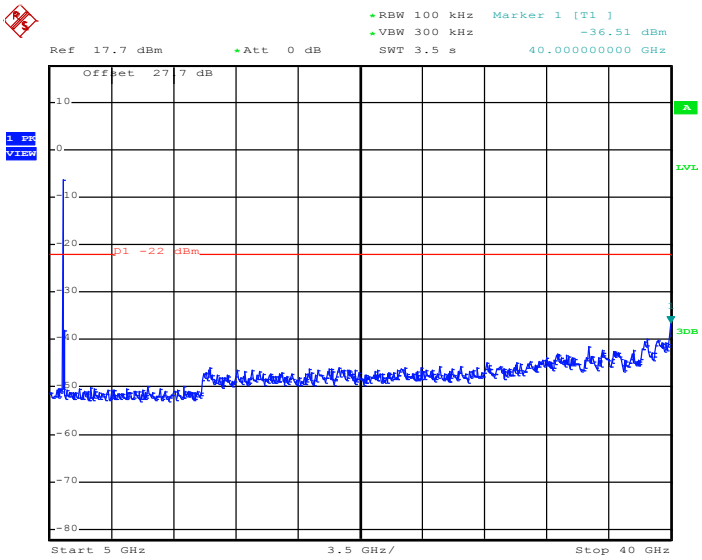
Conducted Spurious Emission Plot on Channel 165



Date: 23.MAR.2013 00:00:48

5GHz 802.11n HT20 5 GHz~40 GHz

Conducted Spurious Emission Plot on Channel 165

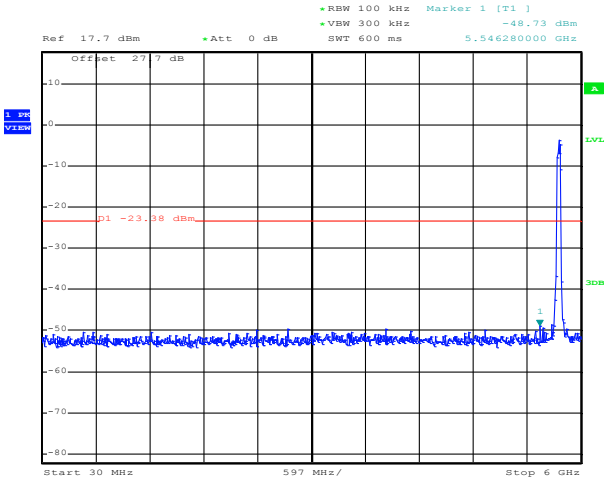


Date: 23.MAR.2013 00:01:07

Test Mode :	802.11n HT40	Temperature :	24~26℃
Test Band :	30MHz-6GHz and 5G-40GHz	Relative Humidity :	50~53%
Test Channel :	151 and 159	Test Engineer :	Reece Lee

5GHz 802.11n HT40 30 MHz~6 GHz

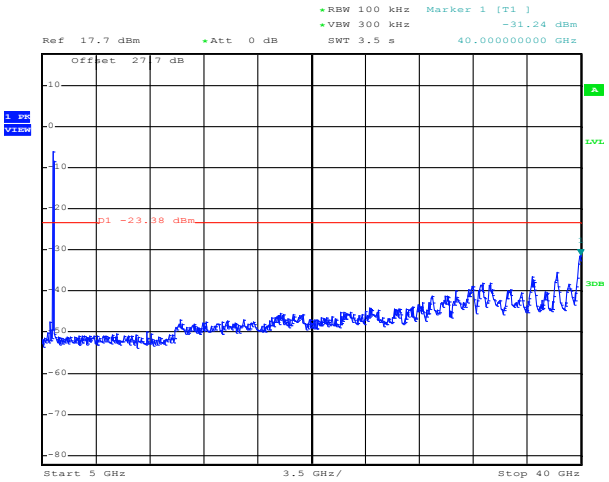
Conducted Spurious Emission Plot on Channel 151



Date: 21.MAR.2013 00:03:39

5GHz 802.11n HT40 5 GHz~40 GHz

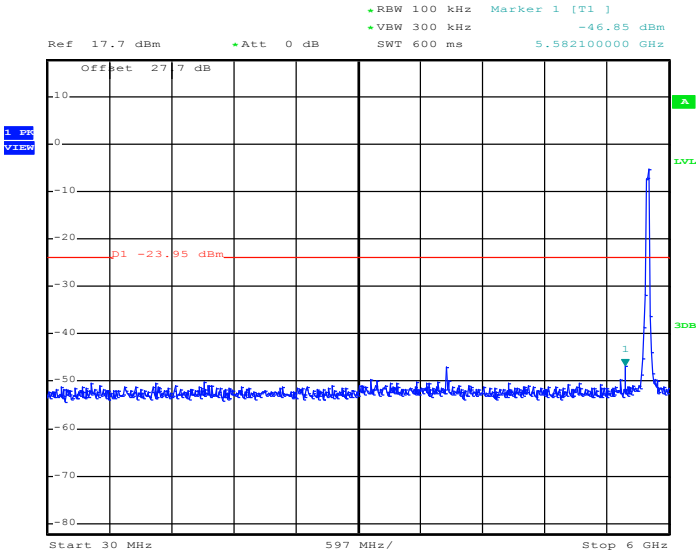
Conducted Spurious Emission Plot on Channel 151



Date: 21.MAR.2013 00:03:57

5GHz 802.11n HT40 30 MHz~6 GHz

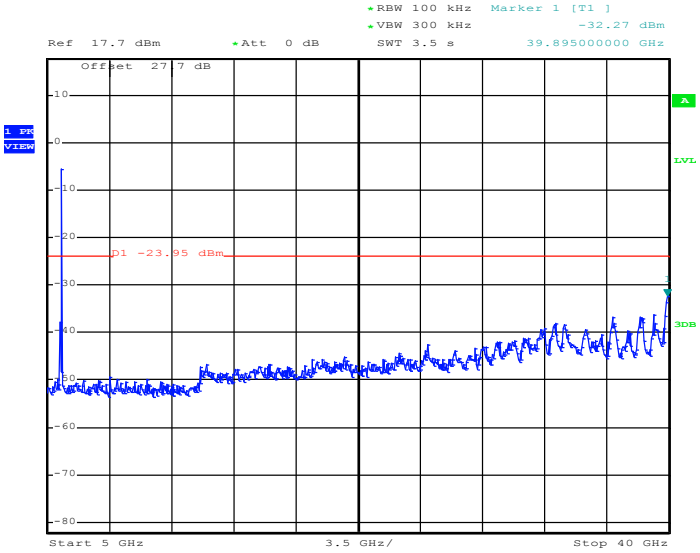
Conducted Spurious Emission Plot on Channel 159



Date: 21.MAR.2013 00:07:10

5GHz 802.11n HT40 5GHz~40 GHz

Conducted Spurious Emission Plot on Channel 159



Date: 21.MAR.2013 00:07:28

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

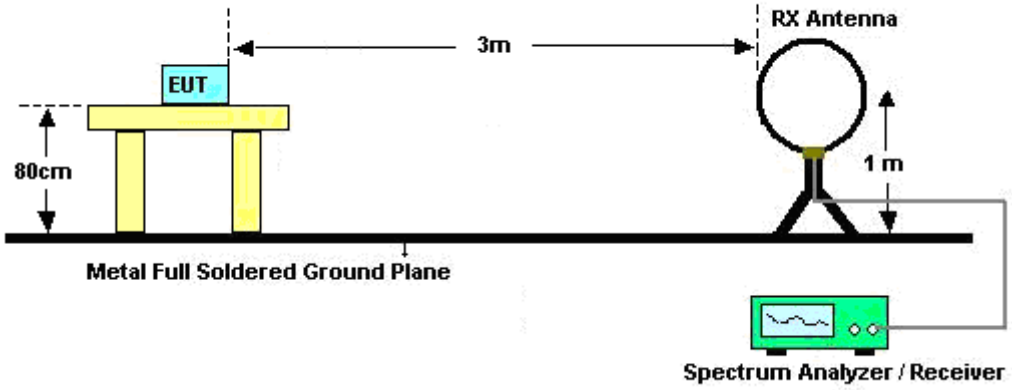
1. The testing follows the guidelines in ANSI C63.10-2009.
2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better 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	97.49	12440.000	0.080	100Hz
802.11g	86.44	2040.000	0.490	1kHz
2.4GHz 802.11n HT20	86.10	1920.000	0.521	1kHz
2.4GHz 802.11n HT40	75.96	948.000	1.055	3kHz
802.11a	86.55	2060.000	0.485	1kHz
5GHz 802.11n HT20	86.49	1920.000	0.521	1kHz
5GHz 802.11n HT40	75.96	948.000	1.055	3kHz

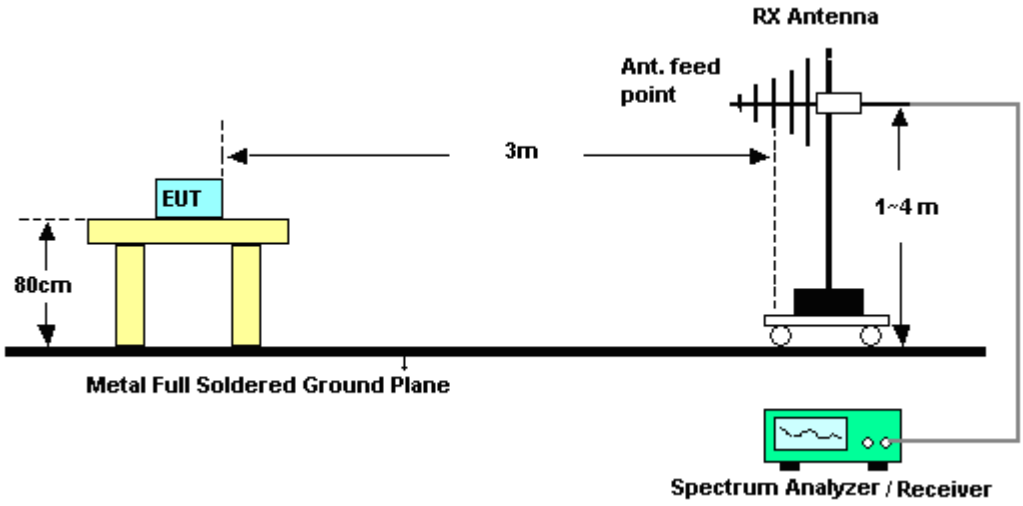
Note: For average measurement with duty cycle < 98%, use reduced VBW measurement method 4.2.3.2.3 in ANSI C63.10.

3.5.4 Test Setup

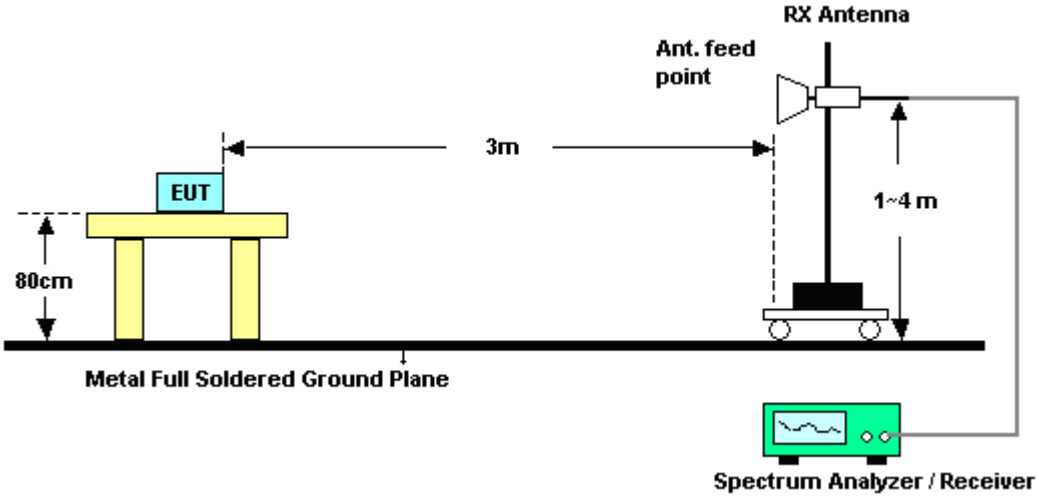
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



3.5.5 Test Results of Radiated 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 Band Edges

Test Mode :	802.11b	**Temperature :**	21~23°C
Test Band :	Low	**Relative Humidity :**	51~53%
Test Channel :	01	**Test Engineer :**	Kyle Jhuang

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**
2388.03	54.95	-19.05	74	50.01	32.3	6.91	34.27	102	46	Peak
2389.92	41.87	-12.13	54	36.96	32.3	6.91	34.3	102	46	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	51.75	-22.25	74	46.84	32.3	6.91	34.3	169	269	Peak
2389.74	39.15	-14.85	54	34.21	32.3	6.91	34.27	169	269	Average

Test Mode :	802.11b	**Temperature :**	21~23°C
Test Band :	High	**Relative Humidity :**	51~53%
Test Channel :	11	**Test Engineer :**	Kyle Jhuang

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**
2489.62	56.98	-17.02	74	51.95	32.4	7.06	34.43	102	300	Peak
2485.51	42.34	-11.66	54	37.33	32.38	7.06	34.43	102	300	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	50.99	-23.01	74	45.98	32.38	7.06	34.43	196	281	Peak
2483.59	37.94	-16.06	54	32.93	32.38	7.06	34.43	196	281	Average

Test Mode :	802.11g	Temperature :	21~23°C
Test Band :	Low	Relative Humidity :	51~53%
Test Channel :	01	Test Engineer :	Kyle Jhuang

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2390	65.47	-8.53	74	60.56	32.3	6.91	34.3	103	48	Peak
2390	49.13	-4.87	54	44.22	32.3	6.91	34.3	103	48	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
2388.57	58.37	-15.63	74	53.43	32.3	6.91	34.27	104	89	Peak
2390	42.44	-11.56	54	37.53	32.3	6.91	34.3	104	89	Average

Test Mode :	802.11g	Temperature :	21~23°C
Test Band :	High	Relative Humidity :	51~53%
Test Channel :	11	Test Engineer :	Kyle Jhuang

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
2484.22	69.24	-4.76	74	64.23	32.38	7.06	34.43	154	47	Peak
2483.5	50.4	-3.6	54	45.39	32.38	7.06	34.43	154	47	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
2483.92	60.92	-13.08	74	55.91	32.38	7.06	34.43	162	263	Peak
2483.5	44.41	-9.59	54	39.4	32.38	7.06	34.43	162	263	Average

Test Mode :	802.11n HT20	Temperature :	21~23°C
Test Band :	Low	Relative Humidity :	51~53%
Test Channel :	01	Test Engineer :	Kyle Jhuang

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
2388.66	67.66	-6.34	74	62.72	32.3	6.91	34.27	102	44	Peak
2389.92	50.59	-3.41	54	45.68	32.3	6.91	34.3	102	44	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
2388.84	61.72	-12.28	74	56.78	32.3	6.91	34.27	165	264	Peak
2390	45.36	-8.64	54	40.45	32.3	6.91	34.3	165	264	Average

Test Mode :	802.11n HT20	Temperature :	21~23°C
Test Band :	High	Relative Humidity :	51~53%
Test Channel :	11	Test Engineer :	Kyle Jhuang

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	69.63	-4.37	74	64.62	32.38	7.06	34.43	156	43	Peak
2483.53	52.04	-1.96	54	47.03	32.38	7.06	34.43	156	43	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
2483.56	64.83	-9.17	74	59.82	32.38	7.06	34.43	195	270	Peak
2483.62	46.47	-7.53	54	41.46	32.38	7.06	34.43	195	270	Average

Test Mode :	802.11n HT40	Temperature :	21~23°C
Test Band :	Low	Relative Humidity :	51~53%
Test Channel :	03	Test Engineer :	Kyle Jhuang

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
2387.49	67.31	-6.69	74	62.37	32.3	6.91	34.27	106	299	Peak
2390	52.9	-1.1	54	47.99	32.3	6.91	34.3	106	299	Average
2487.61	61.02	-12.98	74	55.99	32.4	7.06	34.43	106	299	Peak
2483.77	42.51	-11.49	54	37.5	32.38	7.06	34.43	106	299	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2389.38	62.87	-11.13	74	57.93	32.3	6.91	34.27	137	264	Peak
2389.38	47.41	-6.59	54	42.47	32.3	6.91	34.27	137	264	Average
2497.9	52.58	-21.42	74	47.6	32.4	7.06	34.48	137	264	Peak
2484.46	36.79	-17.21	54	31.78	32.38	7.06	34.43	137	264	Average

Test Mode :	802.11n HT40	Temperature :	21~23°C
Test Band :	High	Relative Humidity :	51~53%
Test Channel :	09	Test Engineer :	Kyle Jhuang

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
2389.65	57.43	-16.57	74	52.49	32.3	6.91	34.27	101	40	Peak
2388.93	42.56	-11.44	54	37.62	32.3	6.91	34.27	101	40	Average
2483.5	70.25	-3.75	74	65.24	32.38	7.06	34.43	101	40	Peak
2483.53	52.77	-1.23	54	47.76	32.38	7.06	34.43	101	40	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
2380.2	48.08	-25.92	74	43.16	32.28	6.91	34.27	160	263	Peak
2385.87	36.17	-17.83	54	31.23	32.3	6.91	34.27	160	263	Average
2483.56	63.89	-10.11	74	58.88	32.38	7.06	34.43	160	263	Peak
2483.74	46.68	-7.32	54	41.67	32.38	7.06	34.43	160	263	Average

Test Mode :	802.11a	Temperature :	21~23°C
Test Band :	Low	Relative Humidity :	51~53%
Test Channel :	149	Test Engineer :	Kyle Jhuang

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
5725	72.31	-15.87	88.18	61.09	35.33	10.04	34.15	161	29	Peak
5747	98.08	-	-	86.85	35.34	10.06	34.17	161	29	Average
5747	108.18	-	-	96.95	35.34	10.06	34.17	161	29	Peak

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
5725	61.04	-19.78	80.82	49.82	35.33	10.04	34.15	159	257	Peak
5748	90.69	-	-	79.46	35.34	10.06	34.17	159	257	Average
5748	100.82	-	-	89.59	35.34	10.06	34.17	159	257	Peak

Test Mode :	802.11a	Temperature :	21~23°C
Test Band :	High	Relative Humidity :	51~53%
Test Channel :	165	Test Engineer :	Kyle Jhuang

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
5824	96.35	-	-	85.11	35.4	10.11	34.27	101	44	Average
5824	108.44	-	-	97.2	35.4	10.11	34.27	101	44	Peak
5850	67.77	-20.67	88.44	56.54	35.41	10.13	34.31	101	44	Peak

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
5824	88.87	-	-	77.63	35.4	10.11	34.27	149	335	Average
5824	99.33	-	-	88.09	35.4	10.11	34.27	149	335	Peak
5850	58.65	-20.68	79.33	47.42	35.41	10.13	34.31	149	335	Peak

Test Mode :	802.11n HT20	Temperature :	21~23°C
Test Band :	Low	Relative Humidity :	51~53%
Test Channel :	149	Test Engineer :	Kyle Jhuang

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
5725	72.13	-14.67	86.8	60.91	35.33	10.04	34.15	189	32	Peak
5742	84.04	-	-	72.81	35.34	10.06	34.17	189	32	Average
5742	106.8	-	-	95.57	35.34	10.06	34.17	189	32	Peak

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
5725	64.61	-14.59	79.2	53.39	35.33	10.04	34.15	104	122	Peak
5747	90.34	-	-	79.11	35.34	10.06	34.17	104	122	Average
5747	99.2	-	-	87.97	35.34	10.06	34.17	104	122	Peak

Test Mode :	802.11n HT20	Temperature :	21~23°C
Test Band :	High	Relative Humidity :	51~53%
Test Channel :	165	Test Engineer :	Kyle Jhuang

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
5823	97.91	-	-	86.67	35.4	10.11	34.27	158	21	Average
5823	107.54	-	-	96.3	35.4	10.11	34.27	158	21	Peak
5850	66.81	-20.73	87.54	55.58	35.41	10.13	34.31	158	21	Peak

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
5822	91.79	-	-	80.55	35.4	10.11	34.27	170	123	Average
5822	101.56	-	-	90.32	35.4	10.11	34.27	170	123	Peak
5850	60.75	-20.81	81.56	49.52	35.41	10.13	34.31	170	123	Peak

Test Mode :	802.11n HT40	Temperature :	21~23°C
Test Band :	Low	Relative Humidity :	51~53%
Test Channel :	151	Test Engineer :	Kyle Jhuang

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
5725	72.18	-11.11	83.29	60.96	35.33	10.04	34.15	174	21	Peak
5757	93.52	-	-	82.3	35.36	10.06	34.2	174	21	Average
5757	103.29	-	-	92.07	35.36	10.06	34.2	174	21	Peak
5850	54.64	-28.65	83.29	43.41	35.41	10.13	34.31	174	21	Peak

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
5725	66.3	-10.82	77.12	55.08	35.33	10.04	34.15	174	126	Peak
5757	87.16	-	-	75.94	35.36	10.06	34.2	174	126	Average
5757	97.12	-	-	85.9	35.36	10.06	34.2	174	126	Peak
5850	50.7	-26.42	77.12	39.47	35.41	10.13	34.31	174	126	Peak

Test Mode :	802.11n HT40	Temperature :	21~23°C
Test Band :	High	Relative Humidity :	51~53%
Test Channel :	159	Test Engineer :	Kyle Jhuang

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
5725	56.11	-28.18	84.29	44.89	35.33	10.04	34.15	172	20	Peak
5797	93.21	-	-	81.97	35.38	10.09	34.23	172	20	Average
5797	104.29	-	-	93.05	35.38	10.09	34.23	172	20	Peak
5850	61.72	-22.57	84.29	50.49	35.41	10.13	34.31	172	20	Peak

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
5725	52.63	-24.17	76.8	41.41	35.33	10.04	34.15	171	124	Peak
5793	86.96	-	-	75.72	35.38	10.09	34.23	171	124	Average
5793	96.8	-	-	85.56	35.38	10.09	34.23	171	124	Peak
5850	56.16	-20.64	76.8	44.93	35.41	10.13	34.31	171	124	Peak

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

Test Mode :	802.11b	Temperature :	21~23°C
Test Channel :	01	Relative Humidity :	51~53%
Test Engineer :	Kyle Jhuang	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 dBμV/m - 20dB = 88 dBμV/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
2413	103.55	-	-	98.59	32.31	6.95	34.3	102	46	Average
2413	108	-	-	103.04	32.31	6.95	34.3	102	46	Peak
4824	41.55	-32.45	74	56.28	33.97	8.77	57.47	100	0	Peak
7236	40.94	-47.06	88	52.54	35.55	10.83	57.98	100	0	Peak

Test Mode :	802.11b	Temperature :	21~23°C
Test Channel :	01	Relative Humidity :	51~53%
Test Engineer :	Kyle Jhuang	Polarization :	Vertical
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. 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
2413	98.54	-	-	93.58	32.31	6.95	34.3	169	269	Average
2413	103.02	-	-	98.06	32.31	6.95	34.3	169	269	Peak
4824	41.66	-32.34	74	56.39	33.97	8.77	57.47	100	0	Peak
7236	41.81	-41.21	83.02	53.41	35.55	10.83	57.98	100	0	Peak

Test Mode :	802.11b	Temperature :	21~23°C
Test Channel :	06	Relative Humidity :	51~53%
Test Engineer :	Kyle Jhuang	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	104.8	-	-	99.83	32.33	6.99	34.35	106	300	Average
2436	109.01	-	-	104.04	32.33	6.99	34.35	106	300	Peak
4875	40.84	-33.16	74	55.55	33.95	8.82	57.48	100	0	Peak
7311	42.04	-31.96	74	53.61	35.54	10.91	58.02	100	0	Peak

Test Mode :	802.11b	Temperature :	21~23°C
Test Channel :	06	Relative Humidity :	51~53%
Test Engineer :	Kyle Jhuang	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	98.82	-	-	93.83	32.35	6.99	34.35	199	281	Average
2438	102.94	-	-	97.95	32.35	6.99	34.35	199	281	Peak
4875	41.53	-32.47	74	56.24	33.95	8.82	57.48	100	0	Peak
7311	42.03	-31.97	74	53.6	35.54	10.91	58.02	100	0	Peak

Test Mode :	802.11b	Temperature :	21~23°C
Test Channel :	11	Relative Humidity :	51~53%
Test Engineer :	Kyle Jhuang	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
62.13	22.59	-17.41	40	47.45	6.14	0.78	31.78	-	-	Peak
136.38	25.39	-18.11	43.5	44.24	11.46	1.19	31.5	-	-	Peak
257.88	32.72	-13.28	46	49.67	12.71	1.58	31.24	100	13	Peak
365.8	31.63	-14.37	46	45.86	15.08	2.07	31.38	-	-	Peak
447	30.89	-15.11	46	42.75	16.99	2.29	31.14	-	-	Peak
673.1	23.6	-22.4	46	30.74	20.38	2.89	30.41	-	-	Peak
2463	103.12	-	-	98.12	32.37	7.02	34.39	102	300	Average
2463	107.35	-	-	102.35	32.37	7.02	34.39	102	300	Peak
4923	42.17	-31.83	74	56.85	33.93	8.87	57.48	100	0	Peak
7386	41.99	-32.01	74	53.56	35.52	10.99	58.08	100	0	Peak

Test Mode :	802.11b	Temperature :	21~23°C
Test Channel :	11	Relative Humidity :	51~53%
Test Engineer :	Kyle Jhuang	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
49.17	30.63	-9.37	40	53.07	8.5	0.69	31.63	100	152	Peak
93.72	24.1	-19.4	43.5	45.72	9.08	0.97	31.67	-	-	Peak
257.88	25.91	-20.09	46	42.86	12.71	1.58	31.24	-	-	Peak
365.8	26.03	-19.97	46	40.26	15.08	2.07	31.38	-	-	Peak
407.8	24.91	-21.09	46	37.99	16.16	2.17	31.41	-	-	Peak
566	24.96	-21.04	46	34.17	19.22	2.6	31.03	-	-	Peak
2462	98.65	-	-	93.65	32.37	7.02	34.39	196	281	Average
2462	102.77	-	-	97.77	32.37	7.02	34.39	196	281	Peak
4923	40.94	-33.06	74	55.62	33.93	8.87	57.48	100	0	Peak
7386	41.9	-32.1	74	53.47	35.52	10.99	58.08	100	0	Peak

Test Mode :	802.11g	Temperature :	21~23°C
Test Channel :	01	Relative Humidity :	51~53%
Test Engineer :	Kyle Jhuang	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 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
2413	98.82	-	-	93.86	32.31	6.95	34.3	103	48	Average
2413	108.39	-	-	103.43	32.31	6.95	34.3	103	48	Peak
4824	41.42	-32.58	74	56.15	33.97	8.77	57.47	100	0	Peak
7236	41.94	-46.45	88.39	53.54	35.55	10.83	57.98	100	0	Peak

Test Mode :	802.11g	Temperature :	21~23°C
Test Channel :	01	Relative Humidity :	51~53%
Test Engineer :	Kyle Jhuang	Polarization :	Vertical
Remark :	1. 2411 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
2411	91.81	-	-	86.85	32.31	6.95	34.3	104	89	Average
2411	101.65	-	-	96.69	32.31	6.95	34.3	104	89	Peak
4824	42.02	-31.98	74	56.75	33.97	8.77	57.47	100	0	Peak
7236	41.62	-40.03	81.65	53.22	35.55	10.83	57.98	100	0	Peak

Test Mode :	802.11g	Temperature :	21~23°C
Test Channel :	06	Relative Humidity :	51~53%
Test Engineer :	Kyle Jhuang	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	98.65	-	-	93.66	32.35	6.99	34.35	103	35	Average
2438	108.76	-	-	103.77	32.35	6.99	34.35	103	35	Peak
4875	41.13	-32.87	74	55.84	33.95	8.82	57.48	100	0	Peak
7311	41.22	-32.78	74	52.79	35.54	10.91	58.02	100	0	Peak

Test Mode :	802.11g	Temperature :	21~23°C
Test Channel :	06	Relative Humidity :	51~53%
Test Engineer :	Kyle Jhuang	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	94.58	-	-	89.59	32.35	6.99	34.35	167	266	Average
2438	104.49	-	-	99.5	32.35	6.99	34.35	167	266	Peak
4875	41.24	-32.76	74	55.95	33.95	8.82	57.48	100	0	Peak
7311	41.77	-32.23	74	53.34	35.54	10.91	58.02	100	0	Peak

Test Mode :	802.11g	Temperature :	21~23°C
Test Channel :	11	Relative Humidity :	51~53%
Test Engineer :	Kyle Jhuang	Polarization :	Horizontal
Remark :	1. 2466 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
34.05	24.37	-15.63	40	38.56	17.12	0.57	31.88	-	-	Peak
139.89	25.35	-18.15	43.5	44.21	11.4	1.2	31.46	-	-	Peak
257.88	30.03	-15.97	46	46.98	12.71	1.58	31.24	-	-	Peak
365.8	31.55	-14.45	46	45.78	15.08	2.07	31.38	100	34	Peak
447	31.32	-14.68	46	43.18	16.99	2.29	31.14	-	-	Peak
501.6	28.11	-17.89	46	38.44	18.12	2.45	30.9	-	-	Peak
2466	97.6	-	-	92.6	32.37	7.02	34.39	154	47	Average
2466	107.86	-	-	102.9	32.37	7.02	34.43	154	47	Peak
4923	42.17	-31.83	74	56.85	33.93	8.87	57.48	100	0	Peak
7386	41.9	-32.1	74	53.47	35.52	10.99	58.08	100	0	Peak

Test Mode :	802.11g	Temperature :	21~23°C
Test Channel :	11	Relative Humidity :	51~53%
Test Engineer :	Kyle Jhuang	Polarization :	Vertical
Remark :	1. 2460 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
64.29	29.11	-10.89	40	53.91	6.18	0.79	31.77	100	214	Peak
95.88	24.42	-19.08	43.5	45.79	9.32	0.98	31.67	-	-	Peak
257.61	25.49	-20.51	46	42.44	12.71	1.58	31.24	-	-	Peak
365.8	26.08	-19.92	46	40.31	15.08	2.07	31.38	-	-	Peak
407.8	25.69	-20.31	46	38.77	16.16	2.17	31.41	-	-	Peak
812.4	24.99	-21.01	46	29.84	22.23	3.17	30.25	-	-	Peak
2460	92.88	-	-	87.88	32.37	7.02	34.39	162	263	Average
2460	102.75	-	-	97.75	32.37	7.02	34.39	162	263	Peak
4923	41.16	-32.84	74	55.84	33.93	8.87	57.48	100	0	Peak
7386	42.19	-31.81	74	53.76	35.52	10.99	58.08	100	0	Peak

Test Mode :	2.4GHz 802.11n HT20	Temperature :	21~23°C
Test Channel :	01	Relative Humidity :	51~53%
Test Engineer :	Kyle Jhuang	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 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
2413	98.61	-	-	93.65	32.31	6.95	34.3	102	44	Average
2413	108.61	-	-	103.65	32.31	6.95	34.3	102	44	Peak
4824	41.08	-32.92	74	55.81	33.97	8.77	57.47	100	0	Peak
7236	42.03	-46.58	88.61	53.63	35.55	10.83	57.98	100	0	Peak

Test Mode :	2.4GHz 802.11n HT20	Temperature :	21~23°C
Test Channel :	01	Relative Humidity :	51~53%
Test Engineer :	Kyle Jhuang	Polarization :	Vertical
Remark :	1. 2411 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
2411	93.62	-	-	88.66	32.31	6.95	34.3	165	264	Average
2411	103.42	-	-	98.46	32.31	6.95	34.3	165	264	Peak
4824	42.1	-31.9	74	56.83	33.97	8.77	57.47	100	0	Peak
7236	41.61	-41.81	83.42	53.21	35.55	10.83	57.98	100	0	Peak

Test Mode :	2.4GHz 802.11n HT20	Temperature :	21~23°C
Test Channel :	06	Relative Humidity :	51~53%
Test Engineer :	Kyle Jhuang	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	98.21	-	-	93.22	32.35	6.99	34.35	100	44	Average
2438	107.39	-	-	102.4	32.35	6.99	34.35	100	44	Peak
4875	41.34	-32.66	74	56.05	33.95	8.82	57.48	100	0	Peak
7311	41.23	-32.77	74	52.8	35.54	10.91	58.02	100	0	Peak

Test Mode :	2.4GHz 802.11n HT20	Temperature :	21~23°C
Test Channel :	06	Relative Humidity :	51~53%
Test Engineer :	Kyle Jhuang	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	94.38	-	-	89.39	32.35	6.99	34.35	167	268	Average
2438	104.1	-	-	99.11	32.35	6.99	34.35	167	268	Peak
4875	41.5	-32.5	74	56.21	33.95	8.82	57.48	100	0	Peak
7311	41.1	-32.9	74	52.67	35.54	10.91	58.02	100	0	Peak

Test Mode :	2.4GHz 802.11n HT20	Temperature :	21~23°C
Test Channel :	11	Relative Humidity :	51~53%
Test Engineer :	Kyle Jhuang	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
33.51	20.11	-19.89	40	34.3	17.12	0.57	31.88	-	-	Peak
134.22	24	-19.5	43.5	42.84	11.52	1.17	31.53	-	-	Peak
230.61	29.44	-16.56	46	47.91	11.25	1.49	31.21	100	25	Peak
420.4	28.68	-17.32	46	41.3	16.42	2.21	31.25	-	-	Peak
501.6	26.86	-19.14	46	37.19	18.12	2.45	30.9	-	-	Peak
709.5	23.63	-22.37	46	30.42	20.75	2.96	30.5	-	-	Peak
2463	97.58	-	-	92.58	32.37	7.02	34.39	156	43	Average
2463	107.71	-	-	102.71	32.37	7.02	34.39	156	43	Peak
4923	41.53	-32.47	74	56.21	33.93	8.87	57.48	100	0	Peak
7386	42.53	-31.47	74	54.1	35.52	10.99	58.08	100	0	Peak

Test Mode :	2.4GHz 802.11n HT20	Temperature :	21~23°C
Test Channel :	11	Relative Humidity :	51~53%
Test Engineer :	Kyle Jhuang	Polarization :	Vertical
Remark :	1. 2461 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
41.34	27.41	-12.59	40	46.26	12.3	0.63	31.78	100	189	Peak
108.3	17.83	-25.67	43.5	37.91	10.61	1.04	31.73	-	-	Peak
230.61	26.24	-19.76	46	44.71	11.25	1.49	31.21	-	-	Peak
338.5	22.61	-23.39	46	37.76	14.35	1.88	31.38	-	-	Peak
420.4	21.78	-24.22	46	34.4	16.42	2.21	31.25	-	-	Peak
612.2	24	-22	46	31.87	19.89	2.73	30.49	-	-	Peak
2461	93.21	-	-	88.21	32.37	7.02	34.39	195	270	Average
2461	102.99	-	-	97.99	32.37	7.02	34.39	195	270	Peak
4923	42.08	-31.92	74	56.76	33.93	8.87	57.48	100	0	Peak
7386	41.89	-32.11	74	53.46	35.52	10.99	58.08	100	0	Peak

Test Mode :	2.4GHz 802.11n HT40	Temperature :	21~23°C
Test Channel :	03	Relative Humidity :	51~53%
Test Engineer :	Kyle Jhuang	Polarization :	Horizontal
Remark :	1. 2423 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
2423	95.64	-	-	90.71	32.33	6.95	34.35	106	299	Average
2423	105.92	-	-	100.99	32.33	6.95	34.35	106	299	Peak
4845	41.85	-32.15	74	56.56	33.96	8.8	57.47	100	0	Peak
7266	41.51	-32.49	74	53.11	35.54	10.86	58	100	0	Peak

Test Mode :	2.4GHz 802.11n HT40	Temperature :	21~23°C
Test Channel :	03	Relative Humidity :	51~53%
Test Engineer :	Kyle Jhuang	Polarization :	Vertical
Remark :	1. 2423 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
2423	90.87	-	-	85.94	32.33	6.95	34.35	137	264	Average
2423	100.31	-	-	95.38	32.33	6.95	34.35	137	264	Peak
4845	41.56	-32.44	74	56.27	33.96	8.8	57.47	100	0	Peak
7266	42.74	-31.26	74	54.34	35.54	10.86	58	100	0	Peak

Test Mode :	2.4GHz 802.11n HT40	Temperature :	21~23°C
Test Channel :	06	Relative Humidity :	51~53%
Test Engineer :	Kyle Jhuang	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
98.04	21.34	-22.16	43.5	42.45	9.56	0.99	31.66	-	-	Peak
147.99	22.64	-20.86	43.5	41.59	11.24	1.21	31.4	-	-	Peak
284.88	27.58	-18.42	46	44.25	13.09	1.66	31.42	-	-	Peak
311.9	26.69	-19.31	46	42.44	13.64	1.79	31.18	-	-	Peak
501.6	28.59	-17.41	46	38.92	18.12	2.45	30.9	100	33	Peak
854.4	24.2	-21.8	46	28.84	22.64	3.28	30.56	-	-	Peak
2438	98.16	-	-	93.17	32.35	6.99	34.35	102	39	Average
2438	107.77	-	-	102.78	32.35	6.99	34.35	102	39	Peak
4875	41.35	-32.65	74	56.06	33.95	8.82	57.48	100	0	Peak
7311	41.36	-32.64	74	52.93	35.54	10.91	58.02	100	0	Peak

Test Mode :	2.4GHz 802.11n HT40	Temperature :	21~23°C
Test Channel :	06	Relative Humidity :	51~53%
Test Engineer :	Kyle Jhuang	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
43.77	26.73	-13.27	40	46.72	11.1	0.64	31.73	100	288	Peak
79.95	23.11	-16.89	40	46.38	7.57	0.88	31.72	-	-	Peak
209.55	17.74	-25.76	43.5	38.03	9.77	1.36	31.42	-	-	Peak
447	22.72	-23.28	46	34.58	16.99	2.29	31.14	-	-	Peak
505.8	22.03	-23.97	46	32.3	18.2	2.46	30.93	-	-	Peak
612.2	24.55	-21.45	46	32.42	19.89	2.73	30.49	-	-	Peak
2438	93.4	-	-	88.41	32.35	6.99	34.35	160	262	Average
2438	102.75	-	-	97.76	32.35	6.99	34.35	160	262	Peak
4875	41.34	-32.66	74	56.05	33.95	8.82	57.48	100	0	Peak
7311	41.49	-32.51	74	53.06	35.54	10.91	58.02	100	0	Peak

Test Mode :	2.4GHz 802.11n HT40	Temperature :	21~23°C
Test Channel :	09	Relative Humidity :	51~53%
Test Engineer :	Kyle Jhuang	Polarization :	Horizontal
Remark :	1. 2456 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
2456	93.96	-	-	88.96	32.37	7.02	34.39	101	40	Average
2456	103.24	-	-	98.24	32.37	7.02	34.39	101	40	Peak
4905	42.17	-31.83	74	56.85	33.93	8.87	57.48	100	0	Peak
7356	41.69	-32.31	74	53.26	35.53	10.96	58.06	100	0	Peak

Test Mode :	2.4GHz 802.11n HT40	Temperature :	21~23°C
Test Channel :	09	Relative Humidity :	51~53%
Test Engineer :	Kyle Jhuang	Polarization :	Vertical
Remark :	1. 2452 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
2452	89.71	-	-	84.76	32.35	6.99	34.39	160	263	Average
2452	99.37	-	-	94.42	32.35	6.99	34.39	160	263	Peak
4905	41.5	-32.5	74	56.18	33.93	8.87	57.48	100	0	Peak
7356	41.77	-32.23	74	53.34	35.53	10.96	58.06	100	0	Peak

Test Mode :	802.11a	Temperature :	21~23°C
Test Channel :	149	Relative Humidity :	51~53%
Test Engineer :	Kyle Jhuang	Polarization :	Horizontal
Remark :	1. 5747 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
81.3	17.84	-22.16	40	40.88	7.79	0.89	31.72	-	-	Peak
106.95	17.69	-25.81	43.5	37.95	10.43	1.03	31.72	-	-	Peak
197.4	20.48	-23.02	43.5	41.4	9.08	1.31	31.31	-	-	Peak
447	30.89	-15.11	46	42.75	16.99	2.29	31.14	100	41	Peak
591.9	22.84	-23.16	46	31.18	19.65	2.67	30.66	-	-	Peak
860	24.2	-21.8	46	28.82	22.7	3.28	30.6	-	-	Peak
5747	98.08	-	-	86.85	35.34	10.06	34.17	161	29	Average
5747	108.18	-	-	96.95	35.34	10.06	34.17	161	29	Peak
11490	42.63	-31.37	74	48.46	38.38	14.33	58.54	100	0	Peak

Test Mode :	802.11a	**Temperature :**	21~23°C
Test Channel :	149	**Relative Humidity :**	51~53%
Test Engineer :	Kyle Jhuang	**Polarization :**	Vertical
Remark :	1. 5748 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
31.89	26.31	-13.69	40	39.07	18.56	0.55	31.87	100	213	Peak
79.95	23.11	-16.89	40	46.38	7.57	0.88	31.72	-	-	Peak
245.73	24.86	-21.14	46	42.25	12.26	1.53	31.18	-	-	Peak
393.1	18.88	-27.12	46	32.37	15.82	2.13	31.44	-	-	Peak
566	24.96	-21.04	46	34.17	19.22	2.6	31.03	-	-	Peak
684.3	23.06	-22.94	46	30.12	20.48	2.91	30.45	-	-	Peak
5748	90.69	-	-	79.46	35.34	10.06	34.17	159	257	Average
5748	100.82	-	-	89.59	35.34	10.06	34.17	159	257	Peak
11490	44.24	-29.76	74	49.57	38.38	14.33	58.04	100	0	Peak

Test Mode :	802.11a	Temperature :	21~23°C
Test Channel :	157	Relative Humidity :	51~53%
Test Engineer :	Kyle Jhuang	Polarization :	Horizontal
Remark :	1. 5787 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
5787	96.05	-	-	84.83	35.38	10.07	34.23	112	41	Average
5787	106.23	-	-	95.01	35.38	10.07	34.23	112	41	Peak
11571	44.02	-29.98	74	49.73	38.46	14.41	58.58	100	0	Peak

Test Mode :	802.11a	Temperature :	21~23°C
Test Channel :	157	Relative Humidity :	51~53%
Test Engineer :	Kyle Jhuang	Polarization :	Vertical
Remark :	1. 5789 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
5789	90.92	-	-	79.68	35.38	10.09	34.23	162	128	Average
5789	100.17	-	-	88.93	35.38	10.09	34.23	162	128	Peak
11571	43.86	-30.14	74	48.93	38.46	14.41	57.94	100	0	Peak

Test Mode :	802.11a	Temperature :	21~23°C
Test Channel :	165	Relative Humidity :	51~53%
Test Engineer :	Kyle Jhuang	Polarization :	Horizontal
Remark :	1. 5824 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
5824	96.35	-	-	85.11	35.4	10.11	34.27	101	44	Average
5824	108.44	-	-	97.2	35.4	10.11	34.27	101	44	Peak
11649	43.44	-30.56	74	49.02	38.51	14.52	58.61	100	0	Peak

Test Mode :	802.11a	Temperature :	21~23°C
Test Channel :	165	Relative Humidity :	51~53%
Test Engineer :	Kyle Jhuang	Polarization :	Vertical
Remark :	1. 5824 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
5824	88.87	-	-	77.63	35.4	10.11	34.27	149	335	Average
5824	99.33	-	-	88.09	35.4	10.11	34.27	149	335	Peak
11649	44.4	-29.6	74	49.26	38.51	14.52	57.89	100	0	Peak

Test Mode :	5GHz 802.11n HT20	Temperature :	21~23°C
Test Channel :	149	Relative Humidity :	51~53%
Test Engineer :	Kyle Jhuang	Polarization :	Horizontal
Remark :	1. 5742 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
41.61	17.37	-22.63	40	36.2	12.3	0.63	31.76	-	-	Peak
130.71	22.89	-20.61	43.5	41.72	11.58	1.15	31.56	100	52	Peak
188.76	19.49	-24.01	43.5	40.53	8.99	1.28	31.31	-	-	Peak
393.1	23.82	-22.18	46	37.31	15.82	2.13	31.44	-	-	Peak
708.1	23.33	-22.67	46	30.15	20.72	2.96	30.5	-	-	Peak
873.3	24.68	-21.32	46	29.22	22.83	3.3	30.67	-	-	Peak
5742	84.04	-	-	72.81	35.34	10.06	34.17	189	32	Average
5742	106.8	-	-	95.57	35.34	10.06	34.17	189	32	Peak
11490	44.56	-29.44	74	50.39	38.38	14.33	58.54	100	0	Peak

Test Mode :	5GHz 802.11n HT20	Temperature :	21~23°C
Test Channel :	149	Relative Humidity :	51~53%
Test Engineer :	Kyle Jhuang	Polarization :	Vertical
Remark :	1. 5747 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
81.03	22.88	-17.12	40	45.92	7.79	0.89	31.72	100	159	Peak
222.78	20.38	-25.62	46	39.44	10.72	1.44	31.22	-	-	Peak
268.68	20.53	-25.47	46	37.34	12.86	1.63	31.3	-	-	Peak
338.5	22.56	-23.44	46	37.71	14.35	1.88	31.38	-	-	Peak
474.3	22.01	-23.99	46	33.12	17.55	2.36	31.02	-	-	Peak
779.5	24.12	-21.88	46	29.54	21.79	3.11	30.32	-	-	Peak
5747	90.34	-	-	79.11	35.34	10.06	34.17	104	122	Average
5747	99.2	-	-	87.97	35.34	10.06	34.17	104	122	Peak
11490	44.82	-29.18	74	50.15	38.38	14.33	58.04	100	0	Peak

Test Mode :	5GHz 802.11n HT20	Temperature :	21~23°C
Test Channel :	157	Relative Humidity :	51~53%
Test Engineer :	Kyle Jhuang	Polarization :	Horizontal
Remark :	1. 5787 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
5787	97.19	-	-	85.97	35.38	10.07	34.23	185	24	Average
5787	106.77	-	-	95.55	35.38	10.07	34.23	185	24	Peak
11571	43.79	-30.21	74	49.5	38.46	14.41	58.58	100	0	Peak

Test Mode :	5GHz 802.11n HT20	Temperature :	21~23°C
Test Channel :	157	Relative Humidity :	51~53%
Test Engineer :	Kyle Jhuang	Polarization :	Vertical
Remark :	1. 5787 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
5787	91.4	-	-	80.18	35.38	10.07	34.23	174	124	Average
5787	100.37	-	-	89.15	35.38	10.07	34.23	174	124	Peak
11571	43.27	-30.73	74	48.34	38.46	14.41	57.94	100	0	Peak

Test Mode :	5GHz 802.11n HT20	Temperature :	21~23°C
Test Channel :	165	Relative Humidity :	51~53%
Test Engineer :	Kyle Jhuang	Polarization :	Horizontal
Remark :	1. 5823 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
5823	97.91	-	-	86.67	35.4	10.11	34.27	158	21	Average
5823	107.54	-	-	96.3	35.4	10.11	34.27	158	21	Peak
11649	43.07	-30.93	74	48.65	38.51	14.52	58.61	100	0	Peak

Test Mode :	5GHz 802.11n HT20	Temperature :	21~23°C
Test Channel :	165	Relative Humidity :	51~53%
Test Engineer :	Kyle Jhuang	Polarization :	Vertical
Remark :	1. 5822 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
5822	91.79	-	-	80.55	35.4	10.11	34.27	170	123	Average
5822	101.56	-	-	90.32	35.4	10.11	34.27	170	123	Peak
11649	44.5	-29.5	74	49.36	38.51	14.52	57.89	100	0	Peak

Test Mode :	5GHz 802.11n HT40	Temperature :	21~23°C
Test Channel :	151	Relative Humidity :	51~53%
Test Engineer :	Kyle Jhuang	Polarization :	Horizontal
Remark :	1. 5757 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
82.65	19.63	-20.37	40	42.57	7.88	0.89	31.71	-	-	Peak
130.71	22.27	-21.23	43.5	41.1	11.58	1.15	31.56	-	-	Peak
217.38	20.86	-25.14	46	40.43	10.31	1.4	31.28	-	-	Peak
420.4	28.68	-17.32	46	41.3	16.42	2.21	31.25	100	85	Peak
501.6	26.86	-19.14	46	37.19	18.12	2.45	30.9	-	-	Peak
709.5	23.63	-22.37	46	30.42	20.75	2.96	30.5	-	-	Peak
5757	93.52	-	-	82.3	35.36	10.06	34.2	174	21	Average
5757	103.29	-	-	92.07	35.36	10.06	34.2	174	21	Peak
11511	45.15	-28.85	74	50.94	38.4	14.35	58.54	100	0	Peak

Test Mode :	5GHz 802.11n HT40	Temperature :	21~23°C
Test Channel :	151	Relative Humidity :	51~53%
Test Engineer :	Kyle Jhuang	Polarization :	Vertical
Remark :	1. 5757 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
34.59	26.63	-13.37	40	41.53	16.4	0.58	31.88	100	311	Peak
108.3	17.83	-25.67	43.5	37.91	10.61	1.04	31.73	-	-	Peak
204.15	17.42	-26.08	43.5	37.99	9.44	1.34	31.35	-	-	Peak
447	23.77	-22.23	46	35.63	16.99	2.29	31.14	-	-	Peak
474.3	22.25	-23.75	46	33.36	17.55	2.36	31.02	-	-	Peak
612.2	24	-22	46	31.87	19.89	2.73	30.49	-	-	Peak
5757	87.16	-	-	75.94	35.36	10.06	34.2	174	126	Average
5757	97.12	-	-	85.9	35.36	10.06	34.2	174	126	Peak
11511	44.27	-29.73	74	49.52	38.4	14.35	58	100	0	Peak

Test Mode :	5GHz 802.11n HT40	Temperature :	21~23°C
Test Channel :	159	Relative Humidity :	51~53%
Test Engineer :	Kyle Jhuang	Polarization :	Horizontal
Remark :	1. 5797 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
5797	93.21	-	-	81.97	35.38	10.09	34.23	172	20	Average
5797	104.29	-	-	93.05	35.38	10.09	34.23	172	20	Peak
11589	43.88	-30.12	74	49.55	38.47	14.44	58.58	100	0	Peak

Test Mode :	5GHz 802.11n HT40	Temperature :	21~23°C
Test Channel :	159	Relative Humidity :	51~53%
Test Engineer :	Kyle Jhuang	Polarization :	Vertical
Remark :	1. 5793 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
5793	86.96	-	-	75.72	35.38	10.09	34.23	171	124	Average
5793	96.8	-	-	85.56	35.38	10.09	34.23	171	124	Peak
11589	43.51	-30.49	74	48.53	38.47	14.44	57.93	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 (dBμV)	
	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.

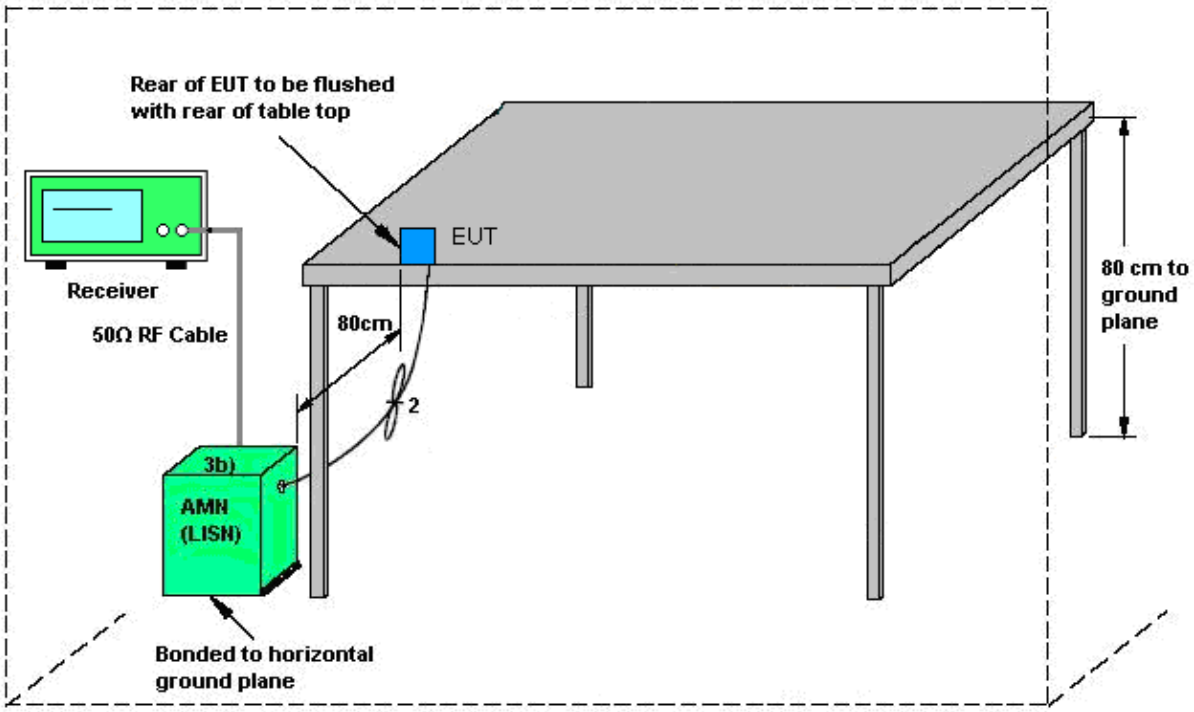
3.6.2 Measuring Instruments

See list of measuring instruments of this test report.

3.6.3 Test Procedures

1. The testing follows the guidelines in ANSI C63.10-2009.
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.

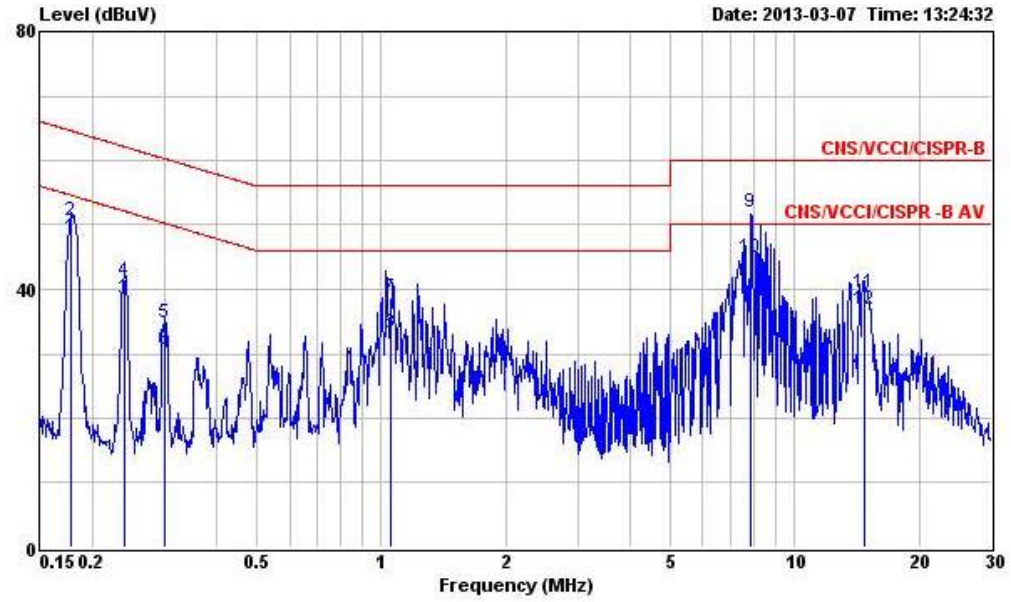
3.6.4 Test Setup



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

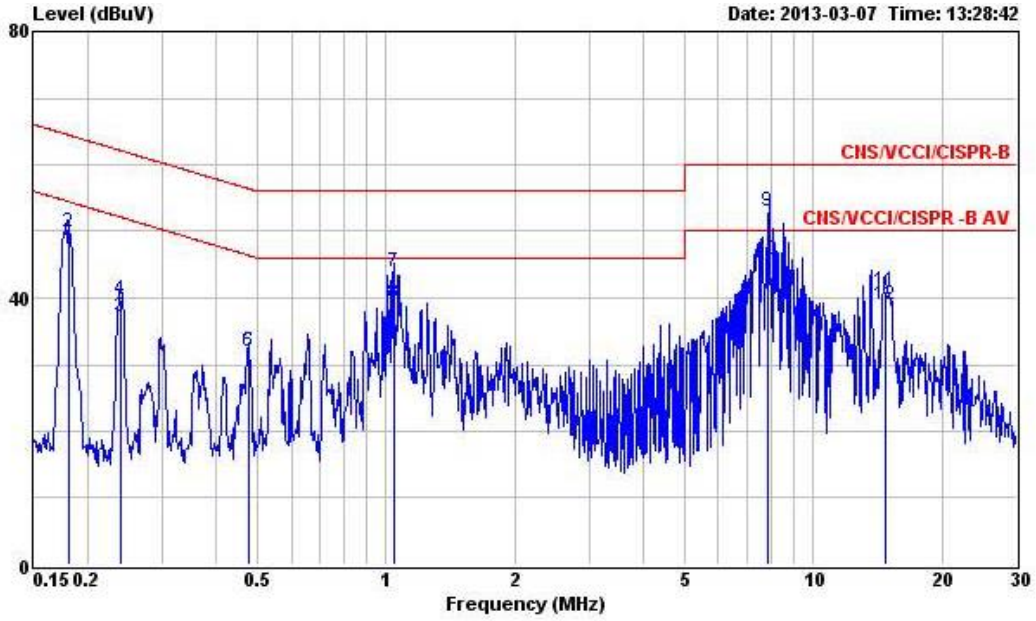
Test Mode :	Mode 1	**Temperature :**	24~25℃
Test Engineer :	David Du	**Relative Humidity :**	47~48%
Test Voltage :	120Vac / 60Hz	**Phase :**	Line
Function Type :	Bluetooth Link + WLAN Link + MP3 + SD Card + H Pattern + HDMI Cable + Earphone + USB Cable (Data Link with PC) + NFC On		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



Site : CO01-HY
Condition : CNS/VCCI/CISPR-B LISN 2001/004-121228 LINE

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.178	48.09	-6.49	54.58	47.71	0.14	0.24	Average
2	0.178	50.74	-13.84	64.58	50.36	0.14	0.24	QP
3	0.239	38.46	-13.67	52.13	38.15	0.14	0.17	Average
4	0.239	41.24	-20.89	62.13	40.93	0.14	0.17	QP
5	0.299	34.84	-25.43	60.27	34.55	0.15	0.14	QP
6	0.299	30.77	-19.50	50.27	30.48	0.15	0.14	Average
7	1.050	38.83	-17.17	56.00	38.56	0.17	0.10	QP
8	1.050	33.19	-12.81	46.00	32.92	0.17	0.10	Average
9	7.810	51.96	-8.04	60.00	51.50	0.29	0.17	QP
10	7.810	44.98	-5.02	50.00	44.52	0.29	0.17	Average
11	14.727	39.48	-20.52	60.00	39.00	0.37	0.11	QP
12	14.727	36.84	-13.16	50.00	36.36	0.37	0.11	Average

Test Mode :	Mode 1	**Temperature :**	24~25℃
Test Engineer :	David Du	**Relative Humidity :**	47~48%
Test Voltage :	120Vac / 60Hz	**Phase :**	Neutral
Function Type :	Bluetooth Link + WLAN Link + MP3 + SD Card + H Pattern + HDMI Cable + Earphone + USB Cable (Data Link with PC) + NFC On		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



Site : CO01-HY
Condition : CNS/VCCI/CISPR-B LISN 2001/004-121228 NEUTRAL

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.181	47.17	-7.27	54.44	46.84	0.10	0.23	Average
2	0.181	49.78	-14.66	64.44	49.45	0.10	0.23	QP
3	0.239	37.19	-14.94	52.13	36.91	0.11	0.17	Average
4	0.239	39.78	-22.35	62.13	39.50	0.11	0.17	QP
5	0.476	32.02	-24.39	56.41	31.80	0.12	0.10	QP
6	0.476	31.83	-14.58	46.41	31.61	0.12	0.10	Average
7	1.040	43.87	-12.13	56.00	43.63	0.14	0.10	QP
8	1.040	39.30	-6.70	46.00	39.06	0.14	0.10	Average
9	7.810	52.96	-7.04	60.00	52.51	0.28	0.17	QP
10	7.810	45.64	-4.36	50.00	45.19	0.28	0.17	Average
11	14.728	41.06	-18.94	60.00	40.56	0.39	0.11	QP
12	14.728	38.99	-11.01	50.00	38.49	0.39	0.11	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

Non-standard connector used.

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	R&S	FSP40	100055	9kHz~40GHz	Jun. 06, 2012	Mar. 07, 2013 ~ Mar. 23, 2013	Jun. 05, 2013	Conducted (TH02-HY)
Power Meter	Anritsu	ML2495A	1036004	300MHz~40GHz	Sep. 08, 2012	Mar. 07, 2013 ~ Mar. 23, 2013	Sep. 07, 2013	Conducted (TH02-HY)
Power Sensor	Anritsu	MA2411B	1027253	300MHz~40GHz	Sep. 08, 2012	Mar. 07, 2013 ~ Mar. 23, 2013	Sep. 07, 2013	Conducted (TH02-HY)
EMC Receiver	R&S	ESCS 30	100132	9kHz ~ 2.75GHz	Nov. 14, 2012	Mar. 07, 2013	Nov. 13, 2013	Conduction (CO01-HY)
LISN	MessTec	NNB-2/16Z	2001/004	9kHz – 30MHz	Dec. 28, 2012	Mar. 07, 2013	Dec. 27, 2013	Conduction (CO01-HY)
LISN (Support Unit)	MessTec	NNB-2/16Z	2001/009	9kHz ~ 30MHz	Jan. 08, 2013	Mar. 07, 2013	Jan. 07, 2014	Conduction (CO01-HY)
EMI Filter	LINDGREN	LRE-2060	1004	< 450Hz	N/A	Mar. 07, 2013	N/A	Conduction (CO01-HY)
EMI Filter	LINDGREN	N6006	201052	0~60Hz	N/A	Mar. 07, 2013	N/A	Conduction (CO01-HY)
RF Cable-CON	HUBER+SUHNER	RG213/U	07611832010001	9kHz ~ 30MHz	Mar. 01, 2013	Mar. 07, 2013	Feb. 28, 2014	Conduction (CO01-HY)
Bilog Antenna	Schaffner	CBL6111C	2726	30MHz ~ 1GHz	Oct. 06, 2012	Mar. 27, 2013 ~ Apr. 10, 2013	Oct. 05, 2013	Radiation (03CH07-HY)
Spectrum Analyzer	Rohde & Schwarz	FSP30	101067	9KHz ~ 30GHz	Nov. 30, 2012	Mar. 27, 2013 ~ Apr. 10, 2013	Nov. 29, 2013	Radiation (03CH07-HY)
Double Ridge Horn Antenna	ESCO	3117	00075962	1GHz ~ 18GHz	Aug. 22, 2012	Mar. 27, 2013 ~ Apr. 10, 2013	Aug. 21, 2013	Radiation (03CH07-HY)
Preamplifier	Agilent	8449B	3008A02362	1GHz~ 26.5GHz	Dec. 01, 2012	Mar. 27, 2013 ~ Apr. 10, 2013	Nov. 30, 2013	Radiation (03CH07-HY)
Preamplifier	MITEQ	AMF-7D-00101800-30-10P	159088	1GHz ~ 18GHz	Feb. 27, 2013	Mar. 27, 2013 ~ Apr. 10, 2013	Feb. 26, 2014	Radiation (03CH07-HY)
Preamplifier	COM-POWER	PA-103A	161241	10-1000MHz. 32dB.GAIN	Feb. 26, 2013	Mar. 27, 2013 ~ Apr. 10, 2013	Feb. 25, 2014	Radiation (03CH07-HY)
EMI Test Receiver	Rohde & Schwarz	ESCI 7	100724	9kHz~7GHz	Sep. 03, 2012	Mar. 27, 2013 ~ Apr. 10, 2013	Sep. 02, 2013	Radiation (03CH07-HY)
Loop Antenna	R&S	HFH2-Z2	860004/001	9KHz ~ 30MHz	Jul. 03, 2012	Mar. 27, 2013 ~ Apr. 10, 2013	Jul. 02, 2013	Radiation (03CH07-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170251	15GHz ~ 40GHz	Sep. 28, 2012	Mar. 27, 2013 ~ Apr. 10, 2013	Sep. 27, 2013	Radiation (03CH07-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**

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**2.54**

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

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

Appendix A. Photographs of EUT

Please refer to Sporton report number EP322823 as below.