

FCC RF Test Report

APPLICANT : VERTU Corporation Limited
EQUIPMENT : GSM/WCDMA Cellular Telephone with BT and WLAN
BRAND NAME : VERTU
MODEL NAME : RM-828V
MARKETING NAME : VERTU Ti
FCC ID : P7QRM-828V
STANDARD : FCC Part 15 Subpart C §15.247
CLASSIFICATION : (DTS) Digital Transmission System

The product was received on Sep. 19, 2012 and completely tested on Oct. 25, 2012. 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:



Jones Tsai / Manager



SPORTON INTERNATIONAL INC.

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FCC ID : P7QRM-828V

Page Number : 1 of 130

Report Issued Date : Nov. 12, 2012

Report Version : Rev. 01



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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR291928C	Rev. 01	Initial issue of report	Nov. 12, 2012

SUMMARY OF TEST RESULT

Report Section	FCC Rule	IC Rule	Description	Limit	Result	Remark
3.1	15.247(a)(2)	A8.2(a)	6dB Bandwidth	$\geq 0.5\text{MHz}$	Pass	-
3.2	15.247(b)	A8.4	Power Output Measurement	$\leq 30\text{dBm}$	Pass	-
3.3	15.247(e)	A8.2(b)	Power Spectral Density	$\leq 8\text{dBm}/3\text{kHz}$	Pass	-
3.4	15.247(d)	A8.5	Conducted Band Edges	$\leq 20\text{dBc}$	Pass	-
			Conducted Spurious Emission		Pass	-
3.5	15.247(d)	A8.5	Radiated Band Edges	15.209(a) & 15.247(d)	Pass	Under limit 0.51 dB at 5725.000 MHz
			Radiated Spurious Emission		Pass	
3.6	15.207	Gen 7.2.4	AC Conducted Emission	15.207(a)	Pass	Under limit 12.40 dB at 0.198 MHz
3.7	15.203 & 15.247(b)	A8.4	Antenna Requirement	N/A	Pass	-

1 General Description

1.1 Applicant

VERTU Corporation Limited

Beacon Hill Road, Church Crookham, Hampshire GU52 8DY, United Kingdom

1.2 Manufacturer

VERTU Corporation Limited

Beacon Hill Road, Church Crookham, Hampshire GU52 8DY, United Kingdom

1.3 Feature of Equipment Under Test

Product Feature	
Equipment	GSM/WCDMA Cellular Telephone with BT and WLAN
Brand Name	VERTU
Model Name	RM-828V
Marketing Name	VERTU Ti
FCC ID	P7QRM-828V
EUT supports Radios application	GSM/EGPRS/WCDMA/HSDPA/ WLAN 11abgn / Bluetooth / NFC
HW Version	F2.0
SW Version	4.0.4.A.0.1.30
EUT Stage	Identical Prototype

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

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 : 22.37 dBm (0.1726 W) 802.11g : 21.32 dBm (0.1355 W) 802.11n HT20 : 19.68 dBm (0.0929 W) 802.11n HT40 : 20.20 dBm (0.1047 W) <5745 MHz ~ 5825 MHz> 802.11a : 18.09 dBm (0.0644 W) 802.11n HT20 : 18.39 dBm (0.0690 W) 802.11n HT40 : 17.91 dBm (0.0618 W)
Antenna Type	802.11b/g/n : Monopole with couple Antenna type with gain -0.50 dBi 802.11a/n : Monopole with couple Antenna type with gain 2.10 dBi
Type of Modulation	802.11b : DSSS (BPSK / QPSK / CCK) 802.11a/g/n : OFDM (BPSK / QPSK / 16QAM / 64QAM)

Specification of Accessories complied with Test		
AC Adapter	Brand Name	VERTU
	Model Name	AC-31
Car Charger	Brand Name	VERTU
	Model Name	DC-30V
Portable Power Charger	Brand Name	VERTU
	Model Name	DC-15V
Battery	Brand Name	NOKIA
	Model Name	BL-5K
Earphone	Brand Name	VERTU
	Model Name	WH-3V
USB Cable 1	Brand Name	VERTU
	Model Name	CA-209DV
	Signal Line	1.2 meter shielded cable without ferrite core
USB Cable 2	Brand Name	VERTU
	Model Name	CA-210DV
	Signal Line	0.25 meter shielded cable without ferrite core
LCD Panel	Brand Name	CMI
	Model Name	Cleo
Camera (Main)	Brand Name	Toshiba
	Model Name	TCM8615MD
Camera (Front)	Brand Name	Sharp
	Model Name	RJ66HA101

1.4 Testing Site

Test Site	SPORTON INTERNATIONAL INC.			
Test Site Location	No. 52, Hwa Ya 1 st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL: +886-3-3273456 / FAX: +886-3-3284978			
Test Site No.	Sporton Site No.			FCC/IC Registration No.
	TH02-HY	CO05-HY	03CH07-HY	722060/4086B-1

1.5 Applied Standards

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

- ♦ FCC Part 15 Subpart C §15.247
- ♦ FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v02
- ♦ ANSI C63.4-2003 and ANSI C63.10-2009
- ♦ IC RSS-210 Issue 8
- ♦ IC RSS-Gen Issue 3

Remark:

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.

1.6 Ancillary Equipment List

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	System Simulator	R&S	CMU 200	N/A	N/A	Unshielded, 1.8 m
2.	GPS Station	Pendulum	GSG-54	N/A	N/A	Unshielded, 1.8 m
3.	WLAN AP	D-Link	DIR-628	KA2DIR628A2	N/A	Unshielded, 1.8 m
4.	Notebook	DELL	Latitude E6320	FCC DoC	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
5.	LCD Monitor	Dell	U2410	FCC DoC	Shielded, 1.6 m	Unshielded, 1.8 m
6.	Bluetooth Earphone	Sony Ericsson	MW600	PY7DDA-2029	N/A	N/A
7.	iPod	Apple	A1285	FCC DoC	Shielded, 1.0 m	N/A

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 (Y plane for 2.4G and 5G) 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
	157	5785	165	5825

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)	22.37	22.21	22.32	22.24

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)	21.32	21.22	21.17	21.13	21.18	21.07	21.11	21.28

2.4GHz 802.11n HT20 mode								
Data Rate (MHz)	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
Peak Power (dBm)	19.68	19.57	19.64	19.59	19.51	19.53	19.61	19.55

2.4GHz 802.11n HT40 mode								
Data Rate (MHz)	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
Peak Power (dBm)	20.20	19.98	20.01	19.91	19.84	19.97	20.14	20.07

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)	18.09	17.95	17.85	18.04	18.07	18.03	18.00	17.92

5GHz 802.11n HT20 mode								
Data Rate (MHz)	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
Peak Power (dBm)	18.39	18.10	18.22	18.14	18.31	18.21	18.15	18.24

5GHz 802.11n HT40 mode								
Data Rate (MHz)	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
Peak Power (dBm)	17.91	17.88	17.80	17.77	17.87	17.79	17.82	17.77

2.3 Test Mode

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

<2.4GHz>

Test Cases				
Conducted TCs	Test Items	Mode	Data Rate	Test Channel
	6dB 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

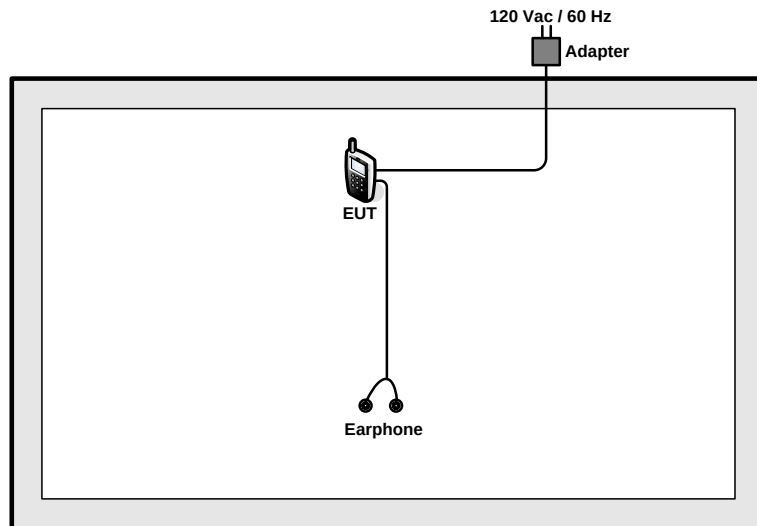
<5GHz>

Test Cases				
Conducted TCs	Test Items	Mode	Data Rate	Test Channel
	6dB 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

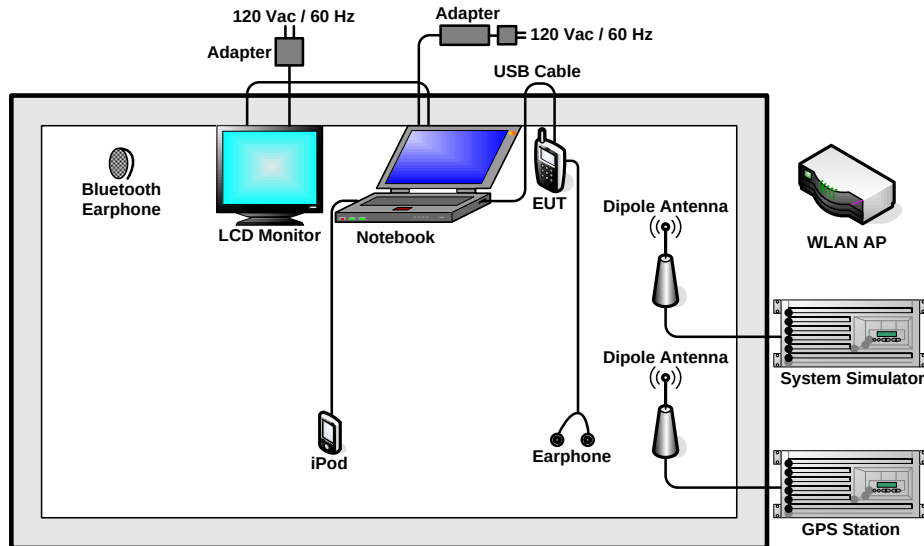
Test Cases	
AC Conducted Emission	Mode 1 : WCDMA Band IV Idle + Bluetooth Link + WLAN (2.4G) Link + GPS Rx + Earphone + Battery + USB Cable 1 (Data Link with Notebook) Mode 2 : WCDMA Band IV Idle + Bluetooth Link + WLAN (5G) Link + GPS Rx + Earphone + Battery + USB Cable 1 (Data Link with Notebook)
Remark: - The worst case of conducted emission is mode 1; only the test data of it was reported. - Link with Notebook means data application transferred mode between EUT and Notebook.	

2.4 Connection Diagram of Test System

<WLAN Tx Mode>



<AC Conducted Emission Mode>



2.5 RF Utility

For WLAN function, programmed RF utility, "QPST.exe" installed in the notebook make the EUT provides functions like channel selection and power level for continuous transmitting and receiving signals.

3 Test Result

3.1 6dB Bandwidth Measurement

3.1.1 Limit of 6dB Bandwidth

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

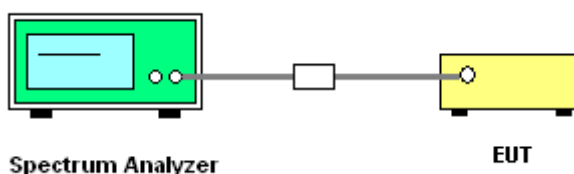
3.1.2 Measuring Instruments

See list of measuring instruments of this test report.

3.1.3 Test Procedures

1. The testing follows the Measurement Procedure of FCC KDB No. 558074 DTS D01 Meas. Guidance v02.
2. The RF output of EUT was connected to the spectrum analyzer by a low loss cable. 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) = 1-5% of the emission bandwidth (EBW). Set the Video bandwidth (VBW) $\geq 3 * RBW$. In order to make an accurate measurement. The 6 dB bandwidth must be greater than 500 KHz.
5. 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 :	Filex Song and Book Lin	Relative Humidity :	50~53%

Channel	Frequency (MHz)	802.11b 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
01	2412	8.05	0.5	Pass
06	2437	9.03	0.5	Pass
11	2462	9.04	0.5	Pass

Test Mode :	802.11g	Temperature :	24~26℃
Test Engineer :	Filex Song and Book Lin	Relative Humidity :	50~53%

Channel	Frequency (MHz)	802.11g 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
01	2412	16.37	0.5	Pass
06	2437	16.37	0.5	Pass
11	2462	16.36	0.5	Pass

Test Mode :	802.11n HT20	Temperature :	24~26℃
Test Engineer :	Filex Song and Book Lin	Relative Humidity :	50~53%

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

Test Mode :	802.11n HT40	Temperature :	24~26℃
Test Engineer :	Filex Song and Book Lin	Relative Humidity :	50~53%

Channel	Frequency (MHz)	2.4GHz 802.11n HT40 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
03	2422	35.62	0.5	Pass
06	2437	35.42	0.5	Pass
09	2452	35.79	0.5	Pass

Test Mode :	802.11a	Temperature :	24~26°C
Test Engineer :	Filex Song and Book Lin	Relative Humidity :	50~53%

Channel	Frequency (MHz)	802.11a 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
149	5745	16.36	0.5	Pass
157	5785	16.36	0.5	Pass
165	5825	16.36	0.5	Pass

Test Mode :	802.11n HT20	Temperature :	24~26°C
Test Engineer :	Filex Song and Book Lin	Relative Humidity :	50~53%

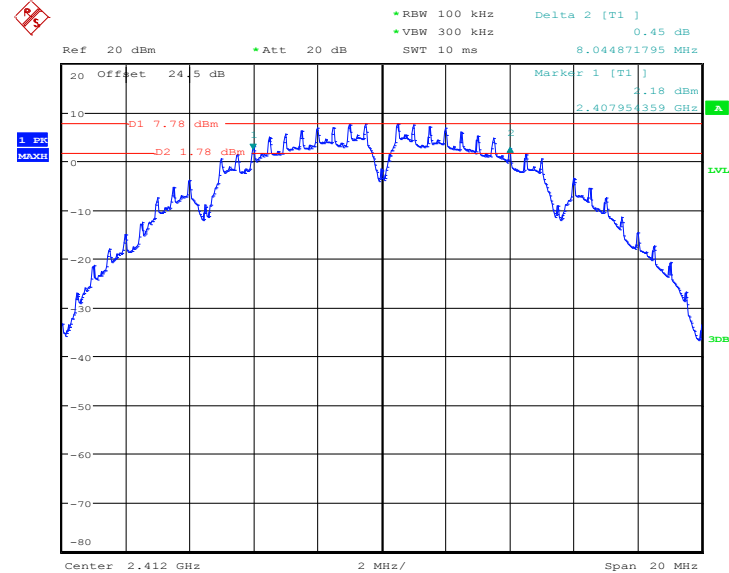
Channel	Frequency (MHz)	5GHz 802.11n HT20 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
149	5745	17.60	0.5	Pass
157	5785	17.58	0.5	Pass
165	5825	17.60	0.5	Pass

Test Mode :	802.11n HT40	Temperature :	24~26°C
Test Engineer :	Filex Song and Book Lin	Relative Humidity :	50~53%

Channel	Frequency (MHz)	5GHz 802.11n HT40 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
151	5755	35.80	0.5	Pass
159	5795	35.68	0.5	Pass

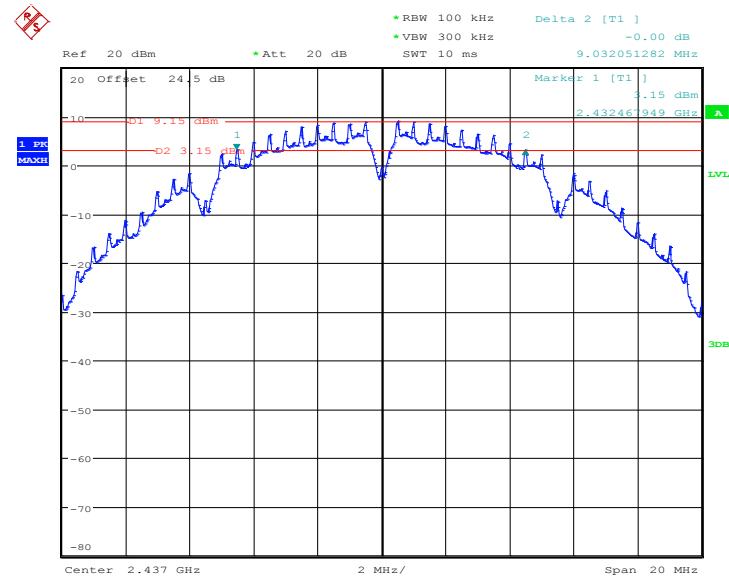
3.1.6 Test Result of 6dB Bandwidth Plots

6 dB Bandwidth Plot on 802.11b Channel 01



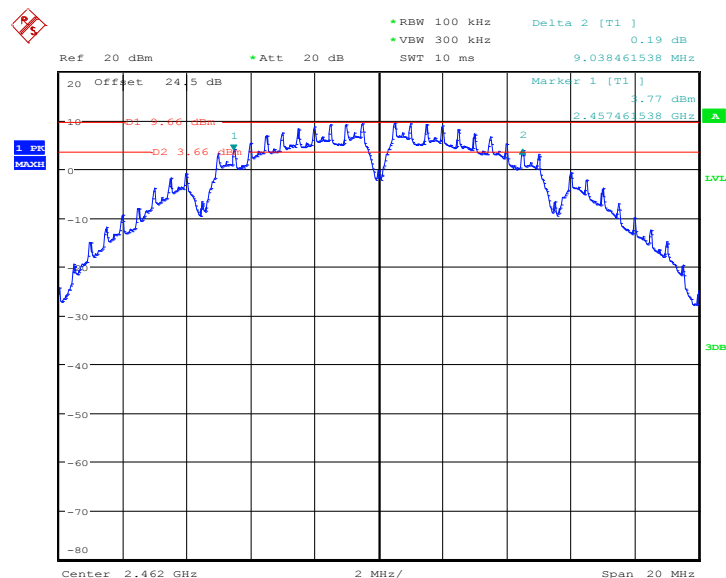
291928-1023 15C 6dB.11b 2412 (ch01)
Date: 23.OCT.2012 17:42:56

6 dB Bandwidth Plot on 802.11b Channel 06



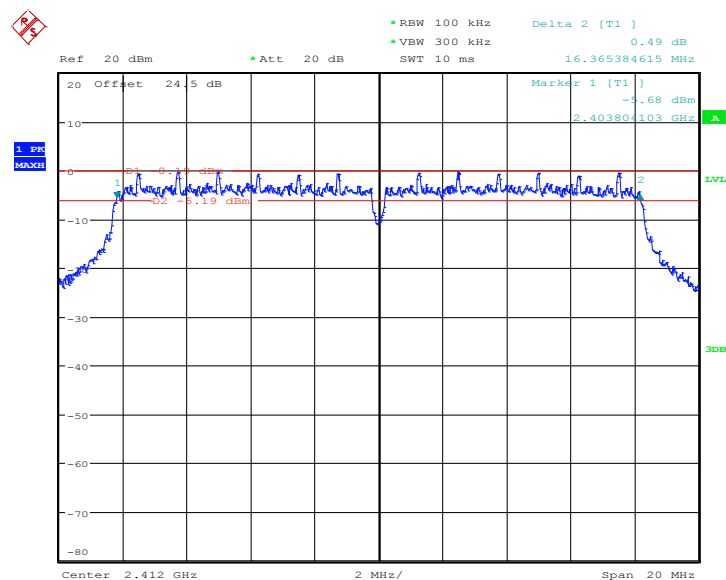
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Date: 23.OCT.2012 17:46:26

6 dB Bandwidth Plot on 802.11b Channel 11

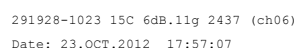


291928-1023 15C 6dB.11b 2462 (ch11)
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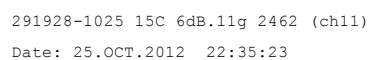
6 dB Bandwidth Plot on 802.11g Channel 01

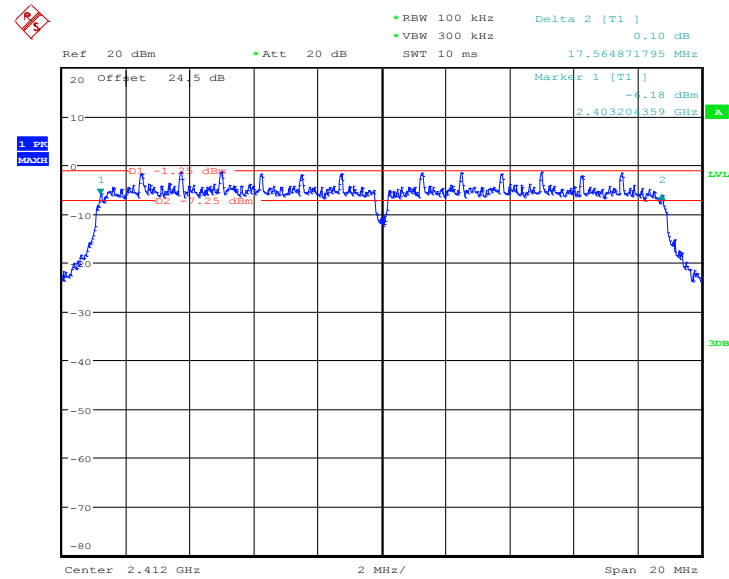


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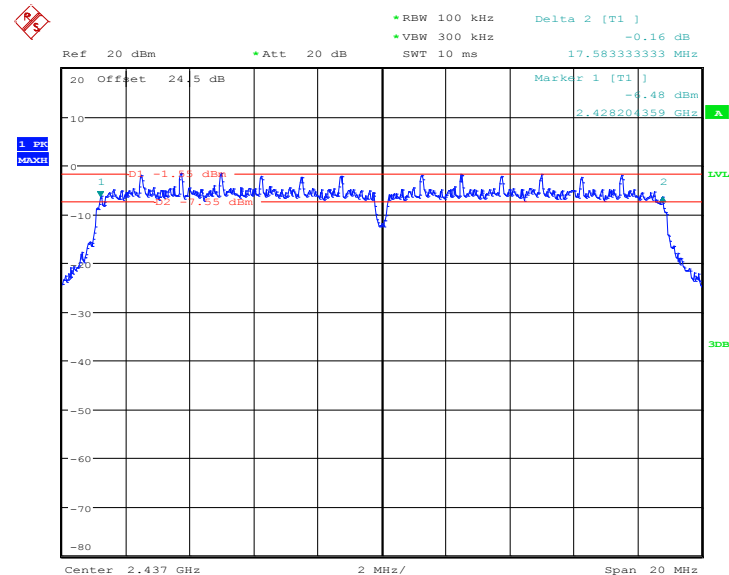
6 dB Bandwidth Plot on 802.11g Channel 11



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


291928-1023 15C 6dB.11g_N20 2412 (ch01)

Date: 23.OCT.2012 18:04:26

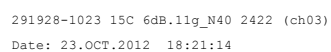
6 dB Bandwidth Plot on 2.4GHz 802.11n HT20 Channel 06


291928-1023 15C 6dB.11g_N20 2437 (ch06)

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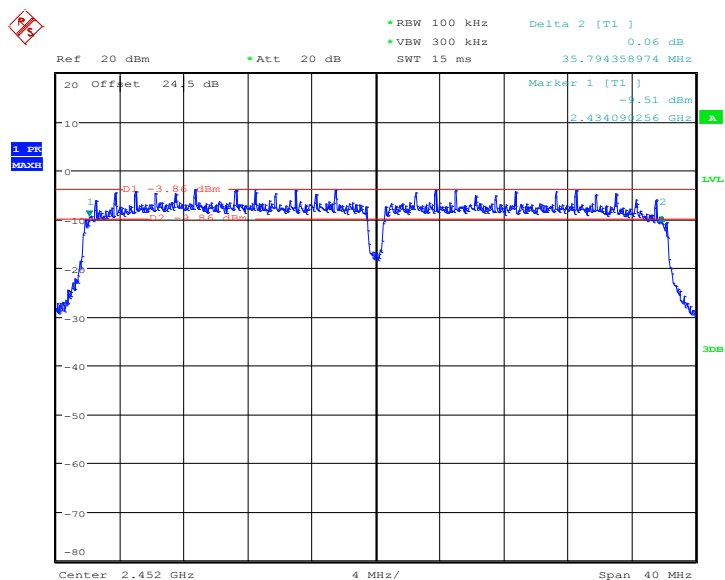
6 dB Bandwidth Plot on 2.4GHz 802.11n HT40 Channel 03



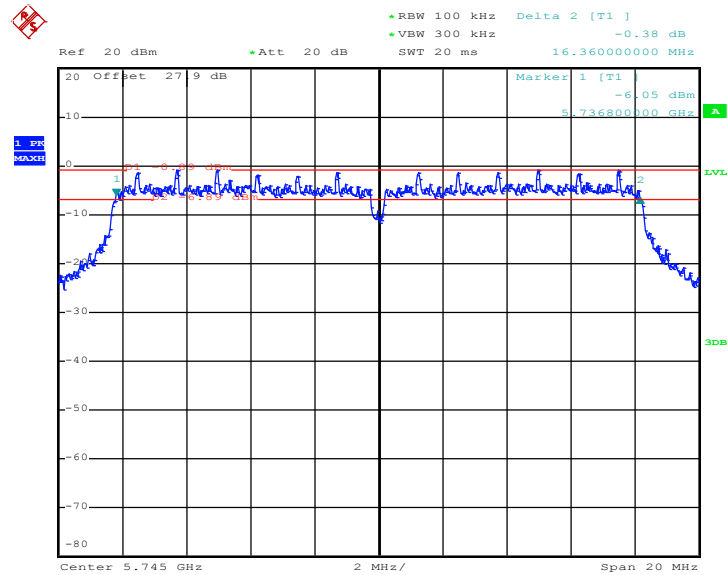


• RBW 100 kHz
 • VBW 300 kHz
 Delta 2 [T1]
 2.39 dB
 35.423076923 MHz
 Ref 20 dBm
 Att 20 dB
 SWT 15 ms
 Marker 1 [T1]
 -16.33 dBm
 2.41912026 GHz
 1.96 MHz
 10.00 dBm
 D1 -4.67 dBm
 Center 2.437 GHz
 4 MHz/
 Span 40 MHz

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

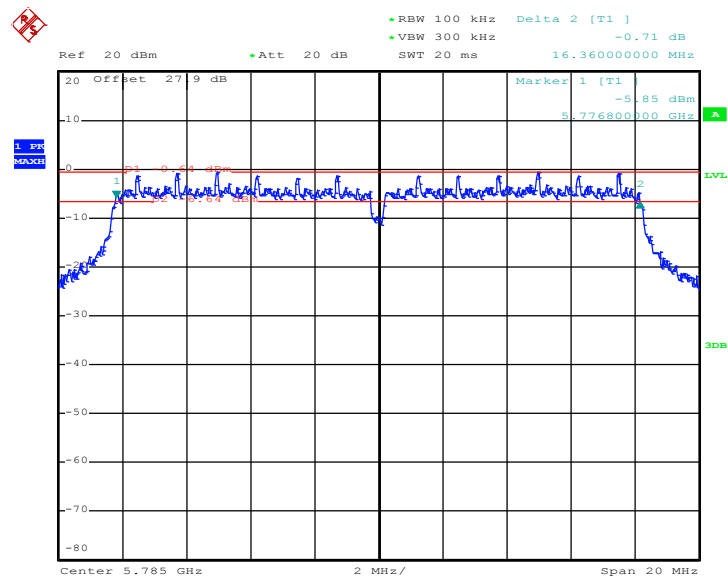


291928-1023 15C 6dB.11g_N40 2452 (ch09)
Date: 23.OCT.2012 18:36:49

6 dB Bandwidth Plot on 802.11a Channel 149


291928-1023 15C 6dB.11a 5745 (ch149)

Date: 23.OCT.2012 19:56:21

6 dB Bandwidth Plot on 802.11a Channel 157


291928-1023 15C 6dB.11a 5785 (ch157)

Date: 23.OCT.2012 20:02:35



Ref 20 dBm Att 20 dB RBW 100 kHz Delta 2 [T1] 0.46 dB VBW 300 kHz SWT 20 ms 16.36000000 MHz

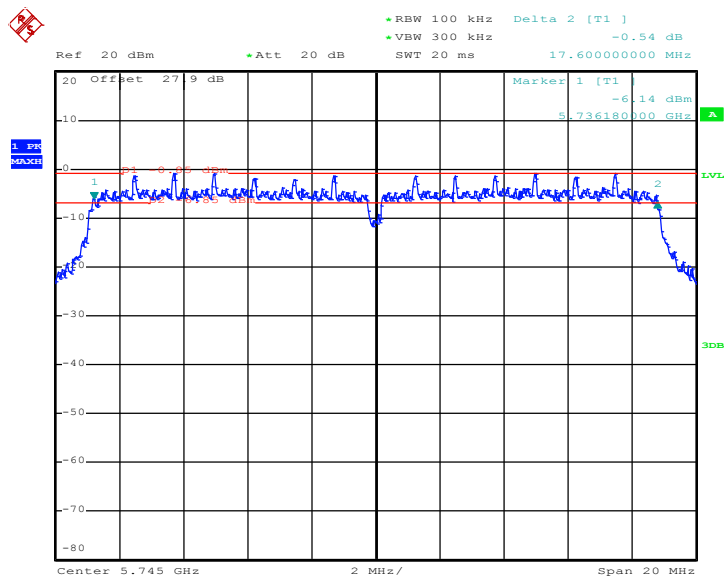
Offset 27.9 dB

Marker 1 [T1] -5.70 dBm 5.81600000 GHz

Marker 2 [T2] -0.2 dBm

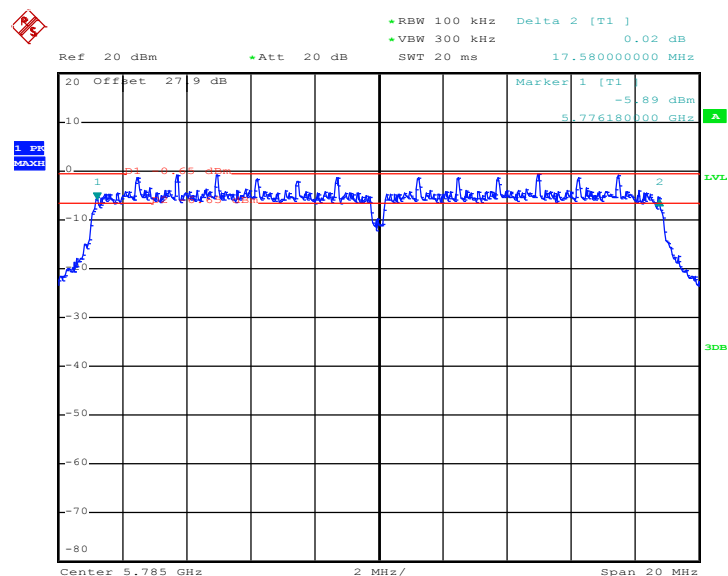
Center 5.825 GHz 2 MHz/ Span 20 MHz

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



291928-1023 15C 6dB.11a_N20 5745 (ch149)
Date: 23.OCT.2012 20:15:21

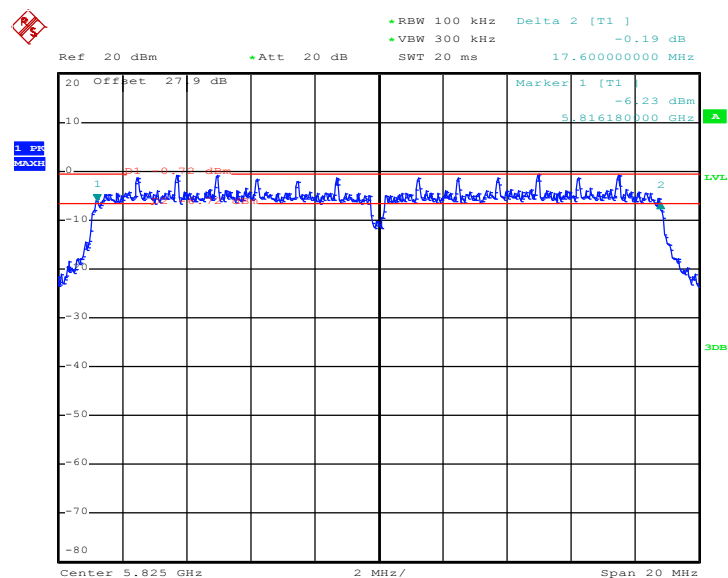
6 dB Bandwidth Plot on 5GHz 802.11n HT20 Channel 157



291928-1023 15C 6dB.11a N20 5785 (ch157)

Date: 23.OCT.2012 20:19:22

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

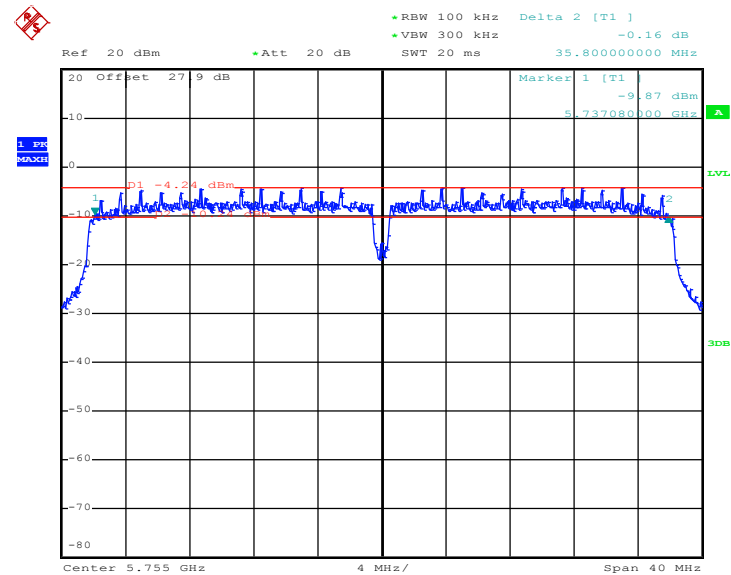


291928-1023 15C 6dB.11a N20 5825 (ch165)

Date: 23.OCT.2012 20:22:35



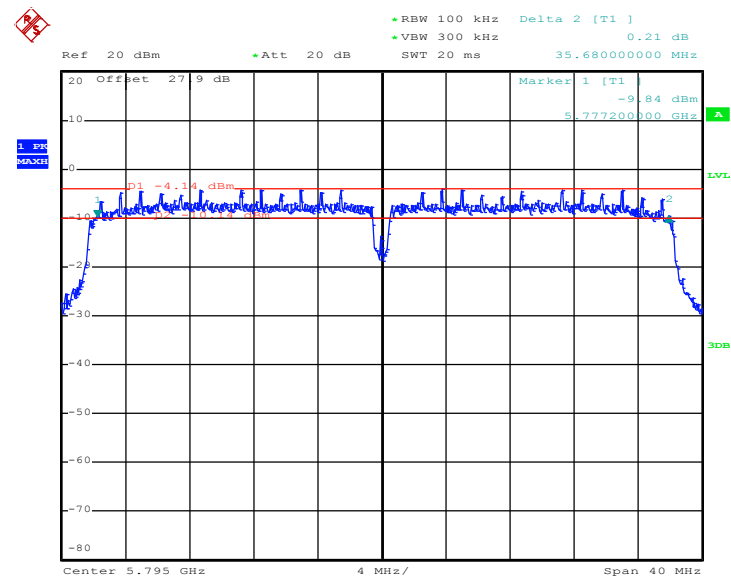
6 dB Bandwidth Plot on 5GHz 802.11n HT40 Channel 151



291928-1023 15C 6dB.11a_N40 5755

Date: 23.OCT.2012 20:27:01

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



291928-1023 15C 6dB.11a_N40 5795

Date: 23.OCT.2012 20:32:33

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.

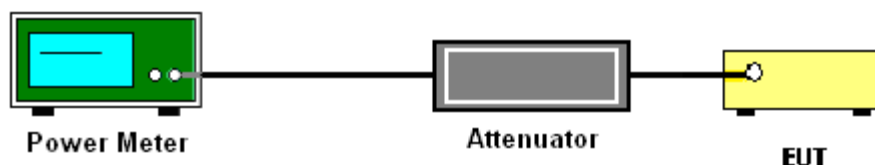
3.2.2 Measuring Instruments

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 v02.
2. The RF output of EUT was connected to the power meter by a low loss cable
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°C
Test Engineer :	Filex Song and Book Lin	Relative Humidity :	50~53%

Channel	Frequency (MHz)	802.11b Peak Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	18.21	30	Pass
06	2437	22.33	30	Pass
11	2462	22.37	30	Pass

Test Mode :	802.11g	Temperature :	24~26°C
Test Engineer :	Filex Song and Book Lin	Relative Humidity :	50~53%

Channel	Frequency (MHz)	802.11g Peak Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	15.38	30	Pass
06	2437	21.23	30	Pass
11	2462	21.32	30	Pass

Test Mode :	802.11n HT20	Temperature :	24~26°C
Test Engineer :	Filex Song and Book Lin	Relative Humidity :	50~53%

Channel	Frequency (MHz)	2.4GHz 802.11n HT20 Peak Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	19.50	30	Pass
06	2437	19.02	30	Pass
11	2462	19.68	30	Pass

Test Mode :	802.11n HT40	Temperature :	24~26°C
Test Engineer :	Filex Song and Book Lin	Relative Humidity :	50~53%

Channel	Frequency (MHz)	2.4GHz 802.11n HT40 Peak Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
03	2422	20.15	30	Pass
06	2437	18.52	30	Pass
09	2452	20.20	30	Pass

Test Mode :	802.11a	Temperature :	24~26℃
Test Engineer :	Filex Song and Book Lin	Relative Humidity :	50~53%

Channel	Frequency (MHz)	802.11a Peak Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
149	5745	17.82	30	Pass
157	5785	18.09	30	Pass
165	5825	18.01	30	Pass

Test Mode :	802.11n HT20	Temperature :	24~26℃
Test Engineer :	Filex Song and Book Lin	Relative Humidity :	50~53%

Channel	Frequency (MHz)	5GHz 802.11n HT20 Peak Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
149	5745	18.18	30	Pass
157	5785	18.39	30	Pass
165	5825	18.27	30	Pass

Test Mode :	802.11n HT40	Temperature :	24~26℃
Test Engineer :	Filex Song and Book Lin	Relative Humidity :	50~53%

Channel	Frequency (MHz)	5GHz 802.11n HT40 Peak Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
151	5755	17.68	30	Pass
159	5795	17.91	30	Pass

3.2.6 Test Result of Average output Power (Reporting Only)

Test Mode :	802.11b	Temperature :	24~26°C
Test Engineer :	Filex Song and Book Lin	Relative Humidity :	50~53%
Duty Cycle:	97.63%	Duty Factor:	0.10dB

Channel	Frequency (MHz)	802.11b Average Output Power (dBm)
01	2412	15.58
06	2437	15.54
11	2462	16.16

Test Mode :	802.11g	Temperature :	24~26°C
Test Engineer :	Filex Song and Book Lin	Relative Humidity :	50~53%
Duty Cycle:	87.18%	Duty Factor:	0.60dB

Channel	Frequency (MHz)	802.11g Average Output Power (dBm)
01	2412	13.12
06	2437	12.92
11	2462	13.17

Test Mode :	802.11n HT20	Temperature :	24~26°C
Test Engineer :	Filex Song and Book Lin	Relative Humidity :	50~53%
Duty Cycle:	86.49%	Duty Factor:	0.63dB

Channel	Frequency (MHz)	2.4GHz 802.11n HT20 Average Output Power (dBm)
01	2412	10.16
06	2437	9.65
11	2462	10.27

Test Mode :	802.11n HT40	Temperature :	24~26°C
Test Engineer :	Filex Song and Book Lin	Relative Humidity :	50~53%
Duty Cycle:	85.95%	Duty Factor:	0.66dB

Channel	Frequency (MHz)	2.4GHz 802.11n HT40 Average Output Power (dBm)
03	2422	9.57
06	2437	9.59
09	2452	10.37

Test Mode :	802.11a	Temperature :	24~26℃
Test Engineer :	Filex Song and Book Lin	Relative Humidity :	50~53%
Duty Cycle:	87.18%	Duty Factor:	0.60dB

Channel	Frequency (MHz)	802.11a Average Output Power (dBm)
149	5745	10.62
157	5785	10.94
165	5825	10.71

Test Mode :	802.11n HT20	Temperature :	24~26℃
Test Engineer :	Filex Song and Book Lin	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	10.55
157	5785	10.88
165	5825	10.23

Test Mode :	802.11n HT40	Temperature :	24~26℃
Test Engineer :	Filex Song and Book Lin	Relative Humidity :	50~53%
Duty Cycle:	86.18%	Duty Factor:	0.65dB

Channel	Frequency (MHz)	5GHz 802.11n HT40 Average Output Power (dBm)
151	5755	10.62
159	5795	10.90

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.

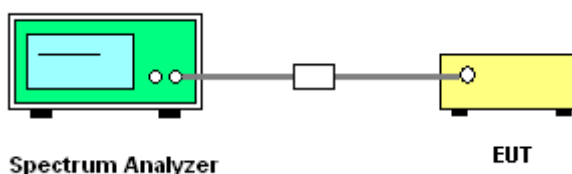
3.3.2 Measuring Instruments

See list of measuring instruments of this test report.

3.3.3 Test Procedures

1. The testing follows Measurement Procedure 9.1 Option 1 of FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v02
2. The RF output of EUT was connected to the spectrum analyzer by a low loss cable. 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. Record the measurement data derived from spectrum analyzer.

3.3.4 Test Setup



3.3.5 Test Result of Power Spectral Density

Test Mode :	802.11b	Temperature :	24~26℃
Test Engineer :	Filex Song and Book Lin	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	7.45	-5.69	8	Pass
06	2437	8.57	-3.52	8	Pass
11	2462	9.33	-2.97	8	Pass

Test Mode :	802.11g	Temperature :	24~26℃
Test Engineer :	Filex Song and Book Lin	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	-0.39	-14.18	8	Pass
06	2437	1.35	-12.03	8	Pass
11	2462	0.95	-12.70	8	Pass

Test Mode :	802.11n HT20	Temperature :	24~26℃
Test Engineer :	Filex Song and Book Lin	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	-1.77	-14.91	8	Pass
06	2437	-1.70	-16.35	8	Pass
11	2462	-0.92	-14.82	8	Pass

Test Mode :	802.11n HT40	Temperature :	24~26°C
Test Engineer :	Filex Song and Book Lin	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	-4.56	-18.60	8	Pass
06	2437	-4.90	-17.58	8	Pass
09	2452	-3.98	-17.94	8	Pass

Test Mode :	802.11a	Temperature :	24~26°C
Test Engineer :	Filex Song and Book Lin	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	-0.88	-14.82	8	Pass
157	5785	-0.62	-15.30	8	Pass
165	5825	-0.20	-13.31	8	Pass

Test Mode :	802.11n HT20	Temperature :	24~26°C
Test Engineer :	Filex Song and Book Lin	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	-0.85	-15.15	8	Pass
157	5785	-1.42	-15.85	8	Pass
165	5825	-0.84	-14.97	8	Pass

Test Mode :	802.11n HT40	Temperature :	24~26°C
Test Engineer :	Filex Song and Book Lin	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	-4.20	-18.31	8	Pass
159	5795	-4.59	-18.17	8	Pass

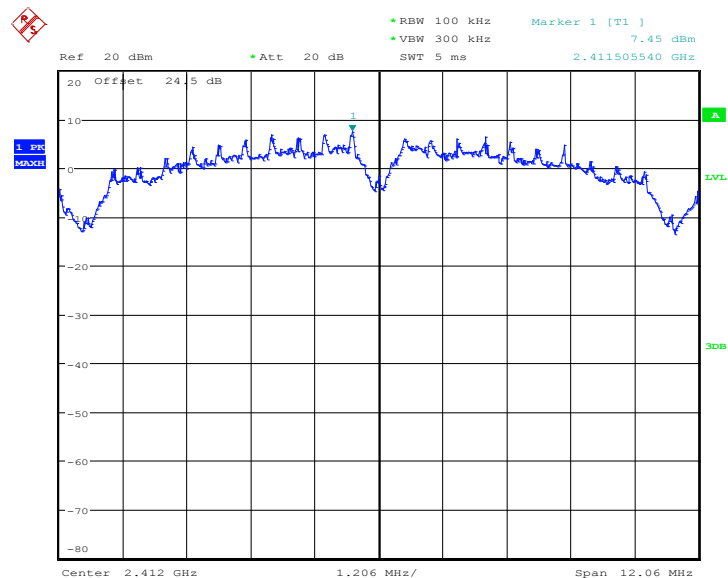
Note:

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)

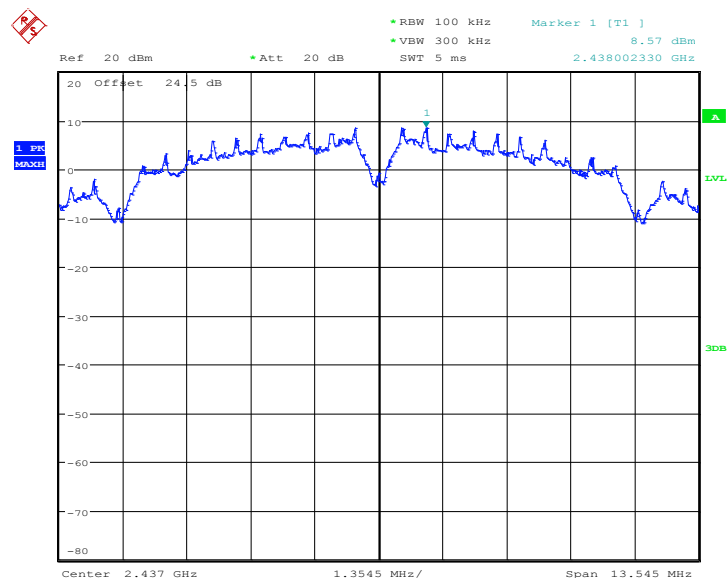
PSD 100kHz Plot on 802.11b Channel 01



291928-1023 15C PSD (100K) 802.11b 2412 (ch01)

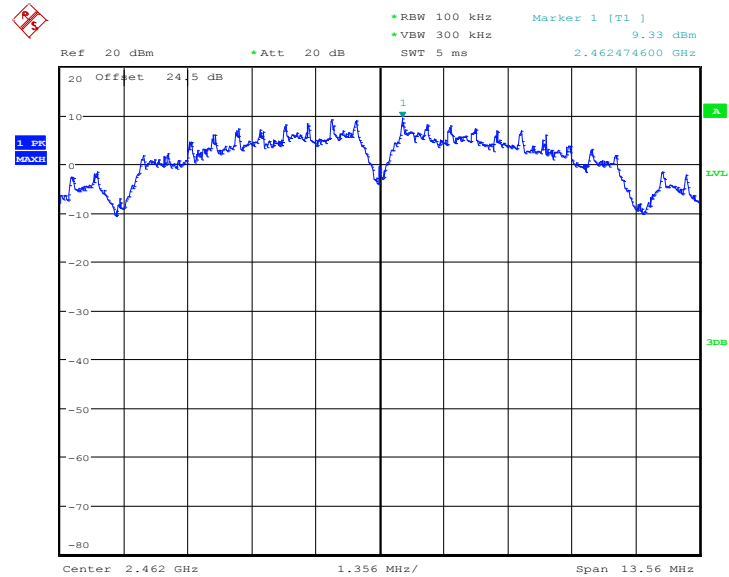
Date: 23.OCT.2012 17:43:28

PSD 100kHz Plot on 802.11b Channel 06

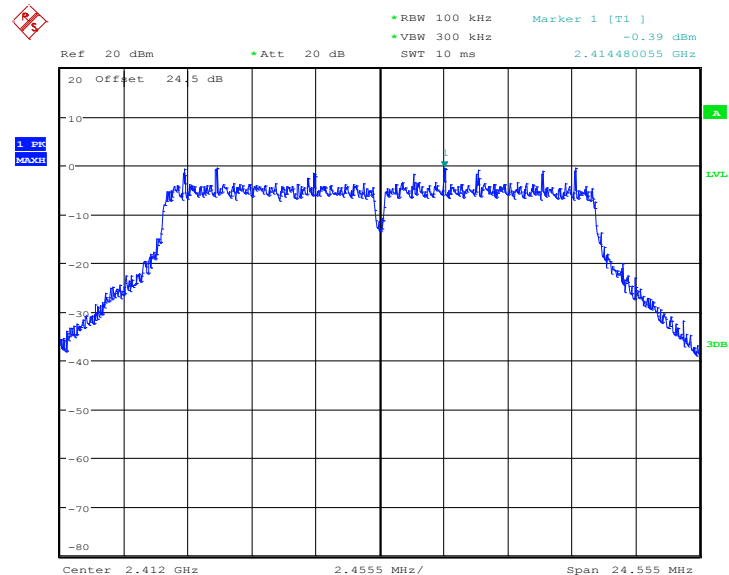


291928-1023 15C PSD (100K) 802.11b 2437 (ch06)

Date: 23.OCT.2012 17:46:58

PSD 100kHz Plot on 802.11b Channel 11


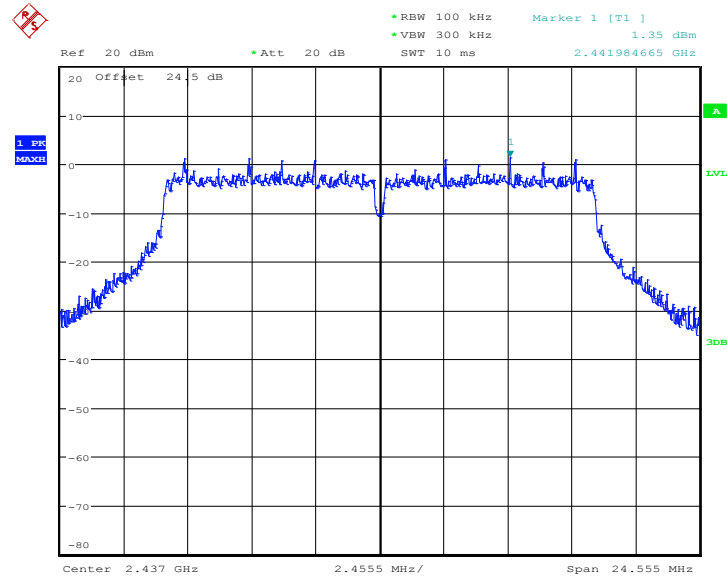
291928-1023 15C PSD (100K) 802.11b 2462 (ch11)
 Date: 23.OCT.2012 17:50:14

PSD 100kHz Plot on 802.11g Channel 01


291928-1023 15C PSD (100K) 802.11g 2412 (ch01)
 Date: 23.OCT.2012 17:53:58

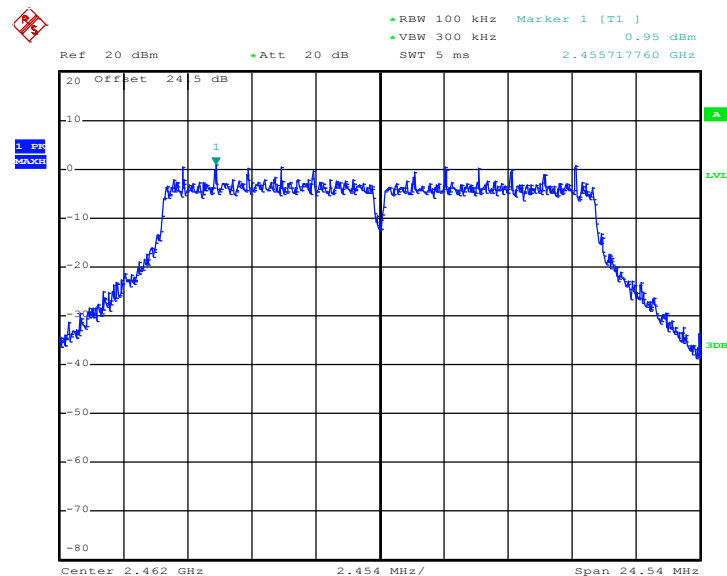


PSD 100kHz Plot 802.11g Channel 06

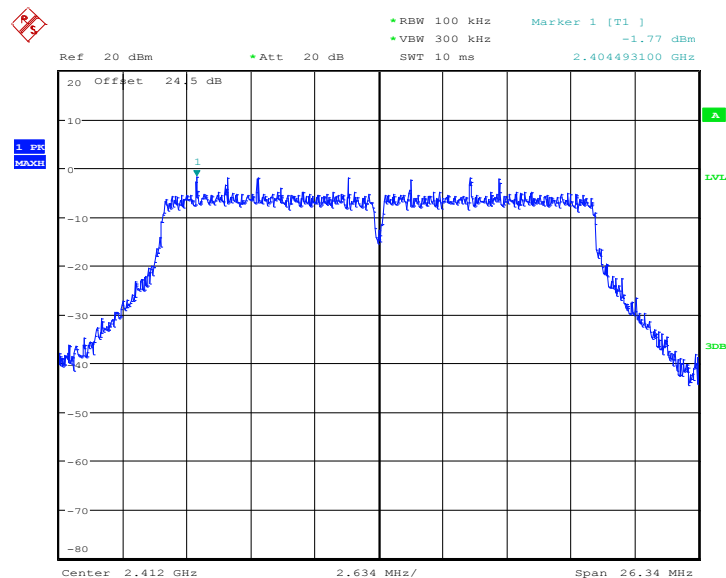


291928-1023 15C PSD (100K) 802.11g 2437 (ch06)
Date: 23.OCT.2012 17:57:39

PSD 100kHz Plot 802.11g Channel 11

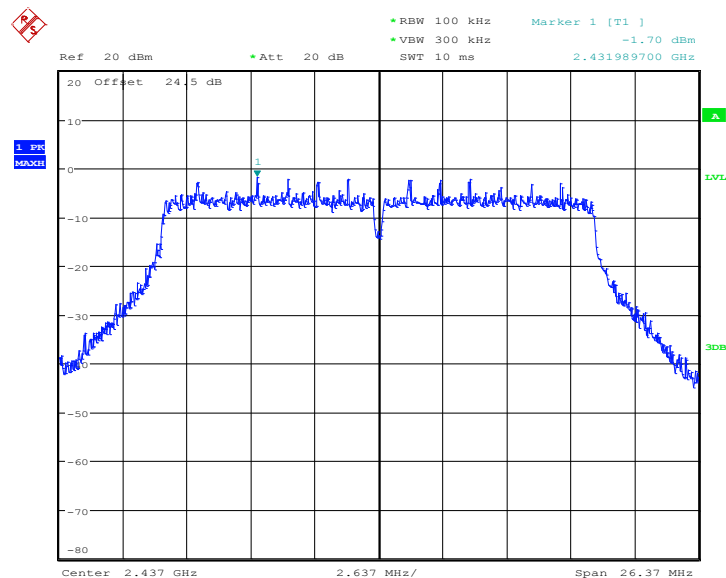


291928-1025 15C PSD (100K) 802.11g 2462 (ch11)
Date: 25.OCT.2012 22:35:55



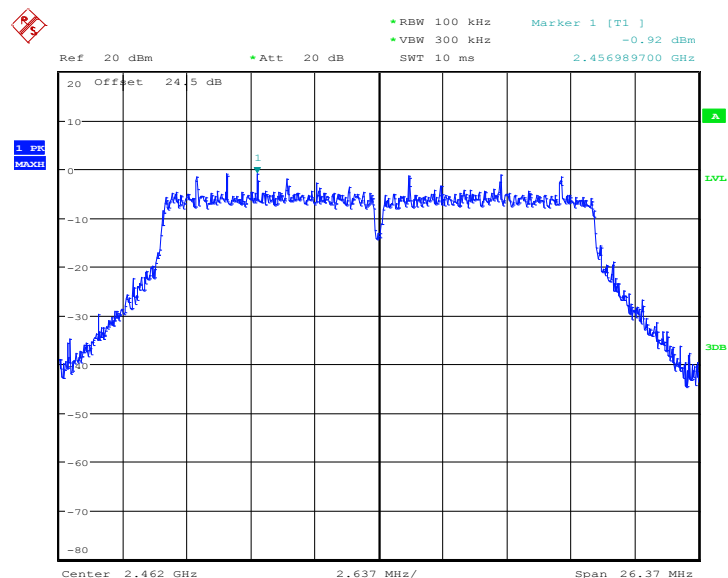
291928-1023 15C PSD (100K) 802.11g_N20 2412 (ch01)
Date: 23.OCT.2012 18:05:01

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



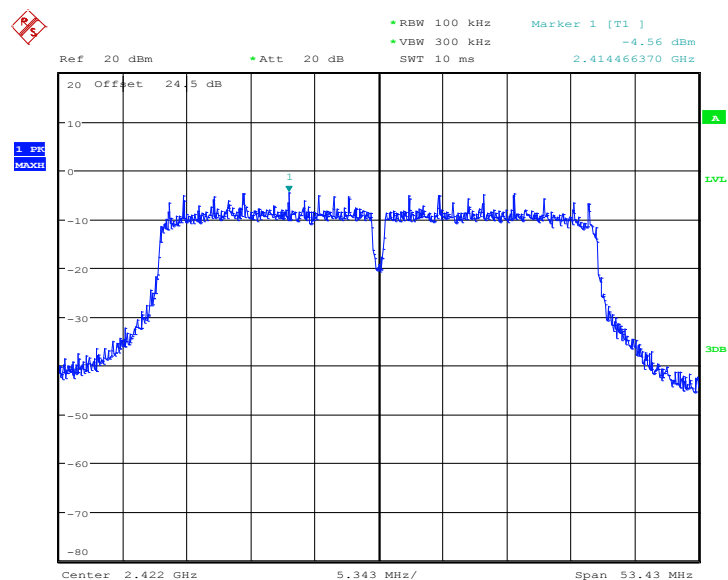
291928-1023 15C PSD (100K) 802.11g_N20 2437 (ch06)
Date: 23.OCT.2012 18:08:10

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



291928-1023 15C PSD (100K) 802.11g_N20 2462 (ch11)
Date: 23.OCT.2012 18:11:17

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



291928-1023 15C PSD (100K) 802.11g_N40 2422 (ch03)
Date: 23.OCT.2012 18:22:01



Ref 20 dBm • Att 20 dB • RBW 100 kHz Marker 1 [T1] -4.90 dBm
 • VBW 300 kHz SWT 10 ms 2.44719100 GHz

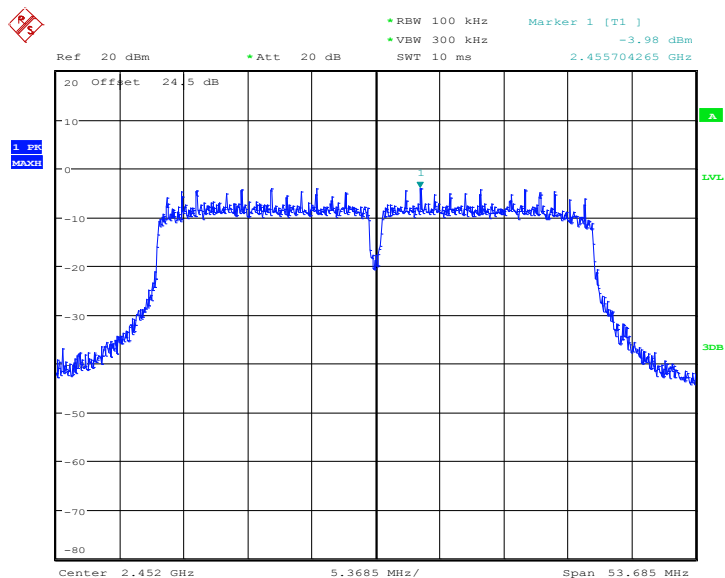
20 Offset 24.5 dB

1.56 MHz

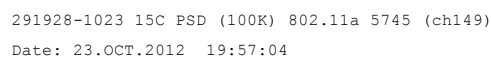
1

Center 2.437 GHz 5.313 MHz/ Span 53.13 MHz

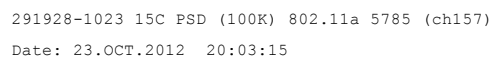
PSD 100kHz Plot on 2.4GHz 802.11n HT40 Channel 09

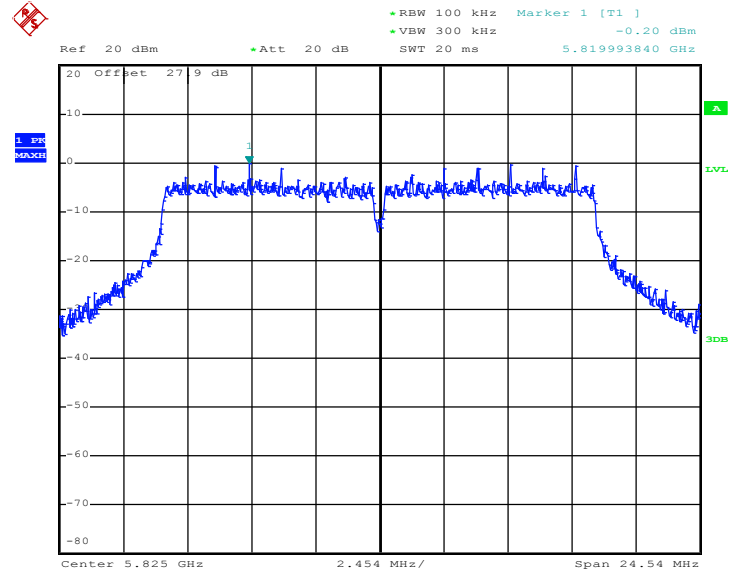


291928-1023 15C PSD (100K) 802.11g_N40 2452 (ch09)
Date: 23.OCT.2012 18:37:21



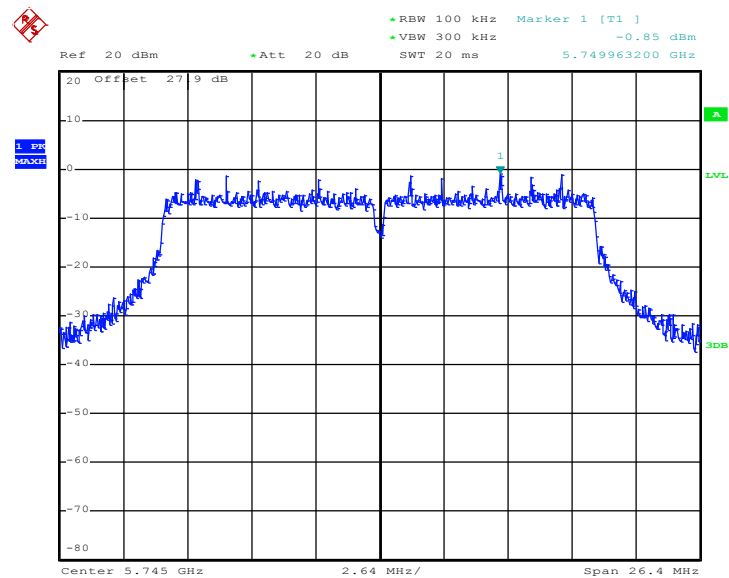
PSD 100kHz Plot on 802.11a Channel 157



PSD 100kHz Plot on 802.11a Channel 165


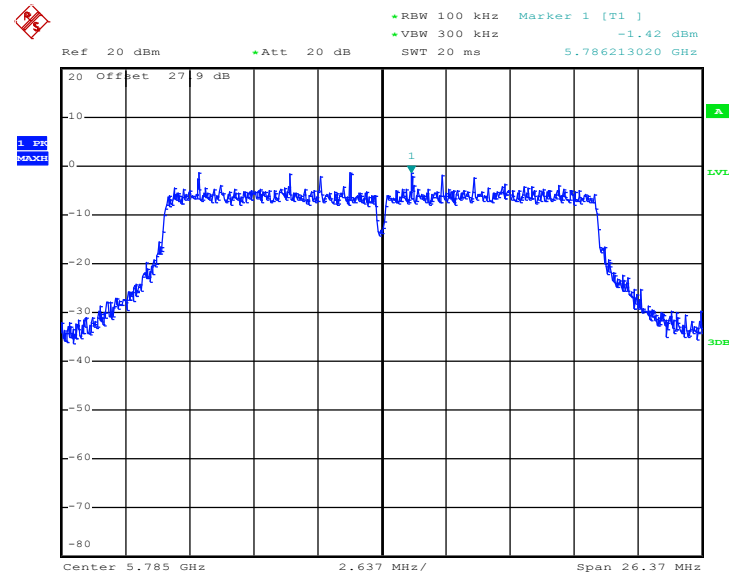
291928-1025 15C PSD (100K) 802.11a 5825 (ch165)

Date: 25.OCT.2012 22:46:04

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


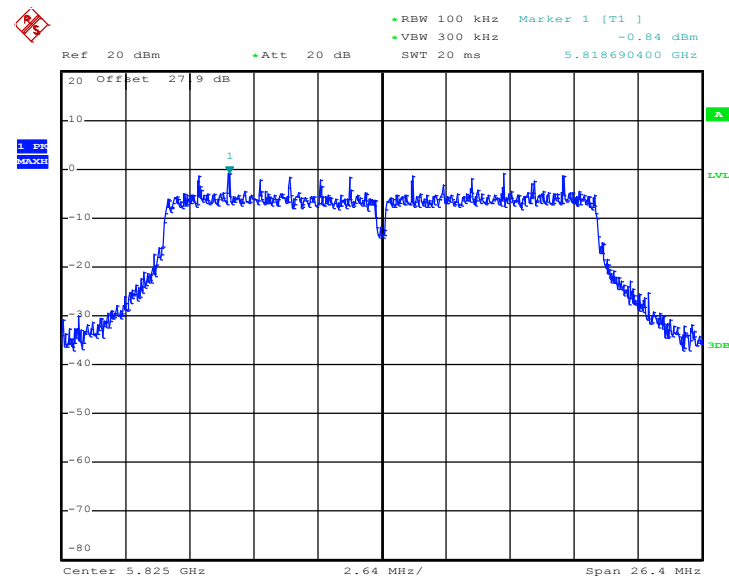
291928-1023 15C PSD (100K) 802.11a_N20 5745 (ch149)

Date: 23.OCT.2012 20:16:16

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


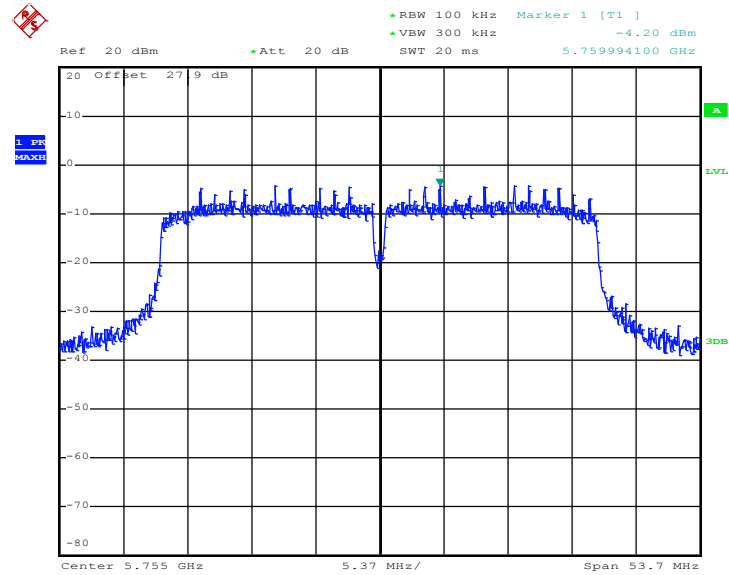
291928-1023 15C PSD (100K) 802.11a_N20 5785 (ch157)

Date: 23.OCT.2012 20:20:07

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


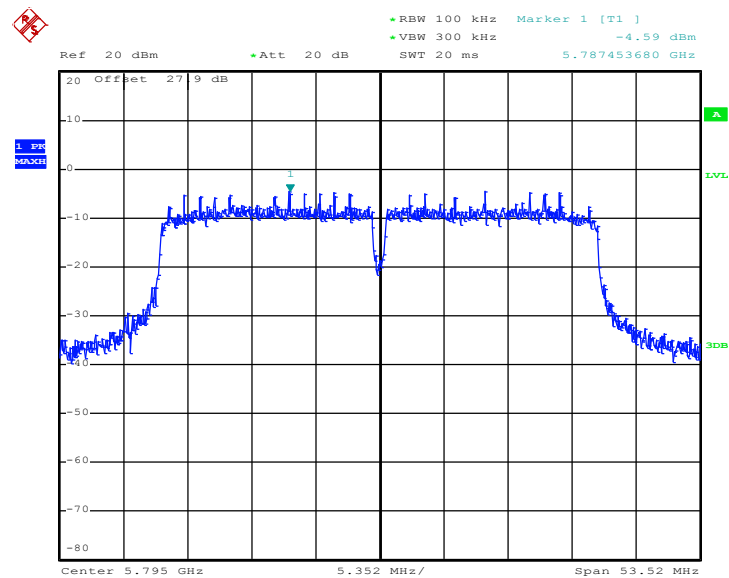
291928-1023 15C PSD (100K) 802.11a_N20 5825 (ch165)

Date: 23.OCT.2012 20:23:15

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


291928-1023 15C PSD (100K) 802.11a_N40 5755

Date: 23.OCT.2012 20:27:59

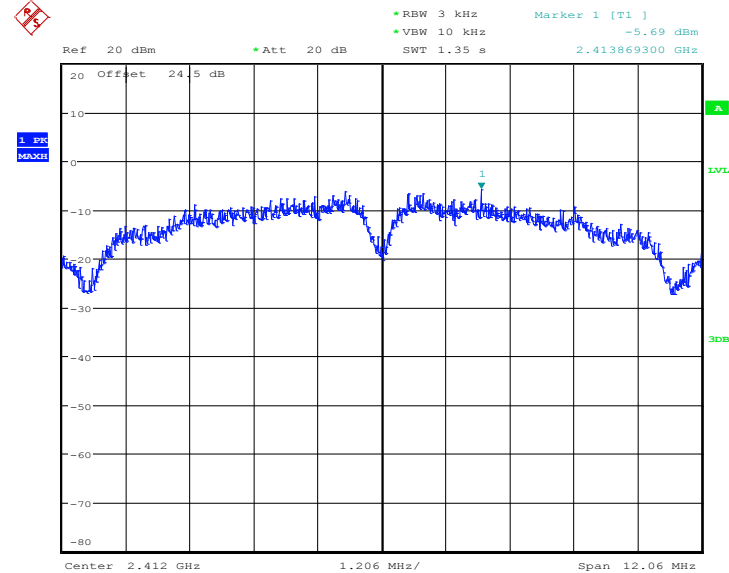
PSD 100kHz Plot on 5GHz 802.11n HT40 Channel 159


291928-1023 15C PSD (100K) 802.11a_N40 5795

Date: 23.OCT.2012 20:33:13

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

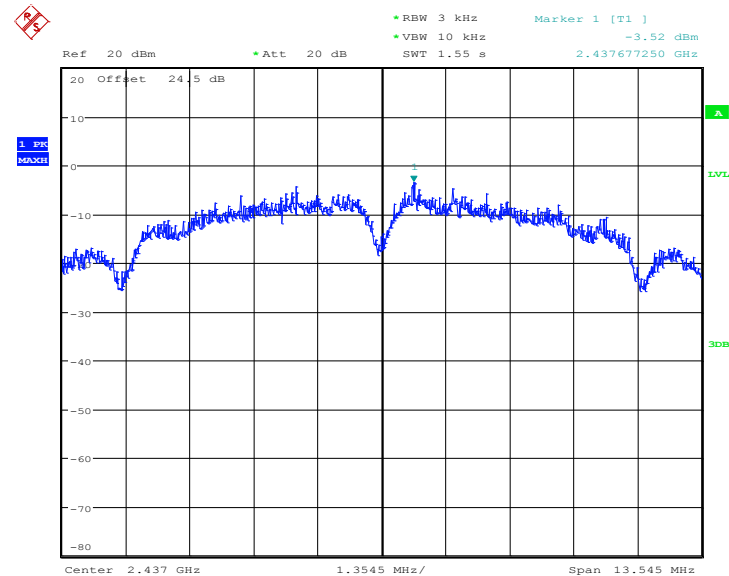
PSD 3kHz Plot on 802.11b Channel 01



291928-1023 15C PSD 802.11b 2412 (ch01)

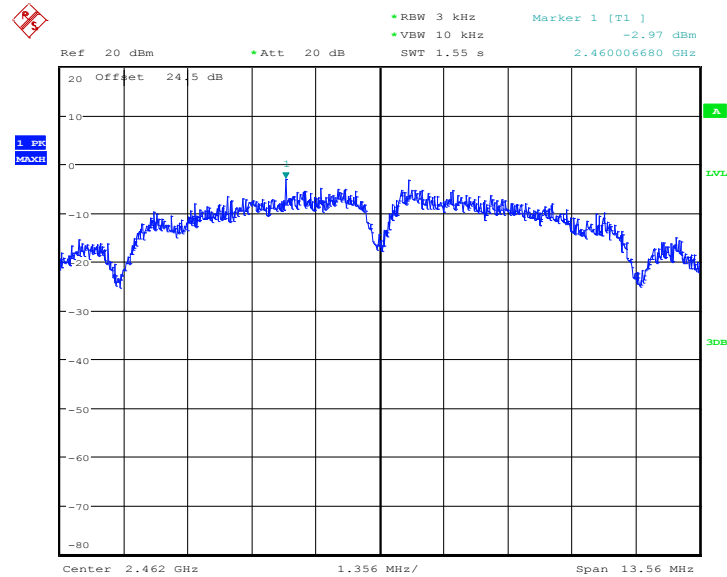
Date: 23.OCT.2012 17:43:22

PSD 3kHz Plot on 802.11b Channel 06

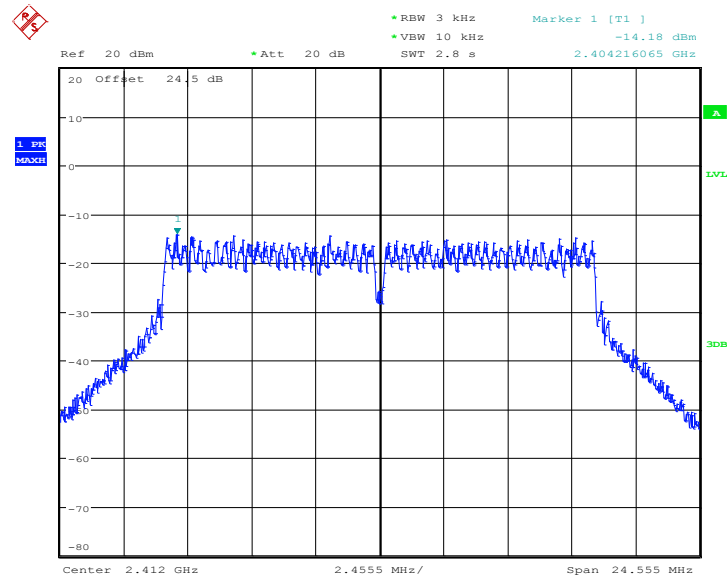


291928-1023 15C PSD 802.11b 2437 (ch06)

Date: 23.OCT.2012 17:46:50

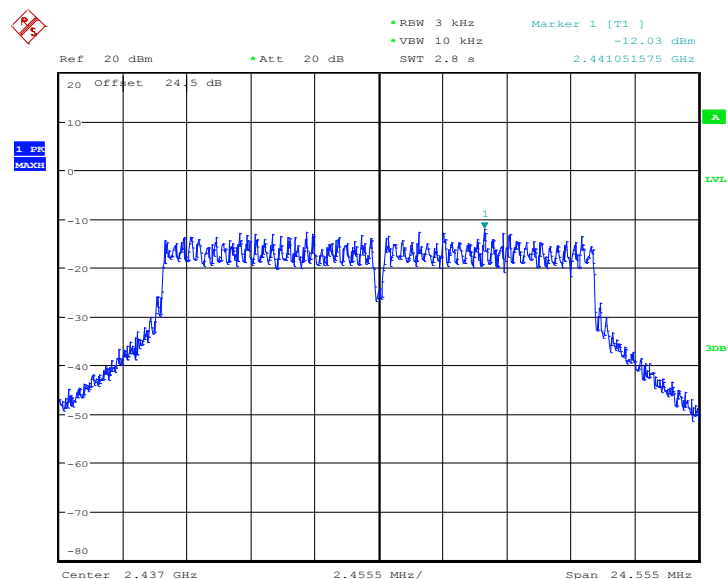
PSD 3kHz Plot on 802.11b Channel 11


291928-1023 15C PSD 802.11b 2462 (ch11)
Date: 23.OCT.2012 17:50:09

PSD 3kHz Plot on 802.11g Channel 01


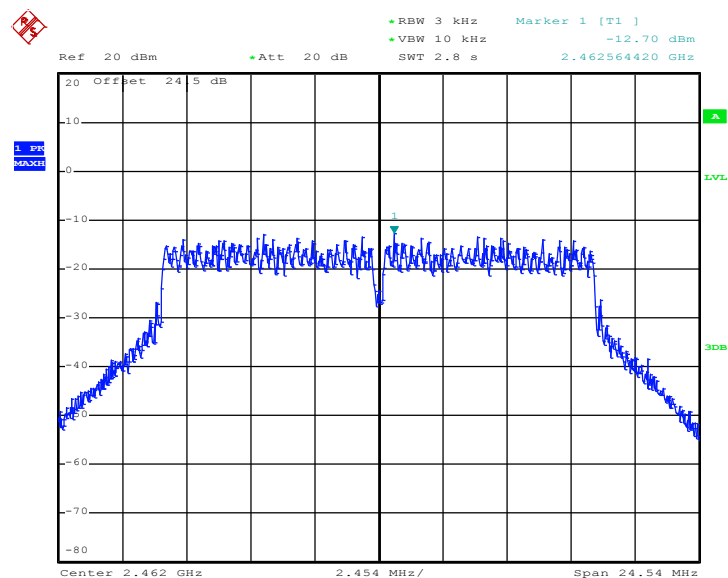
291928-1023 15C PSD 802.11g 2412 (ch01)
Date: 23.OCT.2012 17:53:53

PSD 3kHz Plot on 802.11g Channel 06

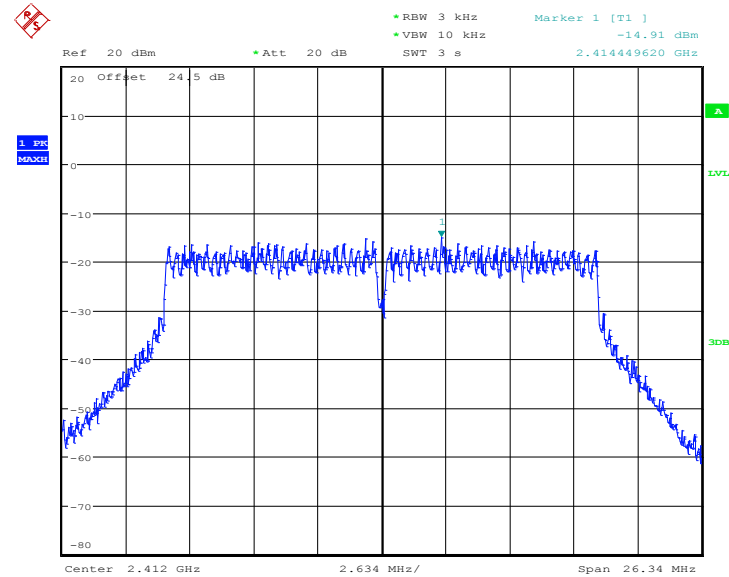


291928-1023 15C PSD 802.11g 2437 (ch06)
Date: 23.OCT.2012 17:57:29

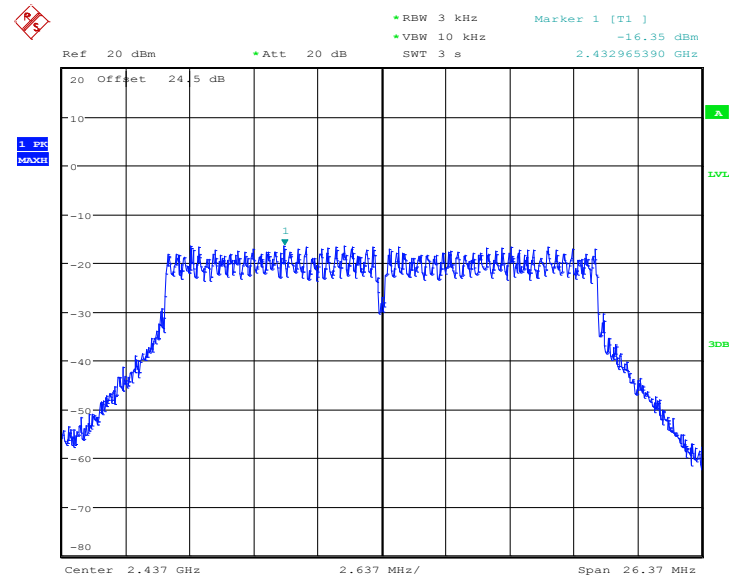
PSD 3kHz Plot on 802.11g Channel 11



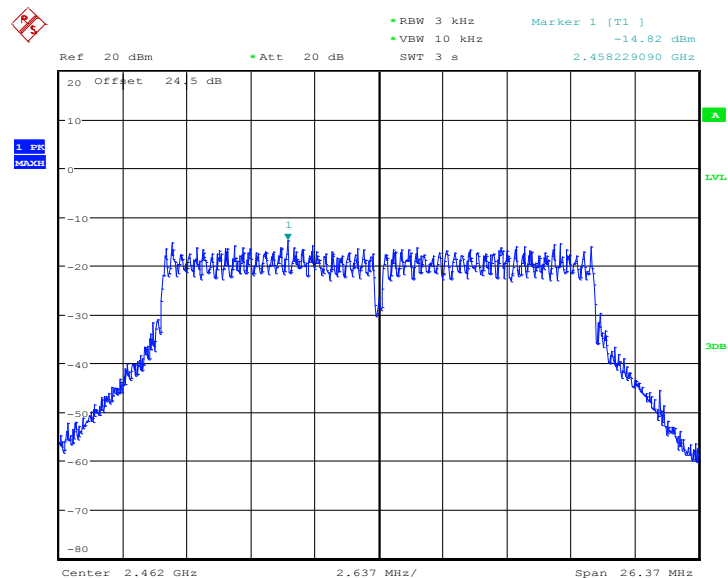
291928-1025 15C PSD 802.11g 2462 (ch11)
Date: 25.OCT.2012 22:35:49

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


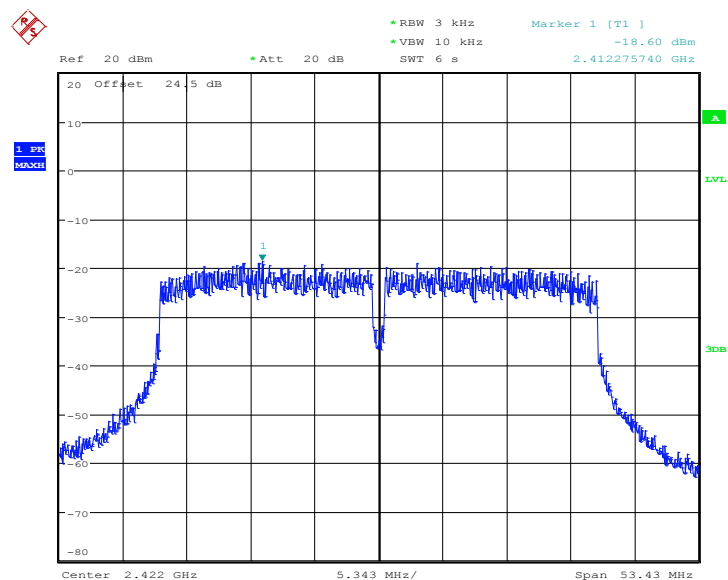
291928-1023 15C PSD 802.11g_N20 2412 (ch01)
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PSD 3kHz Plot on 2.4GHz 802.11n HT20 Channel 06


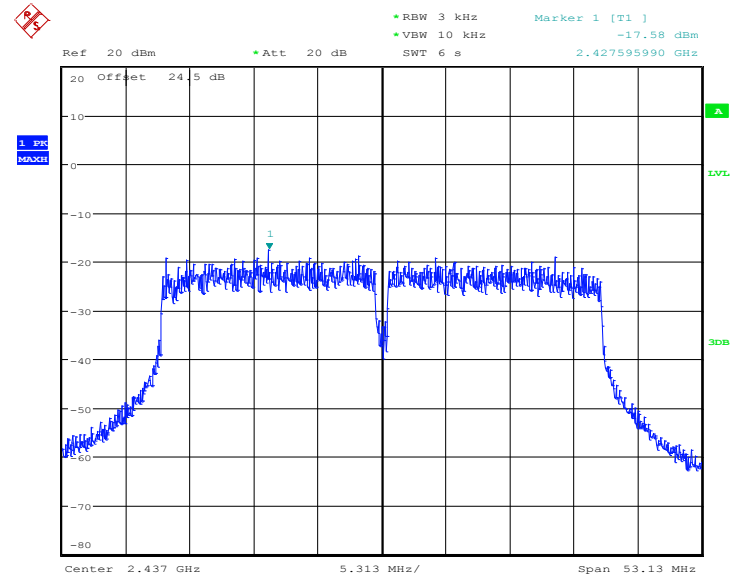
291928-1023 15C PSD 802.11g_N20 2437 (ch06)
 Date: 23.OCT.2012 18:08:02

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


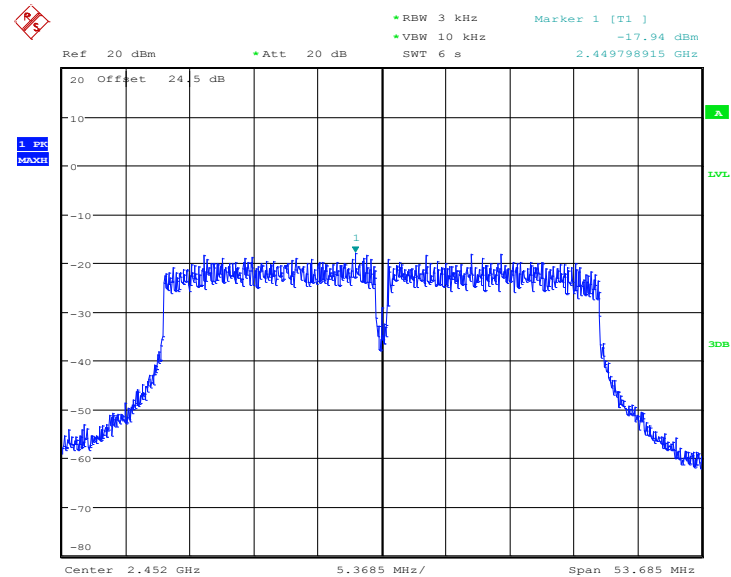
291928-1023 15C PSD 802.11g_N20 2462 (ch11)
Date: 23.OCT.2012 18:11:11

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


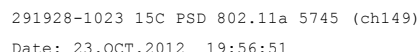
291928-1023 15C PSD 802.11g_N40 2422 (ch03)
Date: 23.OCT.2012 18:21:48

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


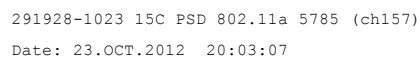
291928-1023 15C PSD 802.11g_N40 2437 (ch06)
 Date: 23.OCT.2012 18:25:52

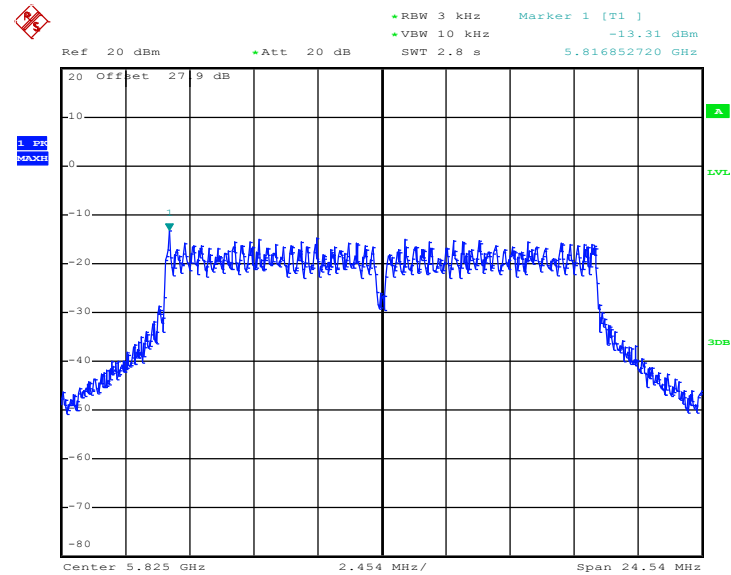
PSD 3kHz Plot on 2.4GHz 802.11n HT40 Channel 09


291928-1023 15C PSD 802.11g_N40 2452 (ch09)
 Date: 23.OCT.2012 18:37:14



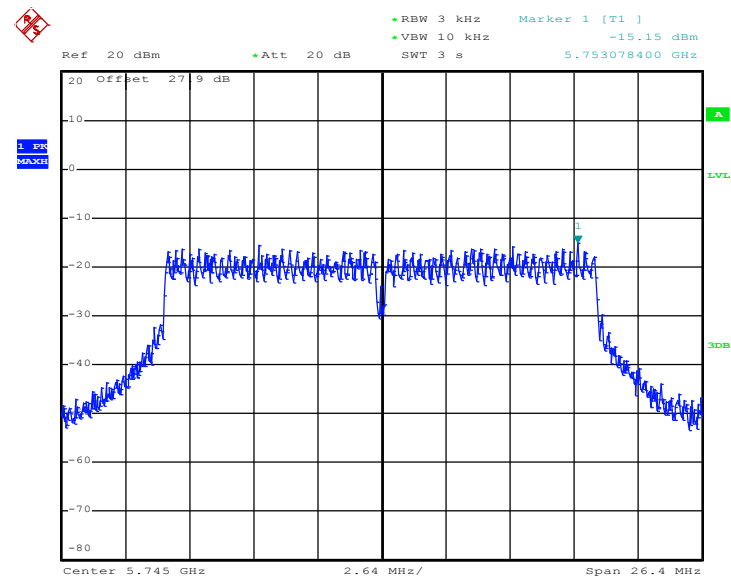
PSD 3kHz Plot on 802.11a Channel 157



PSD 3kHz Plot on 802.11a Channel 165


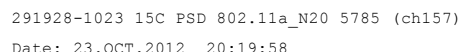
291928-1025 15C PSD 802.11a 5825 (ch165)

Date: 25.OCT.2012 22:45:58

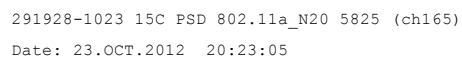
PSD 3kHz Plot on 5GHz 802.11n HT20 Channel 149


291928-1023 15C PSD 802.11a_N20 5745 (ch149)

Date: 23.OCT.2012 20:15:56



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





Ref 20 dBm Att 20 dB RBW 3 kHz VBW 10 kHz SWT 6 s Marker 1 [T1] -18.31 dBm

20 Offset 27.9 dB

1.5% MAG

Center 5.755 GHz 5.37 MHz/ Span 53.7 MHz

Date: 23.OCT.2012 20:27:37

1. 575 MHz

Ref 20 dBm Att 20 dB SWT 6 s

Marker 1 [T1] -18.17 dBm

5.783065040 GHz

20 Offset 27.9 dB

1

Center 5.795 GHz 5.352 MHz/ Span 53.52 MHz

Date: 23.OCT.2012 20:33:07

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).

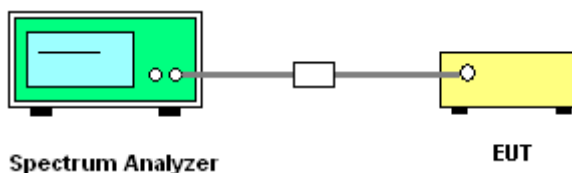
3.4.2 Measuring Instruments

See list of measuring instruments of this test report.

3.4.3 Test Procedures

1. The testing follows the Measurement Procedure of FCC KDB No. 558074 DTS D01 Meas. Guidance v02.
2. Set to the maximum power setting and enable the EUT transmit continuously.
3. 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. The attenuation is set to 30dB, when maximum conducted output power procedure is used.
4. Measure and record the results in the test report.

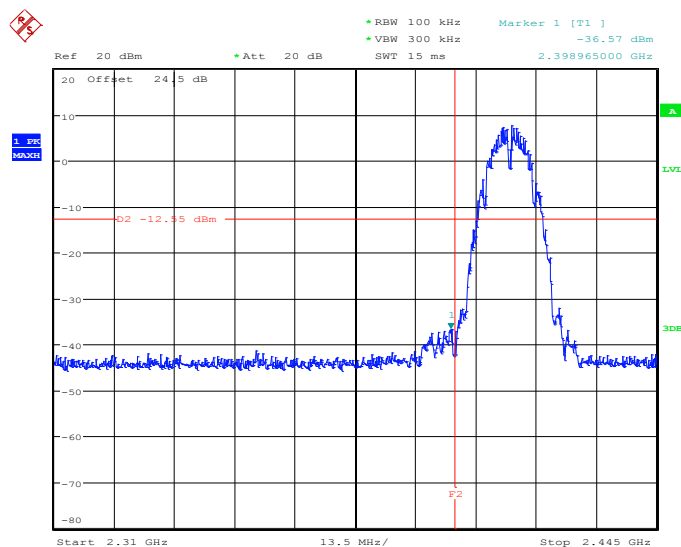
3.4.4 Test Setup



3.4.6 Test Result of Conducted Spurious at Band Edges

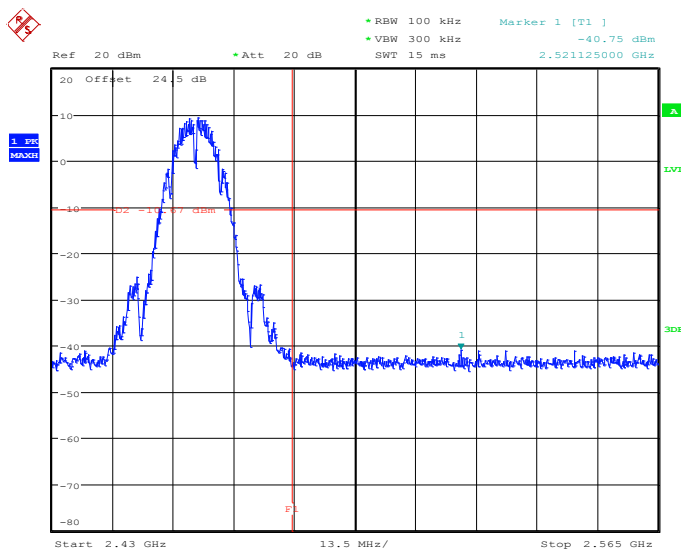
Test Mode :	802.11b	Temperature :	24~26°C
Test Band :	Low and High	Relative Humidity :	50~53%
Test Channel :	01 and 11	Test Engineer :	Filex Song and Book Lin

Low Band Edge Plot on 802.11b Channel 01



291928-1023 15C BandEdge 802.11b 2412 (ch01)
Date: 23.OCT.2012 17:43:50

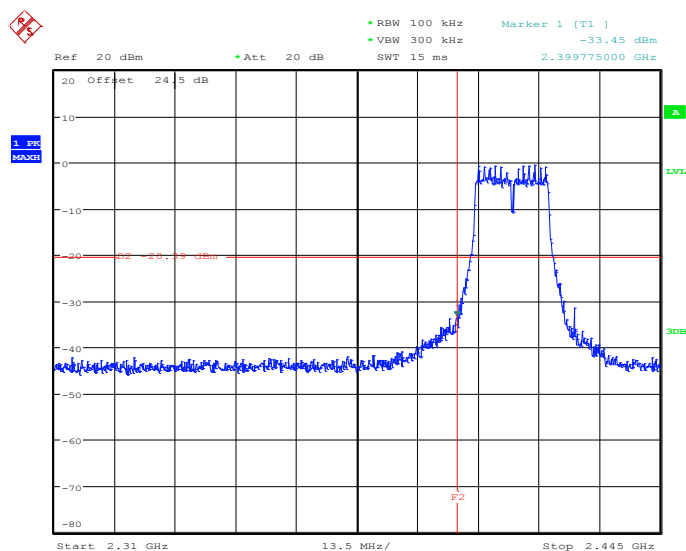
High Band Edge Plot on 802.11b Channel 11



291928-1023 15C BandEdge 802.11b 2462 (ch11)
Date: 23.OCT.2012 17:50:32

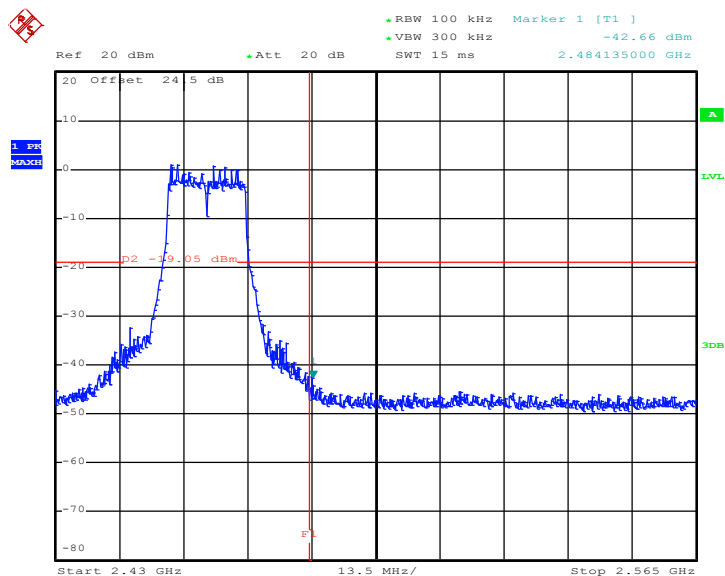
Test Mode :	802.11g	Temperature :	24~26℃
Test Band :	Low and High	Relative Humidity :	50~53%
Test Channel :	01 and 11	Test Engineer :	Filex Song and Book Lin

Low Band Edge Plot on 802.11g Channel 01



291928-1023 15C BandEdge 802.11g 2412 (ch01)
Date: 23_OCT_2012 17:54:13

High Band Edge Plot on 802.11g Channel 11

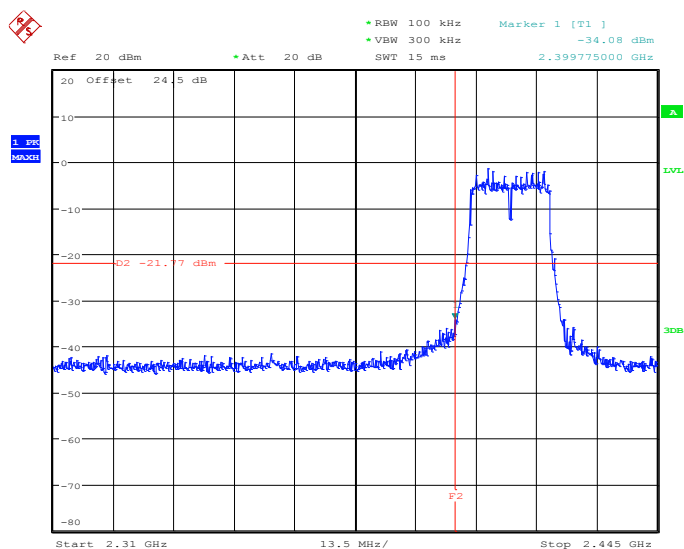


291928-1025 15C BandEdge 802.11g 2462 (ch11)
Date: 25.OCT.2012 22:36:13



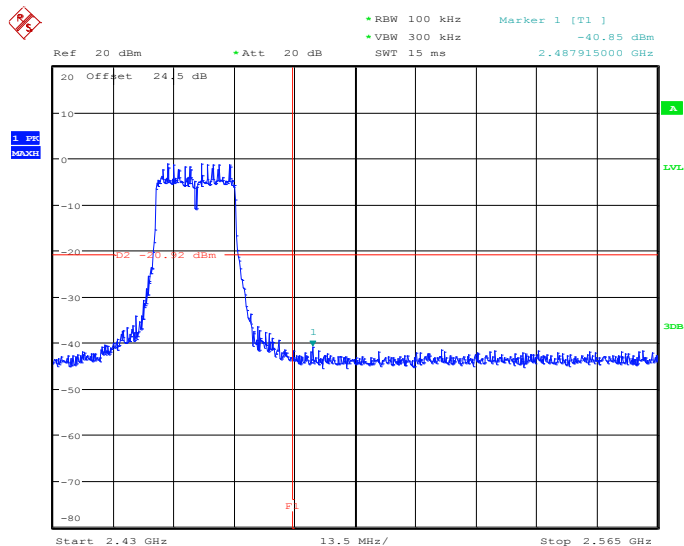
Test Mode :	802.11n HT20	Temperature :	24~26°C
Test Band :	Low and High	Relative Humidity :	50~53%
Test Channel :	01 and 11	Test Engineer :	Filex Song and Book Lin

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



291928-1023 15C BandEdge 802.11g_N20 2412 (ch01)
Date: 23.OCT.2012 18:05:32

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

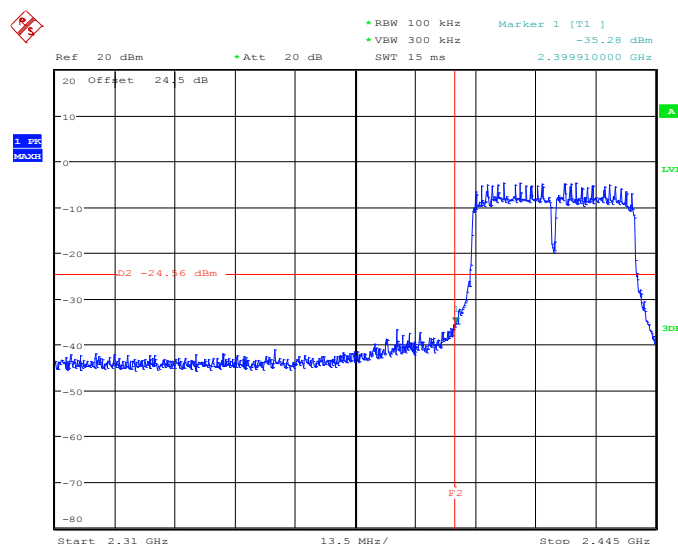


291928-1023 15C BandEdge 802.11g_N20 2462 (ch11)
Date: 23.OCT.2012 18:11:37



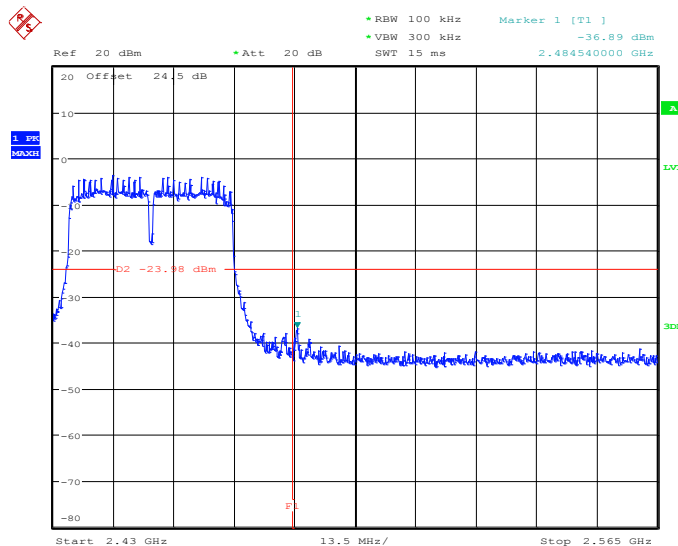
Test Mode :	802.11n HT40	Temperature :	24~26°C
Test Band :	Low and High	Relative Humidity :	50~53%
Test Channel :	03 and 09	Test Engineer :	Filex Song and Book Lin

Low Band Edge Plot on 2.4GHz 802.11n HT40 Channel 01



291928-1023 15C BandEdge 802.11g_N40 2422 (ch03)
Date: 23.OCT.2012 18:22:52

High Band Edge Plot on 2.4GHz 802.11n HT40 Channel 11



291928-1023 15C BandEdge 802.11g_N40 2452 (ch09)
Date: 23.OCT.2012 18:37:35



Low Band Edge Plot on 802.11a Channel 149



High Band Edge Plot on 802.11a Channel 165





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

• RBW 100 kHz Marker 1 [T1] -35.21 dBm
 • VBW 300 kHz
 SWT 20 ms 5.72500000 GHz

Ref 20 dBm • Att 20 dB

20 Offset 27.9 dB
 -10
 0
 -10
 -20
 -30
 -40
 -50
 -60
 -70
 -80

Start 5.675 GHz 10 MHz/ Stop 5.775 GHz

1. P1
 MA3CH

P2 -25.52 dBm
 P2

A
 LV1
 3DB

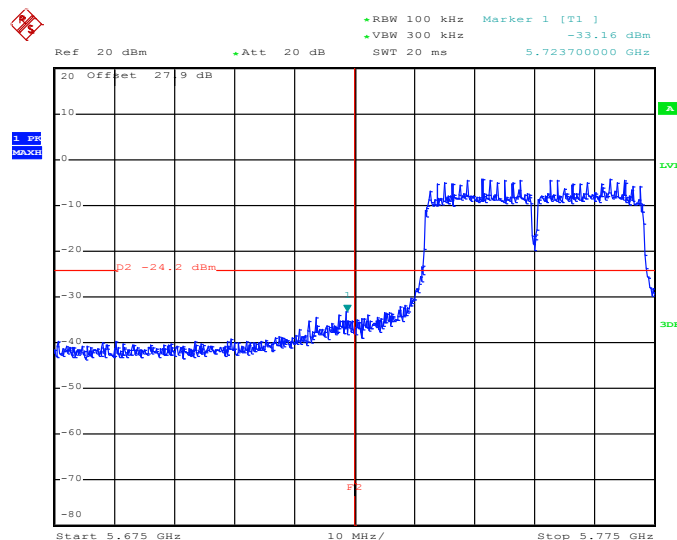
Date: 23 OCT 2012 20:16:46

[illegible]

Date: 23.OCT.2012 20:23:36

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

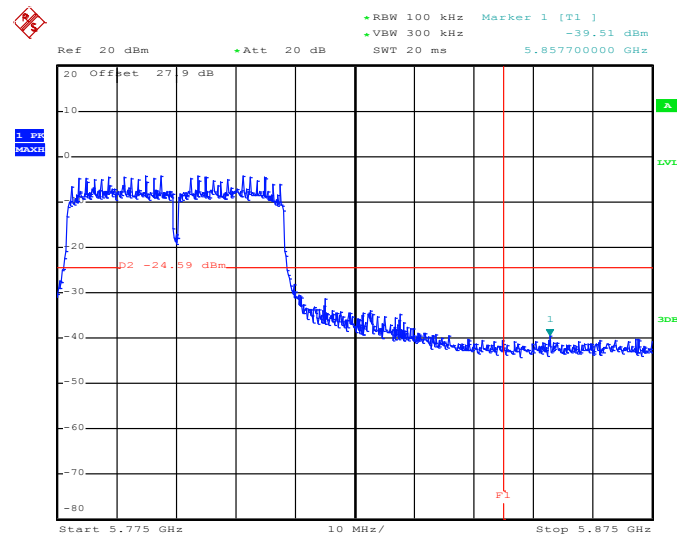
Low Band Edge Plot on 5GHz 802.11n HT40 Channel 151



291928-1023 15C BandEdge 802.11a N40 5755

Date: 23.OCT.2012 20:28:23

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



291928-1023 15C BandEdge 802.11a N40 5795

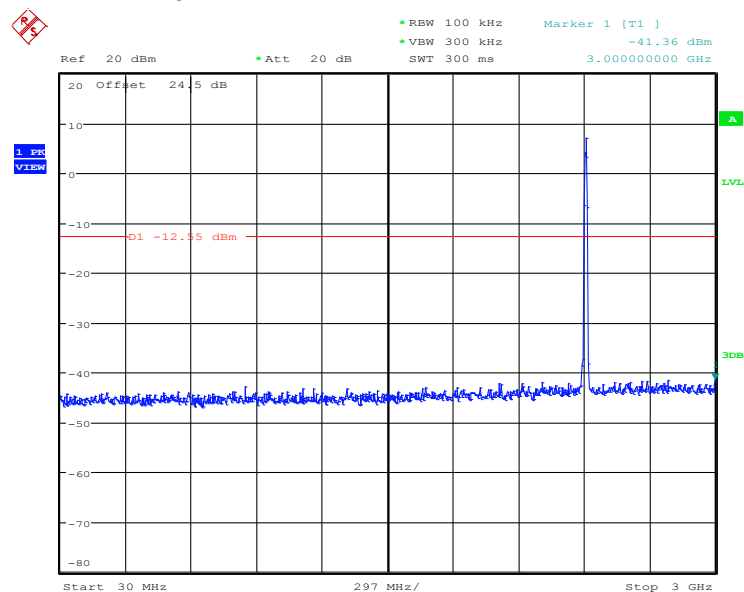
Date: 23.OCT.2012 20:33:31

3.4.7 Test Result of Conducted Spurious Emission

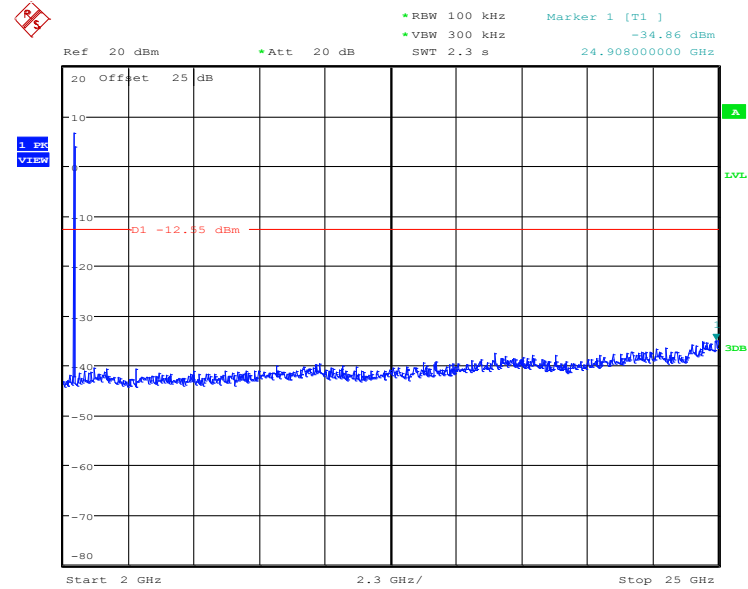
Test Mode :	802.11b	Temperature :	24~26°C
Test Band :	30MHz-3GHz and 2G-25GHz	Relative Humidity :	50~53%
Test Channel :	01, 06, 11	Test Engineer :	Filex Song and Book Lin

802.11b 30 MHz~3 GHz

Conducted Spurious Emission Plot on Channel 01

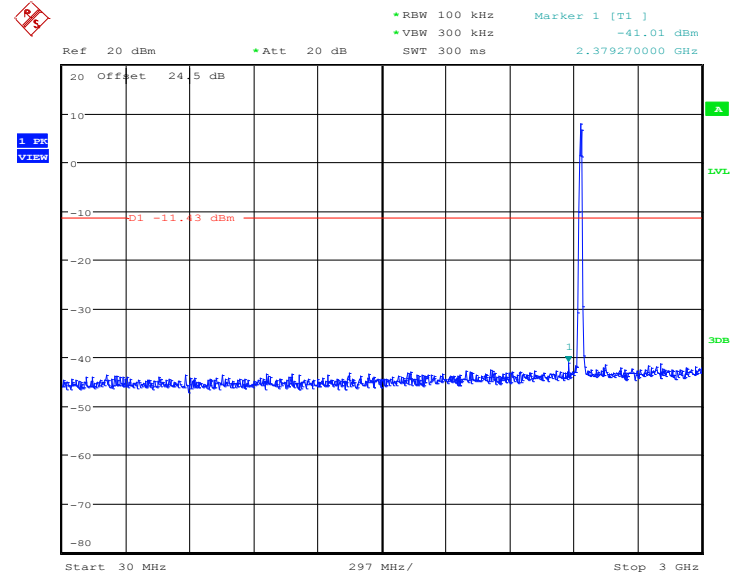


291928-1023 15C Spurious 802.11b 2412 (ch01)
Date: 23.OCT.2012 17:44:15

802.11b 2 GHz~25 GHz
Conducted Spurious Emission Plot on Channel 01


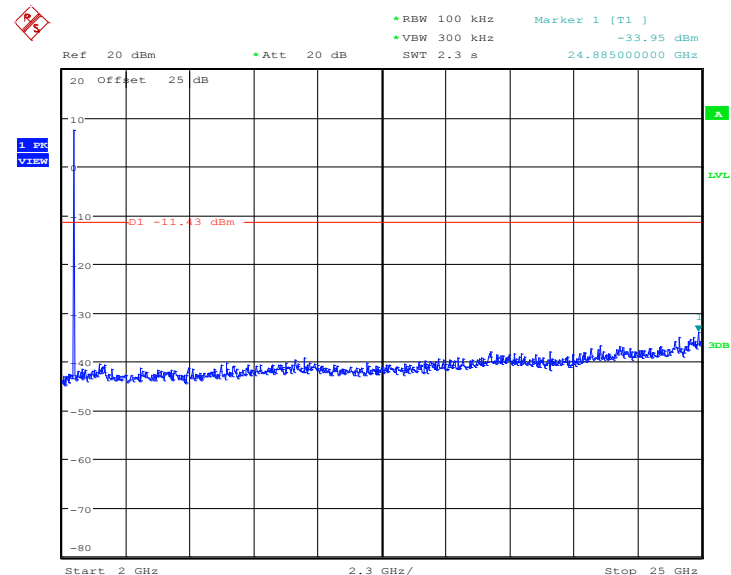
291928-1023 15C Spurious 802.11b 2412 (ch01)

Date: 23.OCT.2012 17:44:32

802.11b 30 MHz~3 GHz
Conducted Spurious Emission Plot on Channel 06


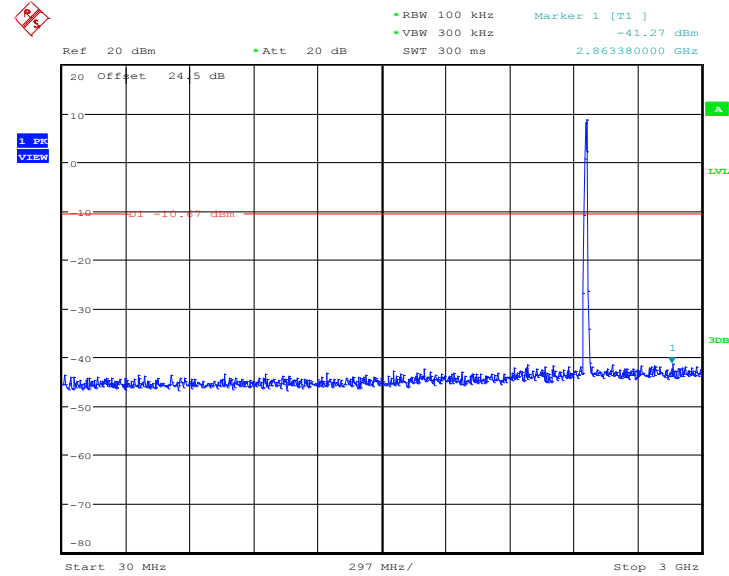
291928-1023 15C Spurious 802.11b 2437 (ch06)

Date: 23.OCT.2012 17:47:25

802.11b 2 GHz~25 GHz
Conducted Spurious Emission Plot on Channel 06


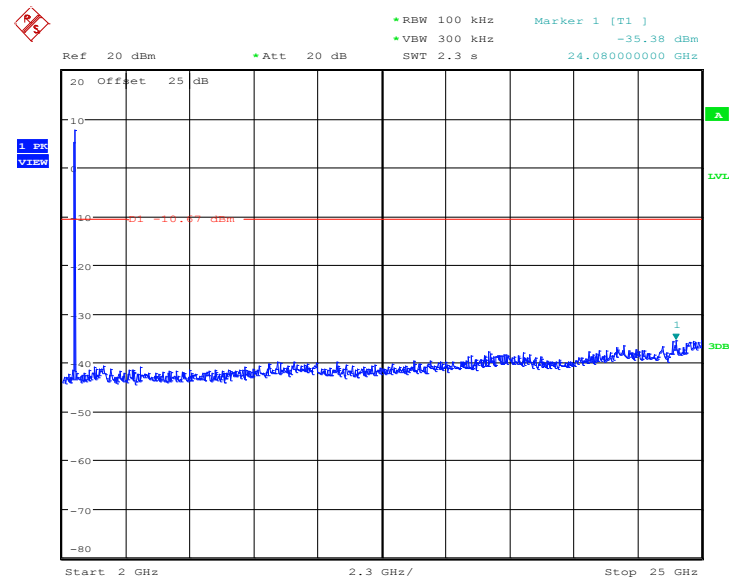
291928-1023 15C Spurious 802.11b 2437 (ch06)

Date: 23.OCT.2012 17:47:42

802.11b 30 MHz~3 GHz
Conducted Spurious Emission Plot on Channel 11


291928-1023 15C Spurious 802.11b 2462 (ch11)

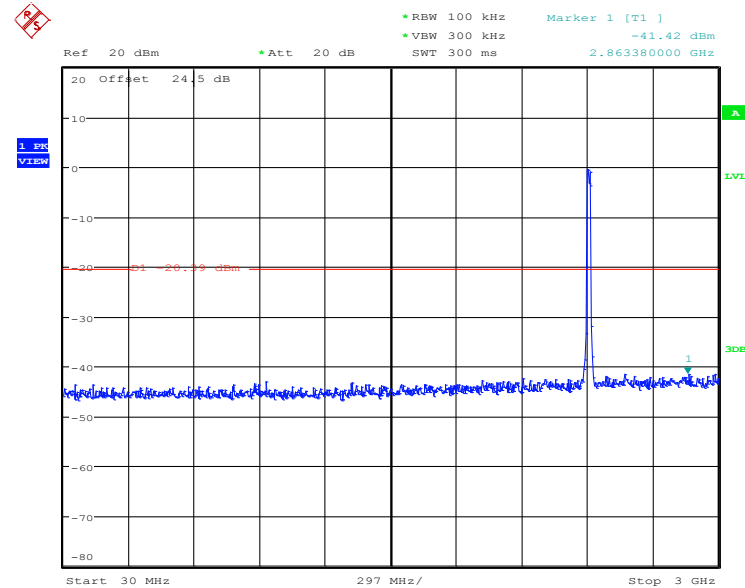
Date: 23.OCT.2012 17:50:51

802.11b 2 GHz~25 GHz
Conducted Spurious Emission Plot on Channel 11


291928-1023 15C Spurious 802.11b 2462 (ch11)

Date: 23.OCT.2012 17:51:08

Test Mode :	802.11g	Temperature :	24~26°C
Test Band :	30MHz-3GHz and 2G-25GHz	Relative Humidity :	50~53%
Test Channel :	01, 06, 11	Test Engineer :	Filex Song and Book Lin

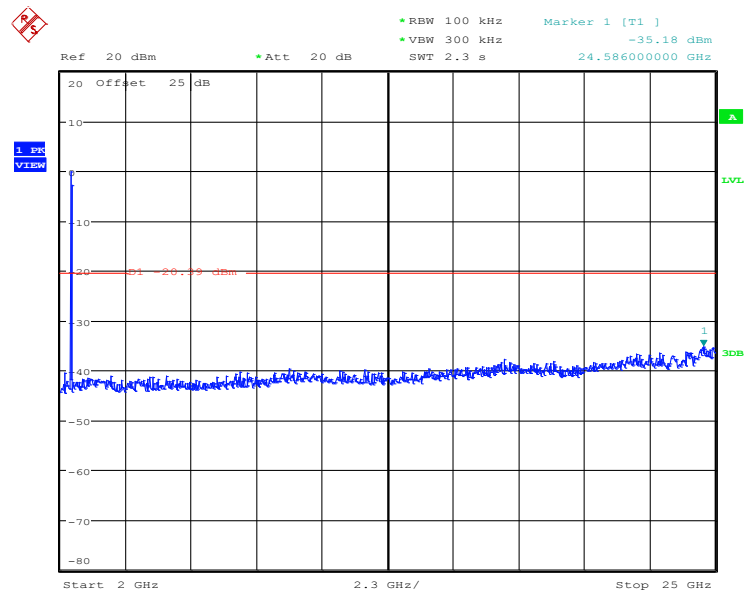
802.11g 30 MHz~3 GHz
Conducted Spurious Emission Plot on Channel 01


291928-1023 15C Spurious 802.11g 2412 (ch01)
Date: 23.OCT.2012 17:54:36

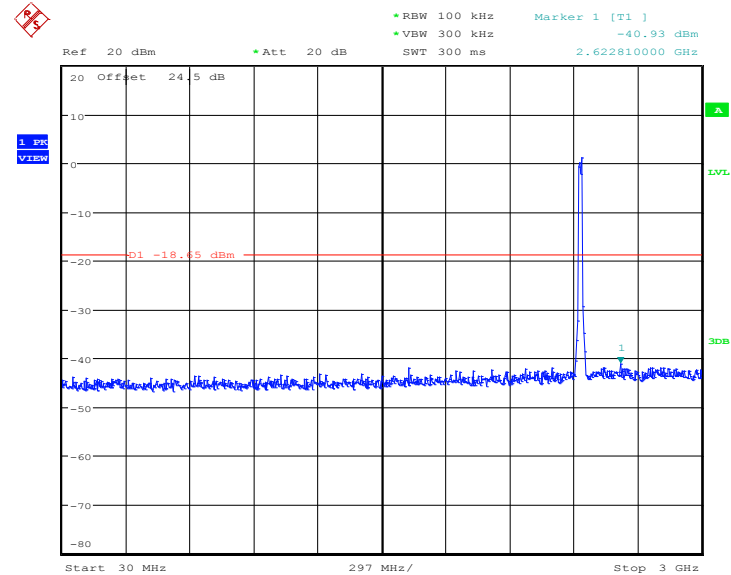


802.11g 2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 01

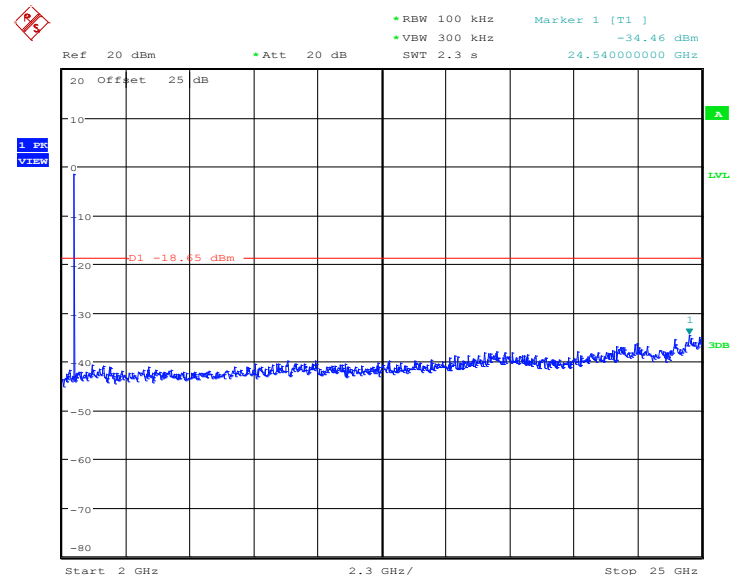


291928-1023 15C Spurious 802.11g 2412 (ch01)
Date: 23.OCT.2012 17:54:53

802.11g 30 MHz~3 GHz
Conducted Spurious Emission Plot on Channel 06


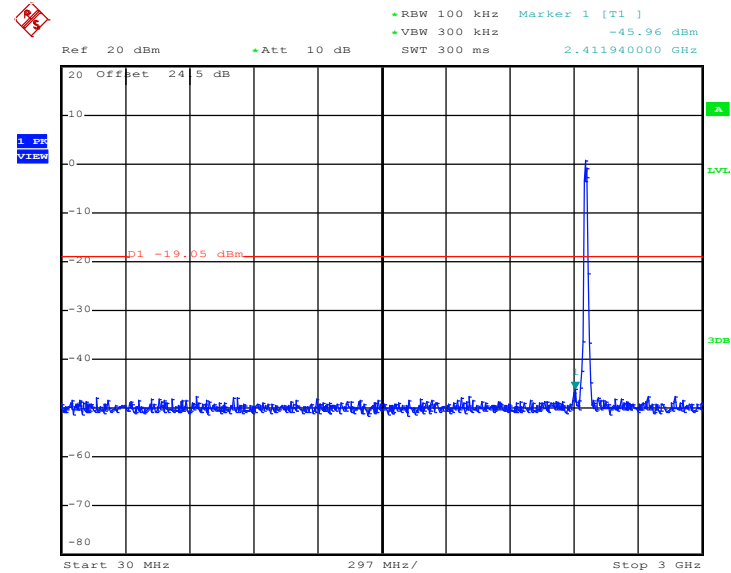
291928-1023 15C Spurious 802.11g 2437 (ch06)

Date: 23.OCT.2012 17:58:00

802.11g 2 GHz~25 GHz
Conducted Spurious Emission Plot on Channel 06


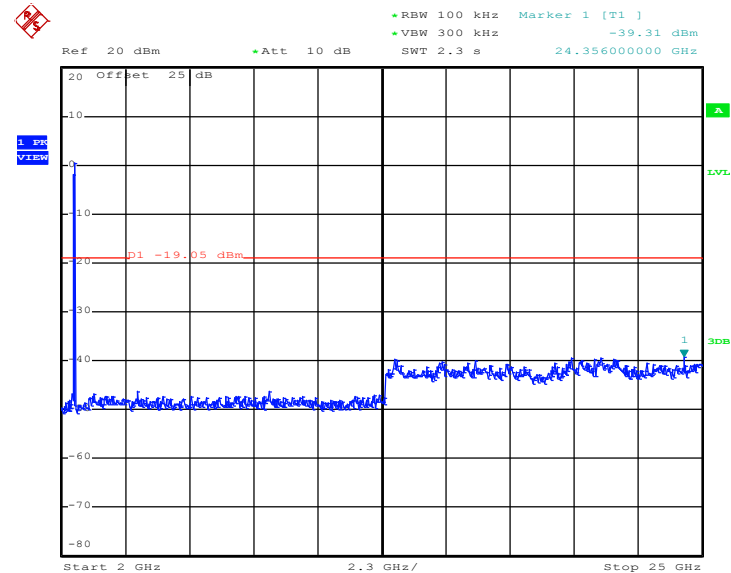
291928-1023 15C Spurious 802.11g 2437 (ch06)

Date: 23.OCT.2012 17:58:17

802.11g 30 MHz~3 GHz
Conducted Spurious Emission Plot on Channel 11


291928-1025 15C Spurious 802.11g 2462 (ch11)

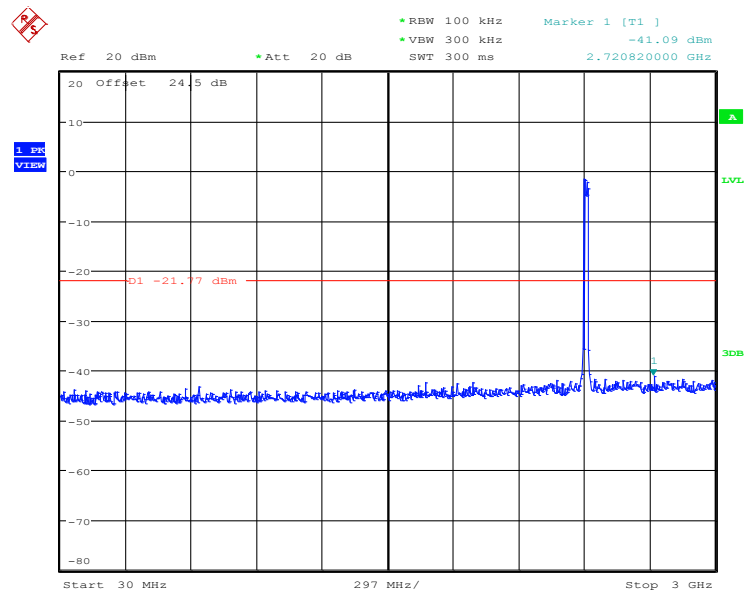
Date: 25.OCT.2012 22:37:57

802.11g 2 GHz~25 GHz
Conducted Spurious Emission Plot on Channel 11


291928-1025 15C Spurious 802.11g 2462 (ch11)

Date: 25.OCT.2012 22:38:15

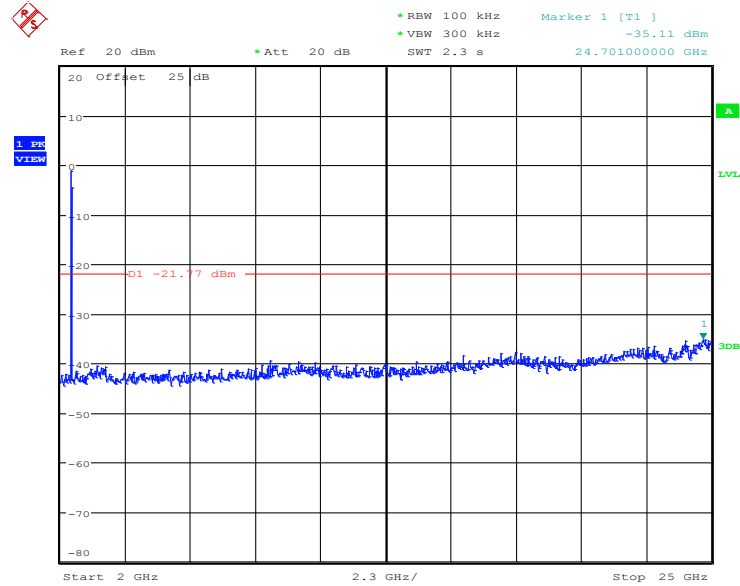
Test Mode :	802.11n HT20	Temperature :	24~26°C
Test Band :	30MHz-3GHz and 2G-25GHz	Relative Humidity :	50~53%
Test Channel :	01, 06, 11	Test Engineer :	Filex Song and Book Lin

2.4GHz 802.11n HT20 30 MHz~3 GHz
Conducted Spurious Emission Plot on Channel 01


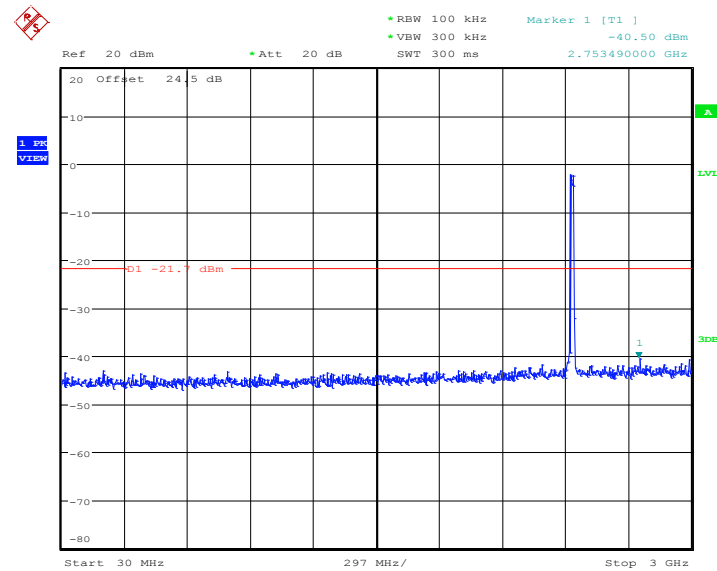
291928-1023 15C Spurious 802.11g_N20 2412 (ch01)
Date: 23.OCT.2012 18:05:52

2.4GHz 802.11n HT20 2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 01

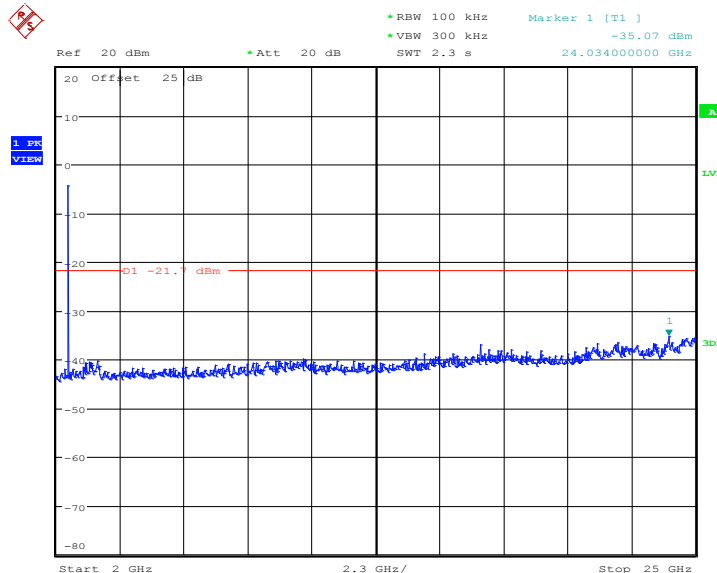


291928-1023 15C Spurious 802.11g_N20 2412 (ch01)
Date: 23.OCT.2012 18:06:09

2.4GHz 802.11n HT20 30 MHz~3 GHz
Conducted Spurious Emission Plot on Channel 06


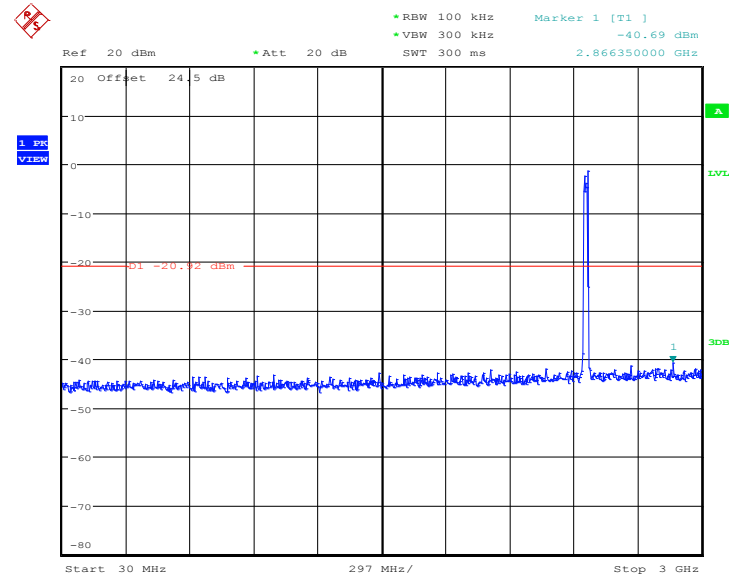
291928-1023 15C Spurious 802.11g_N20 2437 (ch06)

Date: 23.OCT.2012 18:09:08

2.4GHz 802.11n HT20 2 GHz~25 GHz
Conducted Spurious Emission Plot on Channel 06


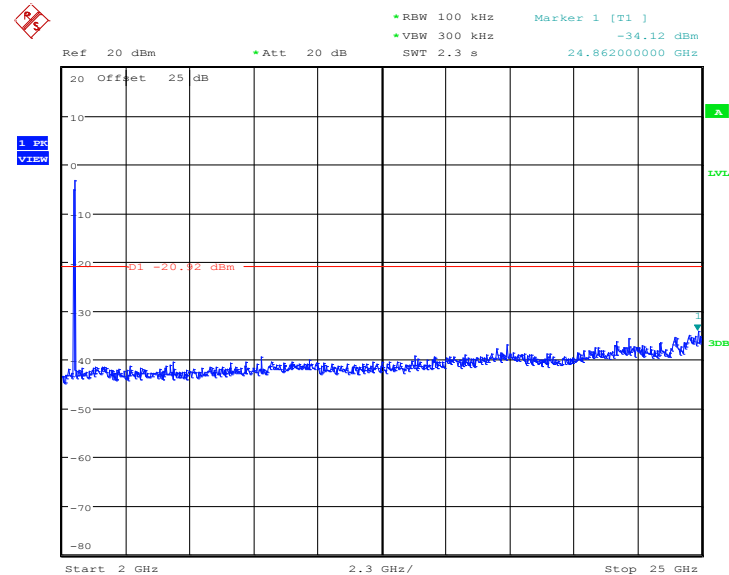
291928-1023 15C Spurious 802.11g_N20 2437 (ch06)

Date: 23.OCT.2012 18:09:25

2.4GHz 802.11n HT20 30 MHz~3 GHz
Conducted Spurious Emission Plot on Channel 11


291928-1023 15C Spurious 802.11g_N20 2462 (ch11)

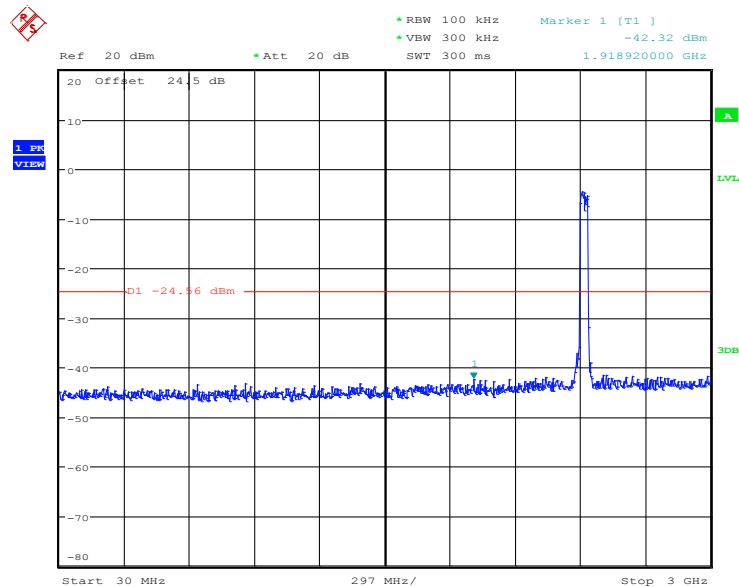
Date: 23.OCT.2012 18:11:56

2.4GHz 802.11n HT20 2 GHz~25 GHz
Conducted Spurious Emission Plot on Channel 11


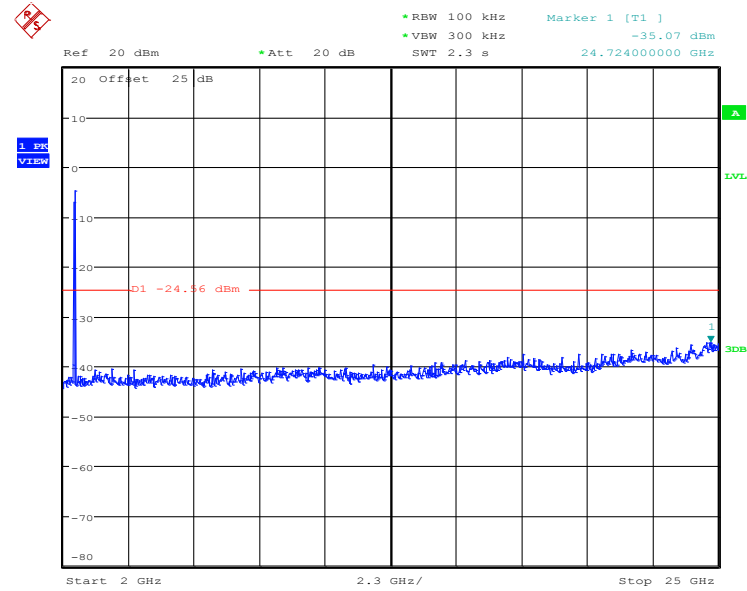
291928-1023 15C Spurious 802.11g_N20 2462 (ch11)

Date: 23.OCT.2012 18:12:14

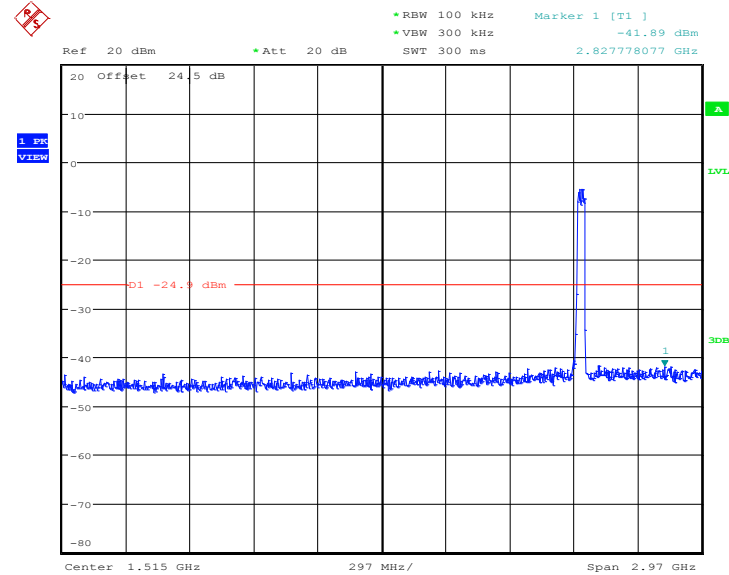
Test Mode :	802.11n HT40	Temperature :	24~26°C
Test Band :	30MHz-3GHz and 2G-25GHz	Relative Humidity :	50~53%
Test Channel :	03, 06, 09	Test Engineer :	Filex Song and Book Lin

2.4GHz 802.11n HT40 30 MHz~3 GHz
Conducted Spurious Emission Plot on Channel 01


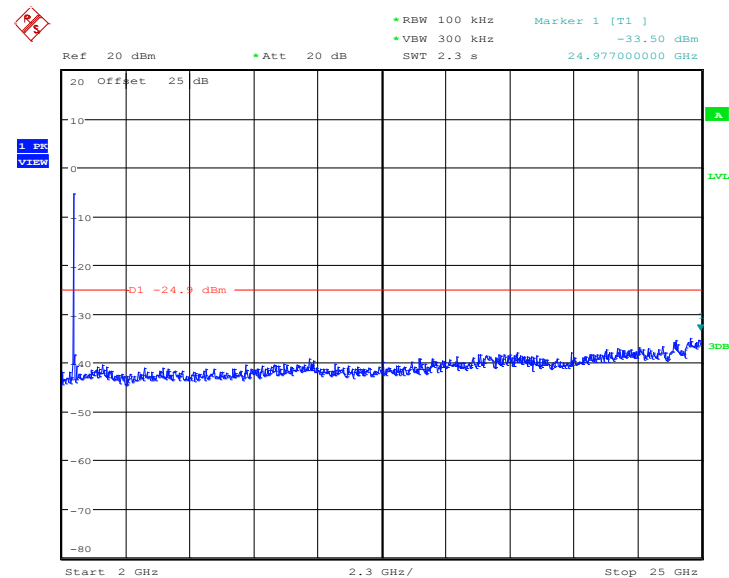
291928-1023 15C Spurious 802.11g_N40 2422 (ch03)
Date: 23.OCT.2012 18:23:12

2.4GHz 802.11n HT40 2 GHz~25 GHz
Conducted Spurious Emission Plot on Channel 01


291928-1023 15C Spurious 802.11g_N40 2422 (ch03)
Date: 23.OCT.2012 18:23:29

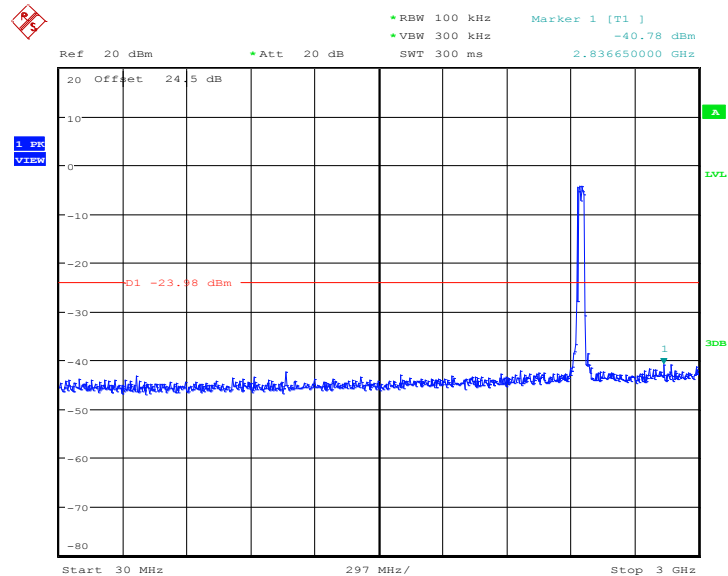
2.4GHz 802.11n HT40 30 MHz~3 GHz
Conducted Spurious Emission Plot on Channel 06


Date: 23.OCT.2012 18:34:07

2.4GHz 802.11n HT40 2 GHz~25 GHz
Conducted Spurious Emission Plot on Channel 06


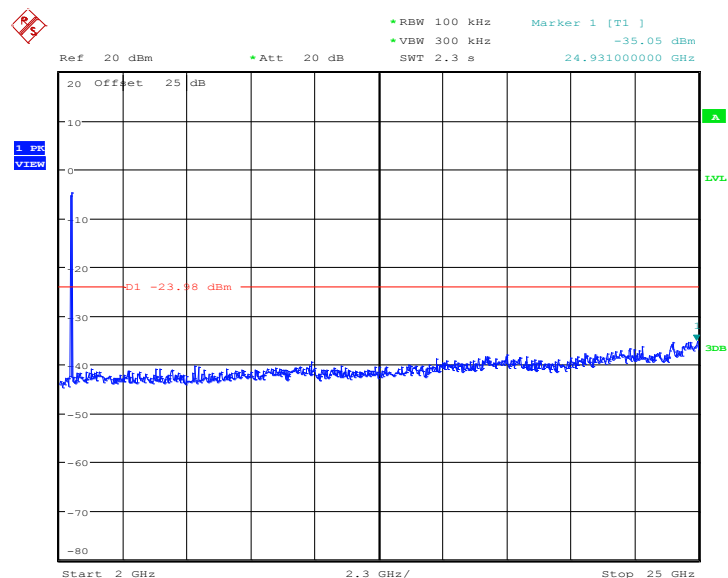
291928-1023 15C Spurious 802.11g_N40 2437 (ch06)

Date: 23.OCT.2012 18:28:59

2.4GHz 802.11n HT40 30 MHz~3 GHz
Conducted Spurious Emission Plot on Channel 11


291928-1023 15C Spurious 802.11g_N40 2452 (ch09)

Date: 23.OCT.2012 18:37:54

2.4GHz 802.11n HT40 2 GHz~25 GHz
Conducted Spurious Emission Plot on Channel 11


291928-1023 15C Spurious 802.11g_N40 2452 (ch09)

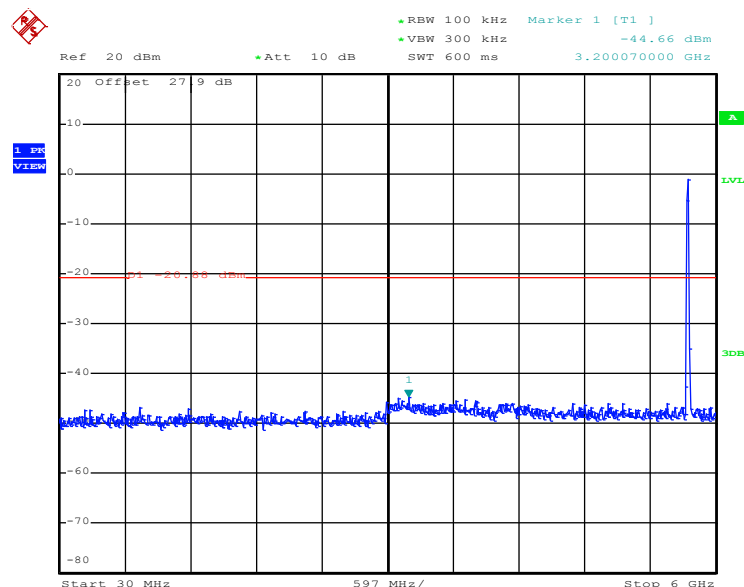
Date: 23.OCT.2012 18:38:11



Test Mode :	802.11a	Temperature :	24~26°C
Test Band :	30MHz-6GHz and 5G-40GHz	Relative Humidity :	50~53%
Test Channel :	149, 157, 165	Test Engineer :	Filex Song and Book Lin

802.11a 30 MHz~6 GHz

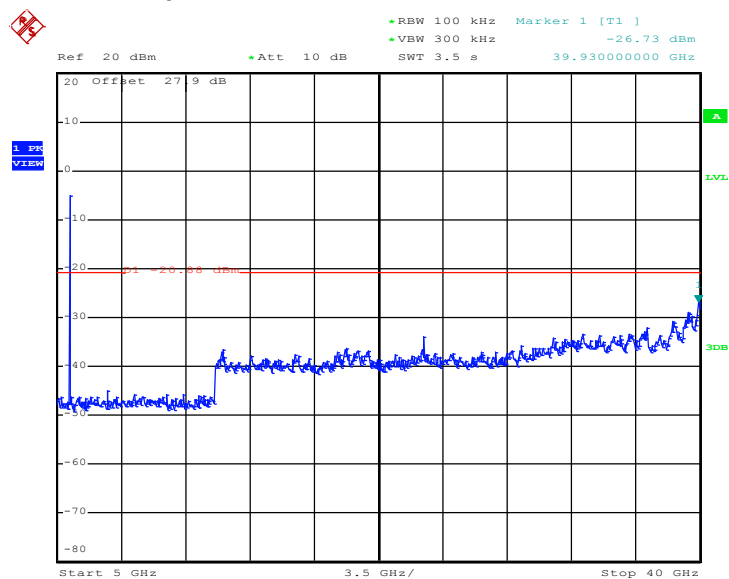
Conducted Spurious Emission Plot on Channel 149



291928-1023 15C Spurious 802.11a 5745 (ch149)
Date: 23.OCT.2012 19:58:58



Conducted Spurious Emission Plot on Channel 149



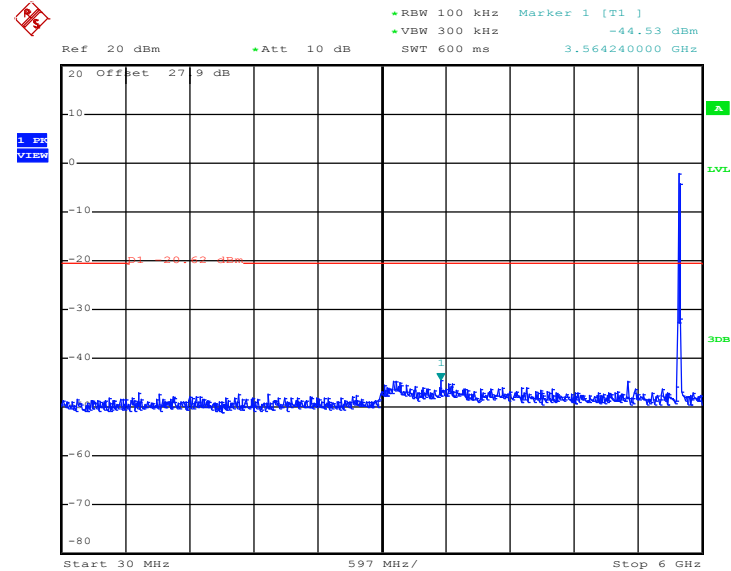
291928-1023 15C Spurious 802.11a 5745 (ch149)

Date: 23.OCT.2012 19:59:16



802.11a 30 MHz~6 GHz

Conducted Spurious Emission Plot on Channel 157

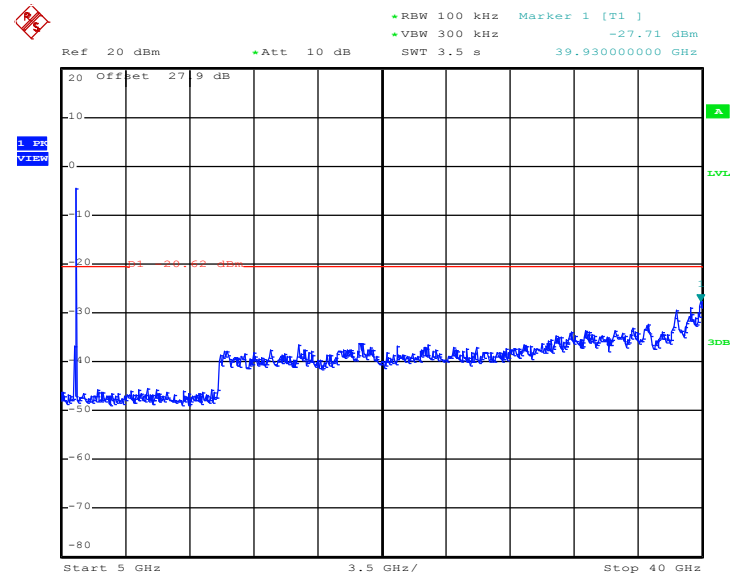


291928-1023 15C Spurious 802.11a 5785 (ch157)

Date: 23.OCT.2012 20:03:37

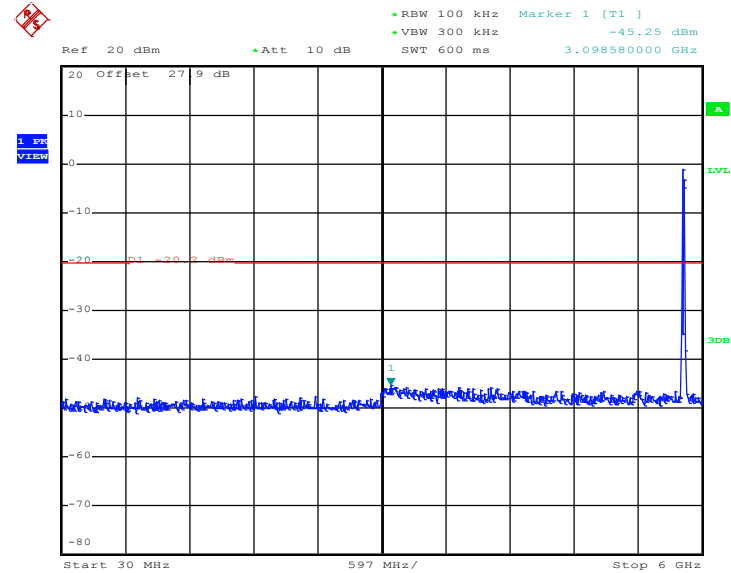
802.11a 5 GHz~40 GHz

Conducted Spurious Emission Plot on Channel 157



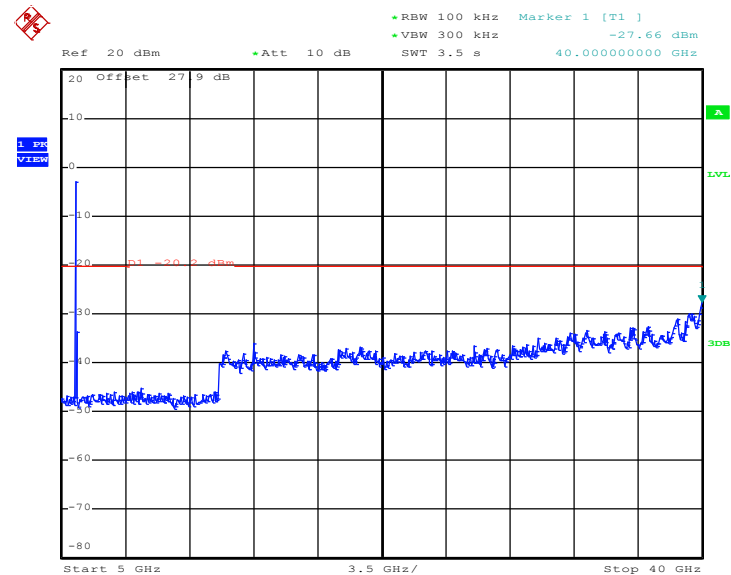
291928-1023 15C Spurious 802.11a 5785 (ch157)

Date: 23.OCT.2012 20:03:54

802.11a 30 MHz~6 GHz
Conducted Spurious Emission Plot on Channel 165


291928-1025 15C Spurious 802.11a 5825 (ch165)

Date: 25.OCT.2012 22:46:52

802.11a 5 GHz~40 GHz
Conducted Spurious Emission Plot on Channel 165


291928-1025 15C Spurious 802.11a 5825 (ch165)

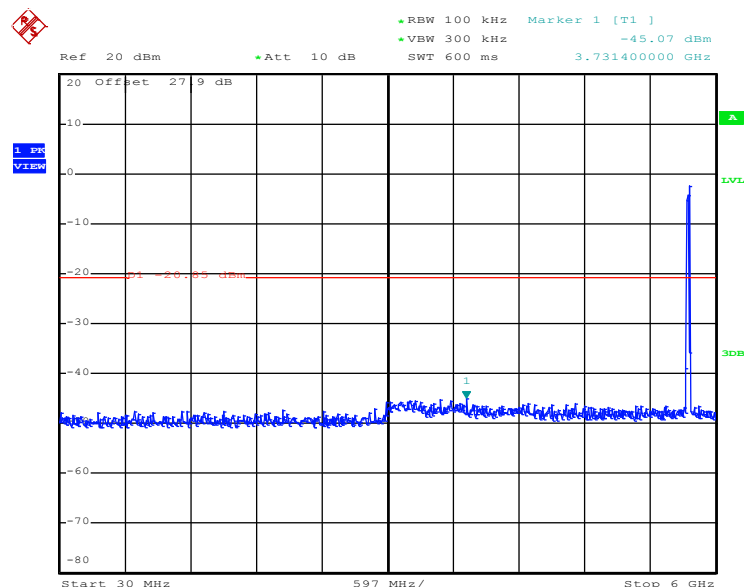
Date: 25.OCT.2012 22:47:10



Test Mode :	802.11n HT20	Temperature :	24~26°C
Test Band :	30MHz-6GHz and 5G-40GHz	Relative Humidity :	50~53%
Test Channel :	149, 157, 165	Test Engineer :	Filex Song and Book Lin

5GHz 802.11n HT20 30 MHz~6 GHz

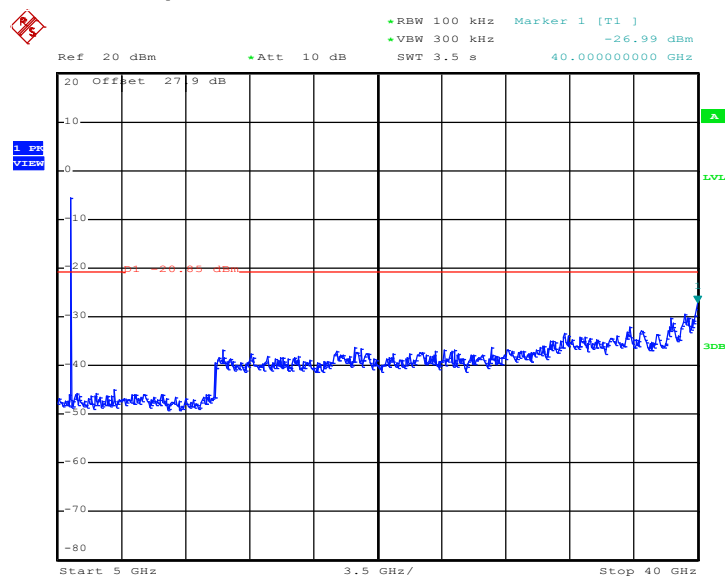
Conducted Spurious Emission Plot on Channel 149



291928-1023 15C Spurious 802.11a_N20 5745 (ch149)
Date: 23.OCT.2012 20:17:15

5GHz 802.11n HT20 5 GHz~40 GHz

Conducted Spurious Emission Plot on Channel 149

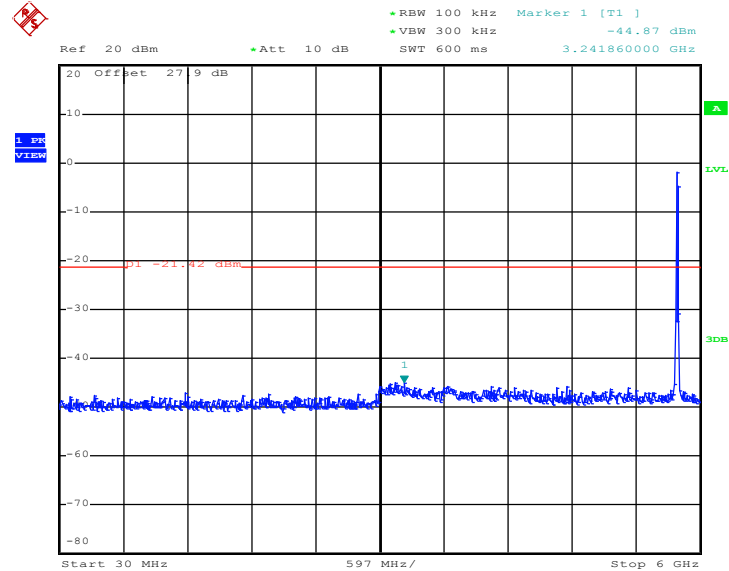


291928-1023 15C Spurious 802.11a_N20 5745 (ch149)

Date: 23.OCT.2012 20:17:33

5GHz 802.11n HT20 30 MHz~6 GHz

Conducted Spurious Emission Plot on Channel 157

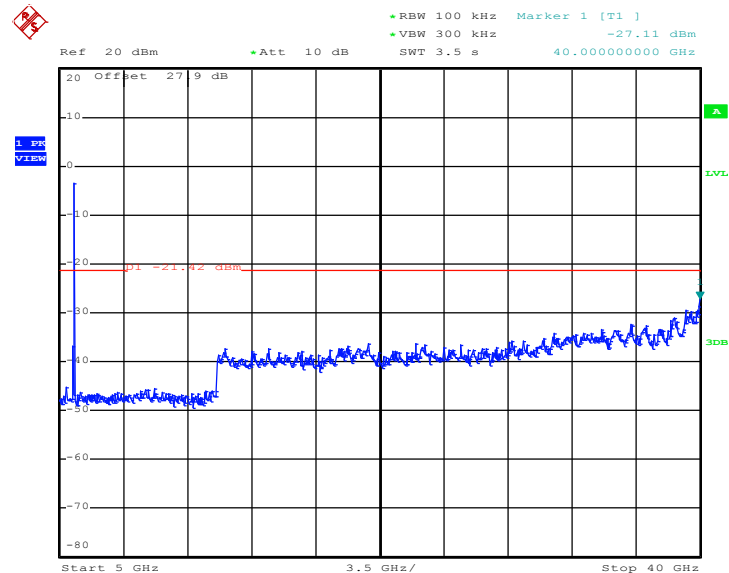


291928-1023 15C Spurious 802.11a_N20 5785 (ch157)

Date: 23.OCT.2012 20:20:28

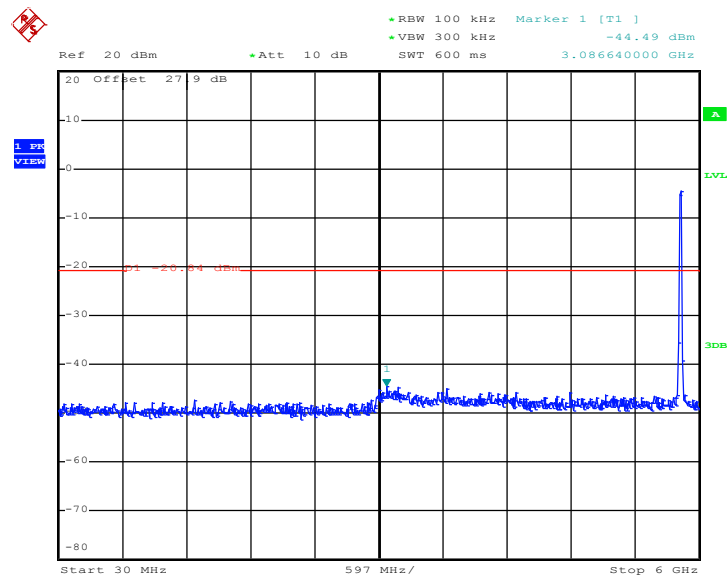
5GHz 802.11n HT20 5 GHz~40 GHz

Conducted Spurious Emission Plot on Channel 157



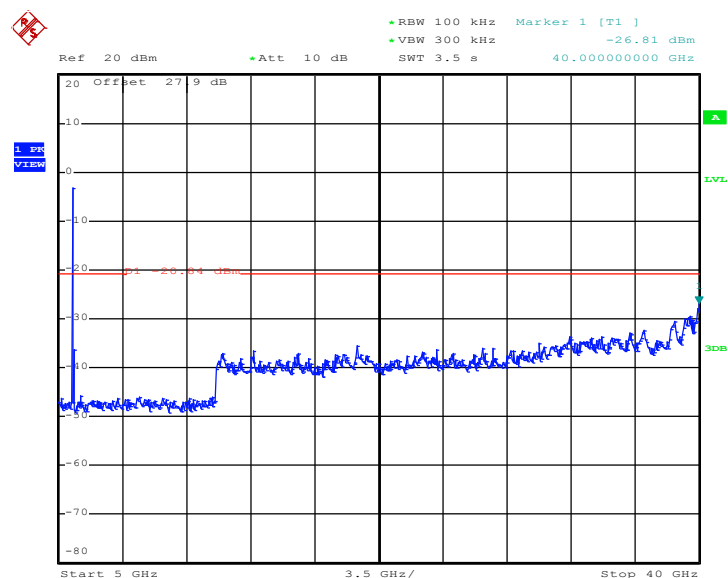
291928-1023 15C Spurious 802.11a N20 5785 (ch157)

Date: 23.OCT.2012 20:20:46

5GHz 802.11n HT20 30 MHz~6 GHz
Conducted Spurious Emission Plot on Channel 165


291928-1023 15C Spurious 802.11a_N20 5825 (ch165)

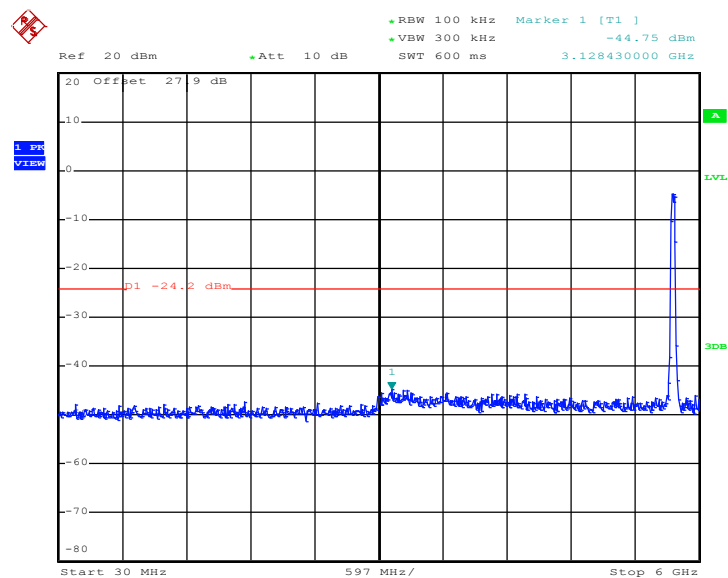
Date: 23.OCT.2012 20:23:58

5GHz 802.11n HT20 5 GHz~40 GHz
Conducted Spurious Emission Plot on Channel 165


291928-1023 15C Spurious 802.11a_N20 5825 (ch165)

Date: 23.OCT.2012 20:24:16

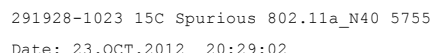
Test Mode :	802.11n HT40	Temperature :	24~26°C
Test Band :	30MHz-6GHz and 5G-40GHz	Relative Humidity :	50~53%
Test Channel :	151 and 159	Test Engineer :	Filex Song and Book Lin

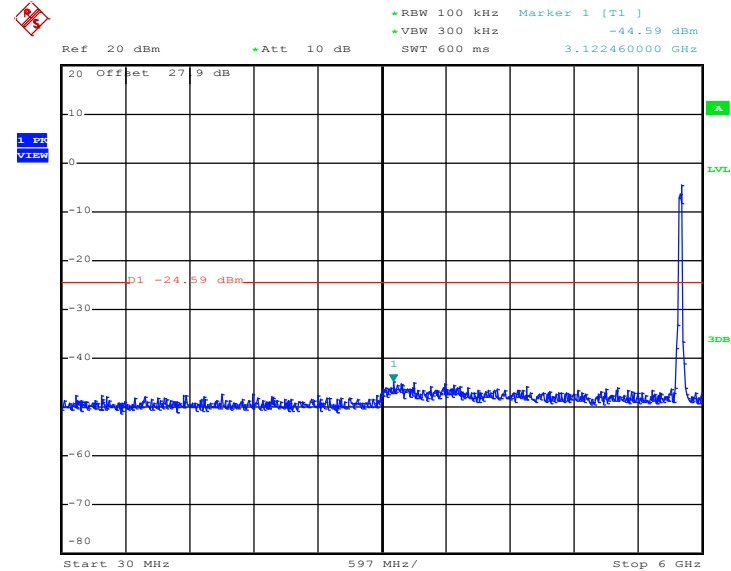
5GHz 802.11n HT40 30 MHz~6 GHz
Conducted Spurious Emission Plot on Channel 151


291928-1023 15C Spurious 802.11a_N40 5755
Date: 23.OCT.2012 20:28:45



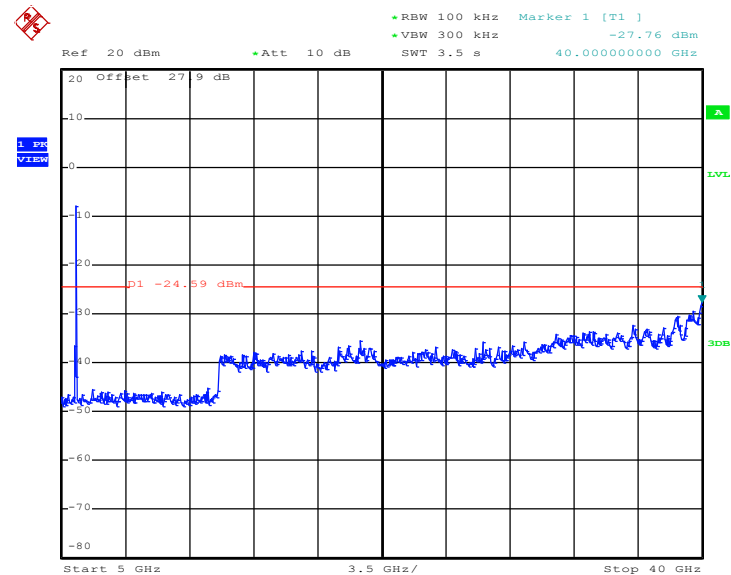
Conducted Spurious Emission Plot on Channel 151



5GHz 802.11n HT40 30 MHz~6 GHz
Conducted Spurious Emission Plot on Channel 159


291928-1023 15C Spurious 802.11a_N40 5795

Date: 23.OCT.2012 20:33:52

5GHz 802.11n HT40 5 GHz~40 GHz
Conducted Spurious Emission Plot on Channel 159


291928-1023 15C Spurious 802.11a_N40 5795

Date: 23.OCT.2012 20:34:10

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 C63.4-2003 and 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 - Preamplifier 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 $\geq$ RBW; Sweep = auto; Detector function = peak; Trace = max hold;
 - (3) Set RBW = 1 MHz, VBW= 3MHz for $f \geq 1$ GHz for peak measurement.

For average measurement:

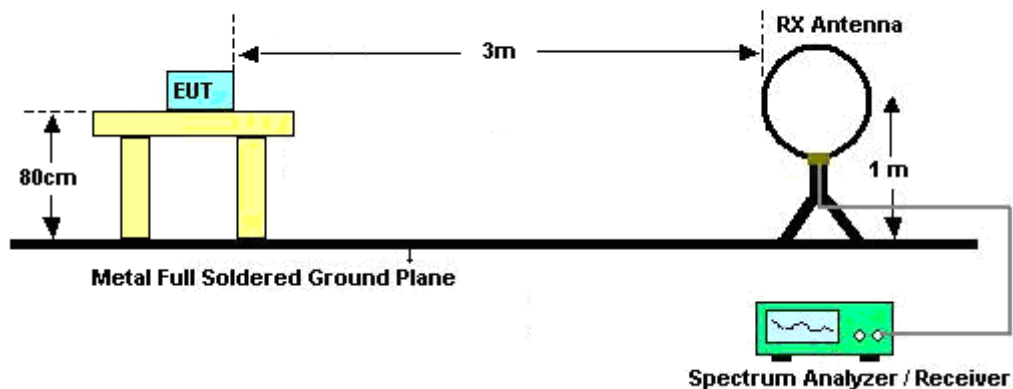
 - VBW = 10 Hz, when duty cycle is no less than 98 percent.
 - VBW $\geq 1/T$, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.

Band	Duty Cycle(%)	T(us)	1/T(KHz)	VBW Setting
802.11b	97.63	8240.00	0.121	1KHz
802.11g	87.18	1360.00	0.735	1KHz
2.4GHz 802.11n HT20	86.49	1280.00	0.781	1KHz
2.4GHz 802.11n HT40	85.95	636.00	1.572	3KHz
802.11a	87.18	1360.00	0.735	1KHz
5GHz 802.11n HT20	86.49	1280.00	0.781	1KHz
5GHz 802.11n HT40	86.18	636.00	1.572	3KHz

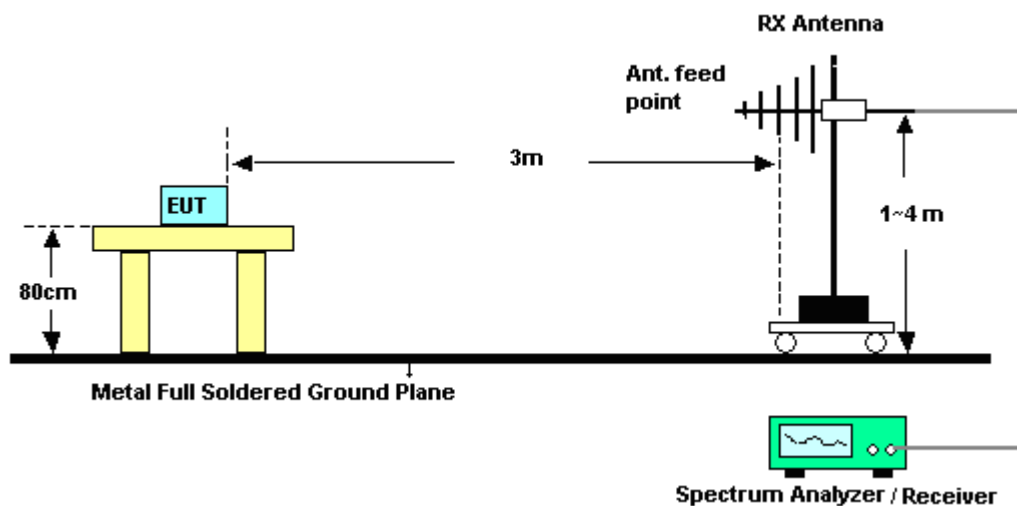
Note: For average measurement with duty cycle $< 98\%$, use reduced VBW measurement method 4.2.3.2.3 in ANSI C63.10.

3.5.4 Test Setup

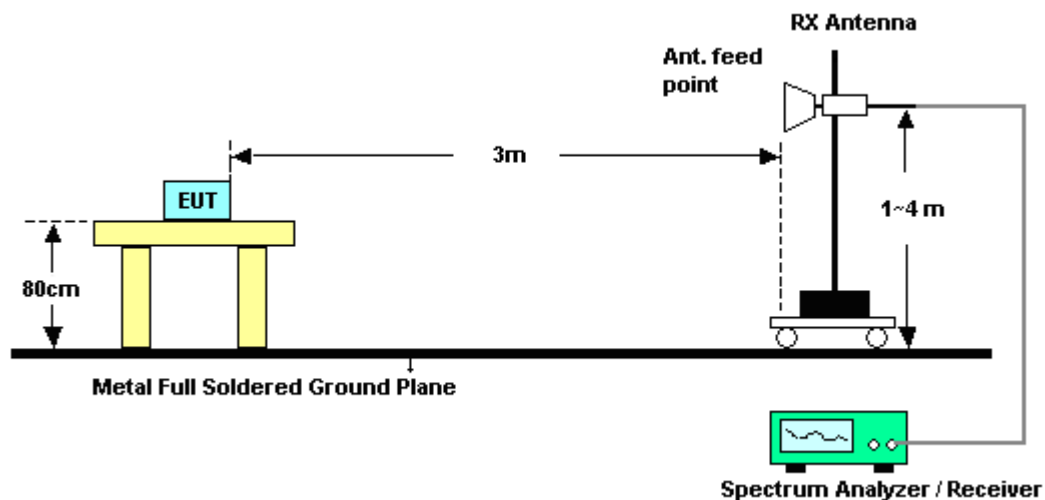
For radiated emissions below 30MHz



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 :	41~42%
Test Channel :	01	Test Engineer :	Elvis Chen

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
2339.43	57.83	-16.17	74	53.58	32.24	5.95	33.94	178	360	Peak
2385.33	37.42	-16.58	54	33.07	32.28	6.03	33.96	178	360	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
2339.79	53.97	-20.03	74	49.72	32.24	5.95	33.94	110	317	Peak
2390	35.93	-18.07	54	31.56	32.3	6.03	33.96	110	317	Average

Test Mode :	802.11b	Temperature :	21~23°C
Test Band :	High	Relative Humidity :	41~42%
Test Channel :	11	Test Engineer :	Elvis Chen

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
2487.36	51.24	-22.76	74	46.68	32.38	6.18	34	101	356	Peak
2487.66	40.83	-13.17	54	36.25	32.4	6.18	34	101	356	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
2487.86	48.65	-25.35	74	44.07	32.4	6.18	34	133	320	Peak
2487.54	37.44	-16.56	54	32.86	32.4	6.18	34	133	320	Average



Test Mode :	802.11g	Temperature :	21~23°C
Test Band :	Low	Relative Humidity :	41~42%
Test Channel :	01	Test Engineer :	Elvis Chen

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2389.56	69.38	-4.62	74	65.01	32.3	6.03	33.96	103	356	Peak
2390	47.32	-6.68	54	42.95	32.3	6.03	33.96	103	356	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2390	64.17	-9.83	74	59.8	32.3	6.03	33.96	108	50	Peak
2390	44.05	-9.95	54	39.68	32.3	6.03	33.96	108	50	Average

Test Mode :	802.11g	Temperature :	21~23°C
Test Band :	High	Relative Humidity :	41~42%
Test Channel :	11	Test Engineer :	Elvis Chen

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2483.76	69.14	-4.86	74	64.58	32.38	6.18	34	100	352	Peak
2483.52	46.03	-7.97	54	41.47	32.38	6.18	34	100	352	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2483.94	64.69	-9.31	74	60.13	32.38	6.18	34	108	56	Peak
2483.5	43.3	-10.7	54	38.74	32.38	6.18	34	108	56	Average



Test Mode :	802.11n HT20	Temperature :	21~23°C
Test Band :	Low	Relative Humidity :	41~42%
Test Channel :	01	Test Engineer :	Elvis Chen

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2389.83	66.12	-7.88	74	61.75	32.3	6.03	33.96	103	360	Peak
2360.22	44.83	-9.17	54	40.53	32.26	5.99	33.95	103	360	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	59.66	-14.34	74	55.29	32.3	6.03	33.96	136	102	Peak
2360.22	40.29	-13.71	54	35.99	32.26	5.99	33.95	136	102	Average

Test Mode :	802.11n HT20	Temperature :	21~23°C
Test Band :	High	Relative Humidity :	41~42%
Test Channel :	11	Test Engineer :	Elvis Chen

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2483.56	60.77	-13.23	74	56.21	32.38	6.18	34	100	0	Peak
2483.5	40.78	-13.22	54	36.22	32.38	6.18	34	100	0	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
2483.52	57.74	-16.26	74	53.18	32.38	6.18	34	107	85	Peak
2483.54	37.75	-16.25	54	33.19	32.38	6.18	34	107	85	Average



Test Mode :	802.11n HT40	Temperature :	21~23°C
Test Band :	Low	Relative Humidity :	41~42%
Test Channel :	03	Test Engineer :	Elvis Chen

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
2389.38	73.08	-0.92	74	68.71	32.3	6.03	33.96	153	360	Peak
2389.74	48.25	-5.75	54	43.88	32.3	6.03	33.96	153	360	Average
2487.58	46.62	-27.38	74	42.04	32.4	6.18	34	153	360	Peak
2492.96	34.69	-19.31	54	30.11	32.4	6.18	34	153	360	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
2389.47	68.81	-5.19	74	64.44	32.3	6.03	33.96	107	342	Peak
2389.74	45	-9	54	40.63	32.3	6.03	33.96	107	342	Average
2486.04	47.96	-26.04	74	43.4	32.38	6.18	34	107	342	Peak
2484.04	34.89	-19.11	54	30.33	32.38	6.18	34	107	342	Average



Test Mode :	802.11n HT40	Temperature :	21~23°C
Test Band :	High	Relative Humidity :	41~42%
Test Channel :	09	Test Engineer :	Elvis Chen

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	51.43	-22.57	74	47.06	32.3	6.03	33.96	100	353	Peak
2349.42	39.2	-14.8	54	34.95	32.24	5.95	33.94	100	353	Average
2484.28	64.31	-9.69	74	59.75	32.38	6.18	34	100	353	Peak
2485.36	43.9	-10.1	54	39.34	32.38	6.18	34	100	353	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2387.04	49.75	-24.25	74	45.38	32.3	6.03	33.96	108	55	Peak
2349.6	36.76	-17.24	54	32.51	32.24	5.95	33.94	108	55	Average
2484.32	60.54	-13.46	74	55.98	32.38	6.18	34	108	55	Peak
2484.08	40.78	-13.22	54	36.22	32.38	6.18	34	108	55	Average



Test Mode :	802.11a	Temperature :	21~23°C
Test Band :	Low	Relative Humidity :	41~42%
Test Channel :	149	Test Engineer :	Elvis Chen

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	78.72	-6.68	85.4	66.73	35.33	9.92	33.26	107	360	Peak
5745	94.34	-	-	82.39	35.34	9.91	33.3	107	360	Average
5745	105.4	-	-	93.45	35.34	9.91	33.3	107	360	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	75.06	-6.25	81.31	63.07	35.33	9.92	33.26	134	328	Peak
5745	91.08	-	-	79.13	35.34	9.91	33.3	134	328	Average
5745	101.31	-	-	89.36	35.34	9.91	33.3	134	328	Peak

Test Mode :	802.11a	Temperature :	21~23°C
Test Band :	High	Relative Humidity :	41~42%
Test Channel :	165	Test Engineer :	Elvis Chen

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
5850	64.22	-20.63	84.85	52.4	35.41	9.87	33.46	116	0	Peak
5825	94.64	-	-	82.78	35.4	9.88	33.42	116	0	Average
5825	104.85	-	-	92.99	35.4	9.88	33.42	116	0	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
5850	59.29	-22.06	81.35	47.47	35.41	9.87	33.46	101	340	Peak
5825	90.66	-	-	78.8	35.4	9.88	33.42	101	340	Average
5825	101.35	-	-	89.49	35.4	9.88	33.42	101	340	Peak

Test Mode :	802.11n HT20	Temperature :	21~23°C
Test Band :	Low	Relative Humidity :	41~42%
Test Channel :	149	Test Engineer :	Elvis Chen

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	79.27	-4.88	84.15	67.28	35.33	9.92	33.26	128	10	Peak
5745	94.25	-	-	82.3	35.34	9.91	33.3	128	10	Average
5745	104.15	-	-	92.2	35.34	9.91	33.3	128	10	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	73.89	-6.59	80.48	61.9	35.33	9.92	33.26	103	338	Peak
5745	89.98	-	-	78.03	35.34	9.91	33.3	103	338	Average
5745	100.48	-	-	88.53	35.34	9.91	33.3	103	338	Peak

Test Mode :	802.11n HT20	Temperature :	21~23°C
Test Band :	High	Relative Humidity :	41~42%
Test Channel :	165	Test Engineer :	Elvis Chen

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
5850	68.14	-17.03	85.17	56.32	35.41	9.87	33.46	106	10	Peak
5825	94.15	-	-	82.29	35.4	9.88	33.42	106	10	Average
5825	105.17	-	-	93.31	35.4	9.88	33.42	106	10	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
5850	64.35	-16.45	80.8	52.53	35.41	9.87	33.46	120	357	Peak
5825	89.56	-	-	77.7	35.4	9.88	33.42	120	357	Average
5825	100.8	-	-	88.94	35.4	9.88	33.42	120	357	Peak



Test Mode :	802.11n HT40	Temperature :	21~23°C
Test Band :	Low	Relative Humidity :	41~42%
Test Channel :	151	Test Engineer :	Elvis Chen

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	81.79	-0.51	82.3	69.8	35.33	9.92	33.26	108	5	Peak
5850	47.58	-34.72	82.3	35.76	35.41	9.87	33.46	108	5	Peak
5755	92.7	-	-	80.73	35.36	9.91	33.3	108	5	Average
5755	102.3	-	-	90.33	35.36	9.91	33.3	108	5	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	74.85	-3.44	78.29	62.86	35.33	9.92	33.26	103	340	Peak
5850	47.84	-30.45	78.29	36.02	35.41	9.87	33.46	103	340	Peak
5755	88.18	-	-	76.21	35.36	9.91	33.3	103	340	Average
5755	98.29	-	-	86.32	35.36	9.91	33.3	103	340	Peak



Test Mode :	802.11n HT40	Temperature :	21~23°C
Test Band :	High	Relative Humidity :	41~42%
Test Channel :	159	Test Engineer :	Elvis Chen

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	58.43	-24.64	83.07	46.44	35.33	9.92	33.26	106	12	Peak
5850	64.87	-18.2	83.07	53.05	35.41	9.87	33.46	106	12	Peak
5795	92.24	-	-	80.35	35.38	9.89	33.38	106	12	Average
5795	103.07	-	-	91.18	35.38	9.89	33.38	106	12	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	52.41	-25.62	78.03	40.42	35.33	9.92	33.26	101	356	Peak
5850	59.94	-18.09	78.03	48.12	35.41	9.87	33.46	101	356	Peak
5795	88.18	-	-	76.29	35.38	9.89	33.38	101	356	Average
5795	98.03	-	-	86.14	35.38	9.89	33.38	101	356	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 :	41~42%
Test Engineer :	Elvis Chen	Polarization :	Horizontal
Remark :	1. 2412 MHz is fundamental signal which can be ignored. 2. 7236 MHz is not within a restricted band, and its limit line is 20dB below the highest emission level. For example, 104.45 dBuV/m - 20dB = 84.45dBuV/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
2412	99.94	-	-	95.53	32.31	6.07	33.97	178	360	Average
2412	104.45	-	-	100.04	32.31	6.07	33.97	178	360	Peak
4824	50.4	-23.6	74	64.78	33.97	9.12	57.47	100	0	Peak
7236	44.08	-40.37	84.45	56.48	35.55	10.03	57.98	100	0	Peak

Test Mode :	802.11b	Temperature :	21~23°C
Test Channel :	01	Relative Humidity :	41~42%
Test Engineer :	Elvis Chen	Polarization :	Vertical
Remark :	1. 2412 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
2412	95.02	-	-	90.61	32.31	6.07	33.97	110	317	Average
2412	99.6	-	-	95.19	32.31	6.07	33.97	110	317	Peak
4824	47.26	-26.74	74	61.64	33.97	9.12	57.47	100	0	Peak

Test Mode :	802.11b	Temperature :	21~23°C
Test Channel :	06	Relative Humidity :	41~42%
Test Engineer :	Elvis Chen	Polarization :	Horizontal
Remark :	1. 2437 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
2437	99.71	-	-	95.23	32.35	6.11	33.98	103	354	Average
2437	104.14	-	-	99.66	32.35	6.11	33.98	103	354	Peak
4875	48.48	-25.52	74	62.88	33.95	9.13	57.48	100	0	Peak

Test Mode :	802.11b	Temperature :	21~23°C
Test Channel :	06	Relative Humidity :	41~42%
Test Engineer :	Elvis Chen	Polarization :	Vertical
Remark :	1. 2437 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
2437	95.46	-	-	90.98	32.35	6.11	33.98	106	59	Average
2437	99.93	-	-	95.45	32.35	6.11	33.98	106	59	Peak
4875	43.78	-30.22	74	58.18	33.95	9.13	57.48	100	0	Peak

Test Mode :	802.11b	Temperature :	21~23°C
Test Channel :	11	Relative Humidity :	41~42%
Test Engineer :	Elvis Chen	Polarization :	Horizontal
Remark :	1. 2462 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2462	101.84	-	-	97.32	32.37	6.14	33.99	101	356	Average
2462	106.35	-	-	101.83	32.37	6.14	33.99	101	356	Peak
4923	48.38	-25.62	74	62.79	33.93	9.14	57.48	100	0	Peak

Test Mode :	802.11b	Temperature :	21~23°C
Test Channel :	11	Relative Humidity :	41~42%
Test Engineer :	Elvis Chen	Polarization :	Vertical
Remark :	1. 2462 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2462	98.48	-	-	93.96	32.37	6.14	33.99	133	320	Average
2462	102.84	-	-	98.32	32.37	6.14	33.99	133	320	Peak
4923	44.32	-29.68	74	58.73	33.93	9.14	57.48	100	0	Peak

Test Mode :	802.11g	Temperature :	21~23°C
Test Channel :	01	Relative Humidity :	41~42%
Test Engineer :	Elvis Chen	Polarization :	Horizontal
Remark :	1. 2412 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
2412	93.54	-	-	89.13	32.31	6.07	33.97	103	356	Average
2412	104.1	-	-	99.69	32.31	6.07	33.97	103	356	Peak
4824	42.18	-31.82	74	56.56	33.97	9.12	57.47	100	0	Peak

Test Mode :	802.11g	Temperature :	21~23°C
Test Channel :	01	Relative Humidity :	41~42%
Test Engineer :	Elvis Chen	Polarization :	Vertical
Remark :	1. 2412 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
2412	91.47	-	-	87.06	32.31	6.07	33.97	108	50	Average
2412	100.37	-	-	95.96	32.31	6.07	33.97	108	50	Peak
4824	39.25	-34.75	74	56.15	33.97	9.12	59.99	100	0	Peak

Test Mode :	802.11g	Temperature :	21~23°C
Test Channel :	06	Relative Humidity :	41~42%
Test Engineer :	Elvis Chen	Polarization :	Horizontal
Remark :	1. 2437 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
2437	94.07	-	-	89.59	32.35	6.11	33.98	100	334	Average
2437	103.93	-	-	99.45	32.35	6.11	33.98	100	334	Peak
4875	42.44	-31.56	74	56.84	33.95	9.13	57.48	100	0	Peak

Test Mode :	802.11g	Temperature :	21~23°C
Test Channel :	06	Relative Humidity :	41~42%
Test Engineer :	Elvis Chen	Polarization :	Vertical
Remark :	1. 2437 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
2437	89.73	-	-	85.25	32.35	6.11	33.98	108	58	Average
2437	100.27	-	-	95.79	32.35	6.11	33.98	108	58	Peak
4875	41.83	-32.17	74	56.23	33.95	9.13	57.48	100	0	Peak

Test Mode :	802.11g	Temperature :	21~23°C
Test Channel :	11	Relative Humidity :	41~42%
Test Engineer :	Elvis Chen	Polarization :	Horizontal
Remark :	1. 2462 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2462	95.58	-	-	91.06	32.37	6.14	33.99	100	352	Average
2462	106.12	-	-	101.6	32.37	6.14	33.99	100	352	Peak
4923	42.13	-31.87	74	56.54	33.93	9.14	57.48	100	0	Peak

Test Mode :	802.11g	Temperature :	21~23°C
Test Channel :	11	Relative Humidity :	41~42%
Test Engineer :	Elvis Chen	Polarization :	Vertical
Remark :	1. 2462 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2462	92.44	-	-	87.92	32.37	6.14	33.99	108	56	Average
2462	102.48	-	-	97.96	32.37	6.14	33.99	108	56	Peak
4923	41.92	-32.08	74	56.33	33.93	9.14	57.48	100	0	Peak

Test Mode :	2.4GHz 802.11n HT20	Temperature :	21~23°C
Test Channel :	01	Relative Humidity :	41~42%
Test Engineer :	Elvis Chen	Polarization :	Horizontal
Remark :	1. 2412 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
2412	93.68	-	-	89.27	32.31	6.07	33.97	103	360	Average
2412	103.84	-	-	99.43	32.31	6.07	33.97	103	360	Peak
4824	41.83	-32.17	74	56.21	33.97	9.12	57.47	100	0	Peak

Test Mode :	2.4GHz 802.11n HT20	Temperature :	21~23°C
Test Channel :	01	Relative Humidity :	41~42%
Test Engineer :	Elvis Chen	Polarization :	Vertical
Remark :	1. 2412 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
2412	86.97	-	-	82.56	32.31	6.07	33.97	136	102	Average
2412	96.26	-	-	91.85	32.31	6.07	33.97	136	102	Peak
4824	41.66	-32.34	74	56.04	33.97	9.12	57.47	100	0	Peak

Test Mode :	2.4GHz 802.11n HT20	Temperature :	21~23°C
Test Channel :	06	Relative Humidity :	41~42%
Test Engineer :	Elvis Chen	Polarization :	Horizontal
Remark :	1. 2437 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
2437	92.25	-	-	87.77	32.35	6.11	33.98	151	360	Average
2437	102.93	-	-	98.45	32.35	6.11	33.98	151	360	Peak
4875	42.26	-31.74	74	56.66	33.95	9.13	57.48	100	0	Peak

Test Mode :	2.4GHz 802.11n HT20	Temperature :	21~23°C
Test Channel :	06	Relative Humidity :	41~42%
Test Engineer :	Elvis Chen	Polarization :	Vertical
Remark :	1. 2437 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
2437	86.38	-	-	81.9	32.35	6.11	33.98	130	294	Average
2437	97.07	-	-	92.59	32.35	6.11	33.98	130	294	Peak
4875	41.9	-32.1	74	56.3	33.95	9.13	57.48	100	0	Peak

Test Mode :	2.4GHz 802.11n HT20	Temperature :	21~23°C
Test Channel :	11	Relative Humidity :	41~42%
Test Engineer :	Elvis Chen	Polarization :	Horizontal
Remark :	1. 2462 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2462	90.78	-	-	86.26	32.37	6.14	33.99	100	0	Average
2462	100.52	-	-	96	32.37	6.14	33.99	100	0	Peak
4923	41.93	-32.07	74	56.34	33.93	9.14	57.48	100	0	Peak

Test Mode :	2.4GHz 802.11n HT20	Temperature :	21~23°C
Test Channel :	11	Relative Humidity :	41~42%
Test Engineer :	Elvis Chen	Polarization :	Vertical
Remark :	1. 2462 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2462	87.07	-	-	82.55	32.37	6.14	33.99	107	85	Average
2462	97.43	-	-	92.91	32.37	6.14	33.99	107	85	Peak
4924	42.08	-31.92	74	56.48	33.93	9.15	57.48	100	0	Peak

Test Mode :	2.4GHz 802.11n HT40	Temperature :	21~23°C
Test Channel :	03	Relative Humidity :	41~42%
Test Engineer :	Elvis Chen	Polarization :	Horizontal
Remark :	1. 2422 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
2422	90.61	-	-	86.18	32.33	6.07	33.97	153	360	Average
2422	100.95	-	-	96.52	32.33	6.07	33.97	153	360	Peak
4845	44.85	-29.15	74	59.24	33.96	9.12	57.47	100	0	Peak
7266	43.64	-30.36	74	56.06	35.54	10.04	58	100	0	Peak

Test Mode :	2.4GHz 802.11n HT40	Temperature :	21~23°C
Test Channel :	03	Relative Humidity :	41~42%
Test Engineer :	Elvis Chen	Polarization :	Vertical
Remark :	1. 2422 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
2422	86.06	-	-	81.63	32.33	6.07	33.97	107	342	Average
2422	95.7	-	-	91.27	32.33	6.07	33.97	107	342	Peak
4844	41.27	-32.73	74	55.66	33.96	9.12	57.47	100	0	Peak
7266	47.29	-26.71	74	59.71	35.54	10.04	58	100	0	Peak

Test Mode :	2.4GHz 802.11n HT40	Temperature :	21~23°C
Test Channel :	06	Relative Humidity :	41~42%
Test Engineer :	Elvis Chen	Polarization :	Horizontal
Remark :	1. 2437 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
2437	90.41	-	-	85.93	32.35	6.11	33.98	100	360	Average
2437	99.62	-	-	95.14	32.35	6.11	33.98	100	360	Peak
4869	45.84	-28.16	74	60.24	33.95	9.13	57.48	100	0	Peak
7311	41.7	-32.3	74	54.12	35.54	10.06	58.02	100	0	Peak

Test Mode :	2.4GHz 802.11n HT40	Temperature :	21~23°C
Test Channel :	06	Relative Humidity :	41~42%
Test Engineer :	Elvis Chen	Polarization :	Vertical
Remark :	1. 2437 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
2437	85.63	-	-	81.15	32.35	6.11	33.98	130	90	Average
2437	94.57	-	-	90.09	32.35	6.11	33.98	130	90	Peak
4875	42.14	-31.86	74	56.54	33.95	9.13	57.48	100	0	Peak
7311	44.41	-29.59	74	56.83	35.54	10.06	58.02	100	0	Peak

Test Mode :	2.4GHz 802.11n HT40	Temperature :	21~23°C
Test Channel :	09	Relative Humidity :	41~42%
Test Engineer :	Elvis Chen	Polarization :	Horizontal
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	89.04	-	-	84.56	32.35	6.11	33.98	100	353	Average
2452	98.9	-	-	94.42	32.35	6.11	33.98	100	353	Peak
4908	44.94	-29.06	74	59.35	33.93	9.14	57.48	100	0	Peak
7356	44.52	-29.48	74	56.97	35.53	10.08	58.06	100	0	Peak

Test Mode :	2.4GHz 802.11n HT40	Temperature :	21~23°C
Test Channel :	09	Relative Humidity :	41~42%
Test Engineer :	Elvis Chen	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	85.08	-	-	80.6	32.35	6.11	33.98	108	55	Average
2452	94.66	-	-	90.18	32.35	6.11	33.98	108	55	Peak
4905	40.33	-33.67	74	54.74	33.93	9.14	57.48	100	0	Peak
7362	42.44	-31.56	74	54.89	35.53	10.08	58.06	100	0	Peak

Test Mode :	802.11a	Temperature :	21~23°C
Test Channel :	149	Relative Humidity :	41~42%
Test Engineer :	Elvis Chen	Polarization :	Horizontal
Remark :	1. 5745 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
5745	94.34	-	-	82.39	35.34	9.91	33.3	107	360	Average
5745	105.4	-	-	93.45	35.34	9.91	33.3	107	360	Peak
11490	45.28	-28.72	74	52.3	38.38	13.14	58.54	100	0	Peak

Test Mode :	802.11a	Temperature :	21~23°C
Test Channel :	149	Relative Humidity :	41~42%
Test Engineer :	Elvis Chen	Polarization :	Vertical
Remark :	1. 5745 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
5745	91.08	-	-	79.13	35.34	9.91	33.3	134	328	Average
5745	101.31	-	-	89.36	35.34	9.91	33.3	134	328	Peak
11490	45.6	-28.4	74	52.12	38.38	13.14	58.04	100	0	Peak

Test Mode :	802.11a	Temperature :	21~23°C
Test Channel :	157	Relative Humidity :	41~42%
Test Engineer :	Elvis Chen	Polarization :	Horizontal
Remark :	1. 5785 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
5785	94.42	-	-	82.49	35.37	9.9	33.34	118	3	Average
5785	104.7	-	-	92.77	35.37	9.9	33.34	118	3	Peak
11571	43.28	-30.72	74	50.23	38.46	13.17	58.58	100	0	Peak

Test Mode :	802.11a	Temperature :	21~23°C
Test Channel :	157	Relative Humidity :	41~42%
Test Engineer :	Elvis Chen	Polarization :	Vertical
Remark :	1. 5785 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
5785	89.7	-	-	77.77	35.37	9.9	33.34	101	324	Average
5785	99.34	-	-	87.41	35.37	9.9	33.34	101	324	Peak
11571	43.02	-30.98	74	49.33	38.46	13.17	57.94	100	0	Peak

Test Mode :	802.11a	Temperature :	21~23°C
Test Channel :	165	Relative Humidity :	41~42%
Test Engineer :	Elvis Chen	Polarization :	Horizontal
Remark :	1. 5825 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
5825	94.64	-	-	82.78	35.4	9.88	33.42	116	0	Average
5825	104.85	-	-	92.99	35.4	9.88	33.42	116	0	Peak
11649	41.07	-32.93	74	47.95	38.51	13.22	58.61	100	0	Peak

Test Mode :	802.11a	Temperature :	21~23°C
Test Channel :	165	Relative Humidity :	41~42%
Test Engineer :	Elvis Chen	Polarization :	Vertical
Remark :	1. 5825 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
5825	90.66	-	-	78.8	35.4	9.88	33.42	101	340	Average
5825	101.35	-	-	89.49	35.4	9.88	33.42	101	340	Peak
11649	43.37	-30.63	74	49.53	38.51	13.22	57.89	100	0	Peak

Test Mode :	5GHz 802.11n HT20	Temperature :	21~23°C
Test Channel :	149	Relative Humidity :	41~42%
Test Engineer :	Elvis Chen	Polarization :	Horizontal
Remark :	1. 5745 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
5745	94.25	-	-	82.3	35.34	9.91	33.3	128	10	Average
5745	104.15	-	-	92.2	35.34	9.91	33.3	128	10	Peak
11490	44.45	-29.55	74	51.47	38.38	13.14	58.54	100	0	Peak

Test Mode :	5GHz 802.11n HT20	Temperature :	21~23°C
Test Channel :	149	Relative Humidity :	41~42%
Test Engineer :	Elvis Chen	Polarization :	Vertical
Remark :	1. 5745 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
5745	89.98	-	-	78.03	35.34	9.91	33.3	103	338	Average
5745	100.48	-	-	88.53	35.34	9.91	33.3	103	338	Peak
11490	44.97	-29.03	74	51.49	38.38	13.14	58.04	100	0	Peak

Test Mode :	5GHz 802.11n HT20	Temperature :	21~23°C
Test Channel :	157	Relative Humidity :	41~42%
Test Engineer :	Elvis Chen	Polarization :	Horizontal
Remark :	1. 5785 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
5785	94.87	-	-	82.94	35.37	9.9	33.34	108	11	Average
5785	105.39	-	-	93.46	35.37	9.9	33.34	108	11	Peak
11571	43.88	-30.12	74	50.83	38.46	13.17	58.58	100	0	Peak

Test Mode :	5GHz 802.11n HT20	Temperature :	21~23°C
Test Channel :	157	Relative Humidity :	41~42%
Test Engineer :	Elvis Chen	Polarization :	Vertical
Remark :	1. 5785 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
5785	89.05	-	-	77.12	35.37	9.9	33.34	100	352	Average
5785	100.06	-	-	88.13	35.37	9.9	33.34	100	352	Peak
11571	43.26	-30.74	74	49.57	38.46	13.17	57.94	100	0	Peak

Test Mode :	5GHz 802.11n HT20	Temperature :	21~23°C
Test Channel :	165	Relative Humidity :	41~42%
Test Engineer :	Elvis Chen	Polarization :	Horizontal
Remark :	1. 5825 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
5825	94.15	-	-	82.29	35.4	9.88	33.42	106	10	Average
5825	105.17	-	-	93.31	35.4	9.88	33.42	106	10	Peak
11649	42.47	-31.53	74	49.35	38.51	13.22	58.61	100	0	Peak

Test Mode :	5GHz 802.11n HT20	Temperature :	21~23°C
Test Channel :	165	Relative Humidity :	41~42%
Test Engineer :	Elvis Chen	Polarization :	Vertical
Remark :	1. 5825 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
5825	89.56	-	-	77.7	35.4	9.88	33.42	120	357	Average
5825	100.8	-	-	88.94	35.4	9.88	33.42	120	357	Peak
11649	42.84	-31.16	74	49	38.51	13.22	57.89	100	0	Peak

Test Mode :	5GHz 802.11n HT40	Temperature :	21~23°C
Test Channel :	151	Relative Humidity :	41~42%
Test Engineer :	Elvis Chen	Polarization :	Horizontal
Remark :	1. 5755 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
31.08	20.1	-19.9	40	32.15	19.28	0.54	31.87	100	79	Peak
59.7	15.22	-24.78	40	40.14	6.1	0.76	31.78	-	-	Peak
115.86	12.32	-31.18	43.5	31.57	11.34	1.08	31.67	-	-	Peak
680.1	22.37	-23.63	46	29.46	20.44	2.9	30.43	-	-	Peak
832.7	24.62	-21.38	46	29.37	22.43	3.23	30.41	-	-	Peak
923.7	25.58	-20.42	46	29.56	23.45	3.4	30.83	-	-	Peak
5755	92.7	-	-	80.73	35.36	9.91	33.3	108	5	Average
5755	102.3	-	-	90.33	35.36	9.91	33.3	108	5	Peak
11511	44.02	-29.98	74	51.02	38.4	13.14	58.54	100	0	Peak

Test Mode :	5GHz 802.11n HT40	Temperature :	21~23°C
Test Channel :	151	Relative Humidity :	41~42%
Test Engineer :	Elvis Chen	Polarization :	Vertical
Remark :	1. 5755 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
30.54	21.72	-18.28	40	33.77	19.28	0.54	31.87	-	-	Peak
49.44	29.94	-10.06	40	52.38	8.5	0.69	31.63	100	69	Peak
91.02	14.76	-28.74	43.5	36.74	8.72	0.95	31.65	-	-	Peak
701.8	22.5	-23.5	46	29.42	20.63	2.94	30.49	-	-	Peak
846	24.21	-21.79	46	28.9	22.56	3.26	30.51	-	-	Peak
958.7	24.75	-21.25	46	28.07	23.97	3.47	30.76	-	-	Peak
5755	88.18	-	-	76.21	35.36	9.91	33.3	103	340	Average
5755	98.29	-	-	86.32	35.36	9.91	33.3	103	340	Peak
11511	44.29	-29.71	74	50.75	38.4	13.14	58	100	0	Peak

Test Mode :	5GHz 802.11n HT40	Temperature :	21~23°C
Test Channel :	159	Relative Humidity :	41~42%
Test Engineer :	Elvis Chen	Polarization :	Horizontal
Remark :	1. 5795 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
5795	92.24	-	-	80.35	35.38	9.89	33.38	106	12	Average
5795	103.07	-	-	91.18	35.38	9.89	33.38	106	12	Peak
11589	41.66	-32.34	74	48.59	38.47	13.18	58.58	100	0	Peak

Test Mode :	5GHz 802.11n HT40	Temperature :	21~23°C
Test Channel :	159	Relative Humidity :	41~42%
Test Engineer :	Elvis Chen	Polarization :	Vertical
Remark :	1. 5795 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
5795	88.18	-	-	76.29	35.38	9.89	33.38	101	356	Average
5795	98.03	-	-	86.14	35.38	9.89	33.38	101	356	Peak
11589	43.1	-30.9	74	49.38	38.47	13.18	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 (dBuV)	
	Quasi-Peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

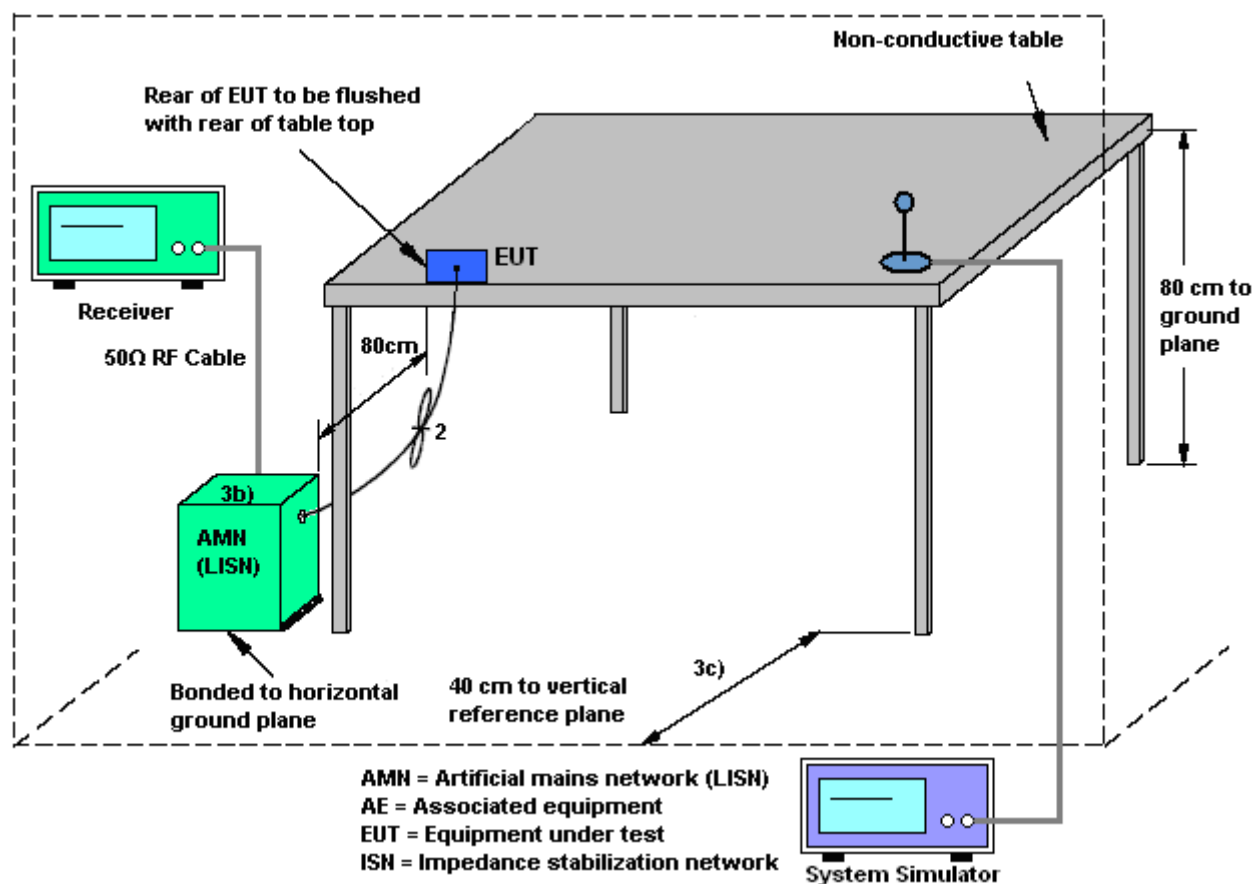
3.6.2 Measuring Instruments

See list of measuring instruments of this test report.

3.6.3 Test Procedures

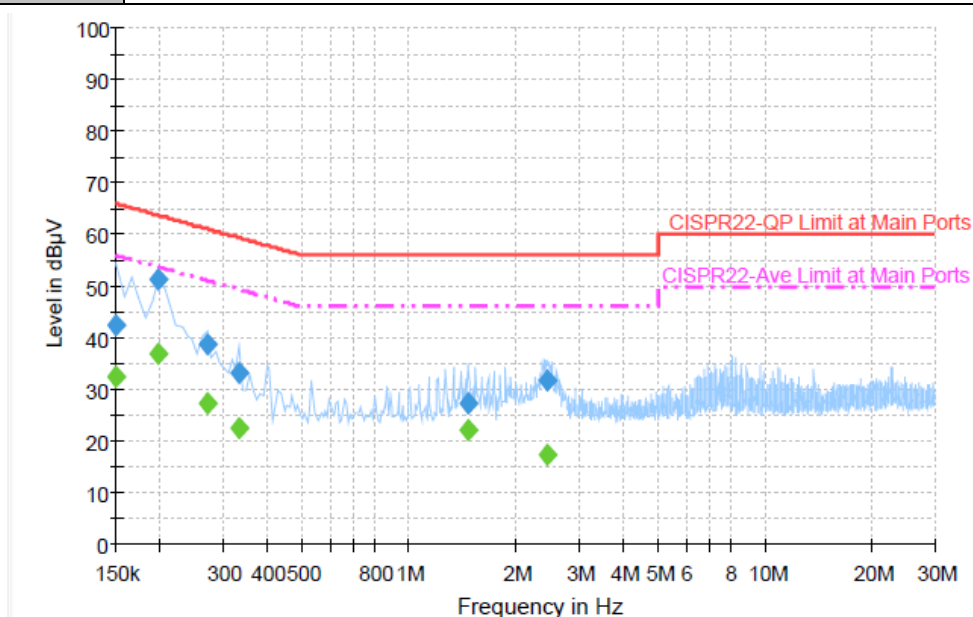
1. The testing follows the guidelines in ANSI C63.4-2003 and ANSI C63.10-2009.
2. The EUT was placed 0.4 meter from the conducting wall of the shielding room, and it was kept at least 80 centimeters from any other grounded conducting surface.
3. Connect EUT to the power mains through a line impedance 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



3.6.5 Test Result of AC Conducted Emission

Test Mode :	Mode 1	Temperature :	20~22℃
Test Engineer :	Slash Huang	Relative Humidity :	45~47%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	WCDMA Band IV Idle + Bluetooth Link + WLAN (2.4G) Link + GPS Rx + Earphone + Battery + USB Cable 1 (Data Link with Notebook)		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



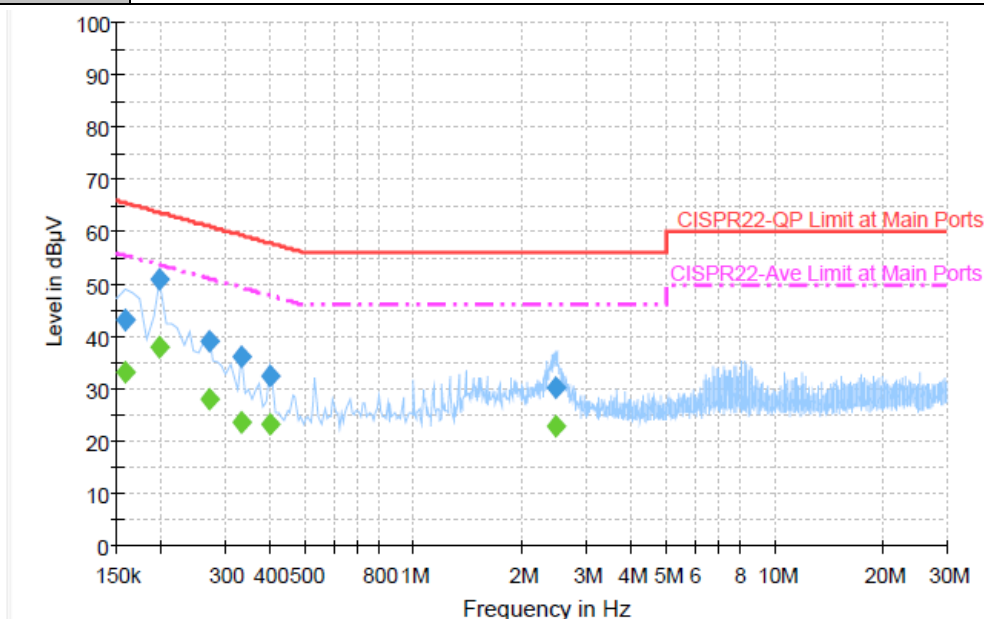
Final Result : Quasi-Peak

Frequency (MHz)	Quasi-Peak (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.150000	42.3	Off	L1	19.4	23.7	66.0
0.198000	51.3	Off	L1	19.3	12.4	63.7
0.270000	38.6	Off	L1	19.3	22.5	61.1
0.334000	33.2	Off	L1	19.4	26.2	59.4
1.462000	27.4	Off	L1	19.5	28.6	56.0
2.438000	31.8	Off	L1	19.6	24.2	56.0

Final Result : Average

Frequency (MHz)	Average (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.150000	32.3	Off	L1	19.4	23.7	56.0
0.198000	36.9	Off	L1	19.3	16.8	53.7
0.270000	27.4	Off	L1	19.3	23.7	51.1
0.334000	22.5	Off	L1	19.4	26.9	49.4
1.462000	22.1	Off	L1	19.5	23.9	46.0
2.438000	17.3	Off	L1	19.6	28.7	46.0

Test Mode :	Mode 1	Temperature :	20~22°C
Test Engineer :	Slash Huang	Relative Humidity :	45~47%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	WCDMA Band IV Idle + Bluetooth Link + WLAN (2.4G) Link + GPS Rx + Earphone + Battery + USB Cable 1 (Data Link with Notebook)		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		


Final Result : Quasi-Peak

Frequency (MHz)	Quasi-Peak (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.158000	43.3	Off	N	19.3	22.3	65.6
0.198000	51.1	Off	N	19.3	12.6	63.7
0.270000	39.2	Off	N	19.4	21.9	61.1
0.334000	36.0	Off	N	19.4	23.4	59.4
0.398000	32.5	Off	N	19.5	25.4	57.9
2.470000	30.1	Off	N	19.6	25.9	56.0

Final Result : Average

Frequency (MHz)	Average (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.158000	33.3	Off	N	19.3	22.3	55.6
0.198000	38.1	Off	N	19.3	15.6	53.7
0.270000	28.1	Off	N	19.4	23.0	51.1
0.334000	23.6	Off	N	19.4	25.8	49.4
0.398000	23.1	Off	N	19.5	24.8	47.9
2.470000	22.8	Off	N	19.6	23.2	46.0

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	Sep. 25, 2012 ~ Oct. 25, 2012	Jun. 05, 2013	Conducted (TH02-HY)
Power Meter	Anritsu	ML2495A	1036004	300MHz~40GHz	Sep. 08, 2012	Sep. 25, 2012 ~ Oct. 25, 2012	Sep. 07, 2013	Conducted (TH02-HY)
Power Sensor	Anritsu	MA2411B	1027253	300MHz~40GHz	Sep. 08, 2012	Sep. 25, 2012 ~ Oct. 25, 2012	Sep. 07, 2013	Conducted (TH02-HY)
Bilog Antenna	Schaffner	CBL6111C	2726	30MHz ~ 1GHz	Oct. 06, 2012	Oct. 12, 2012 ~ Oct. 21, 2012	Oct. 05, 2013	Radiation (03CH07-HY)
Spectrum Analyzer	Rohde & Schwarz	FSP30	101067	9KHz ~ 30GHz	Dec. 06, 2011	Oct. 12, 2012 ~ Oct. 21, 2012	Dec. 05, 2012	Radiation (03CH07-HY)
Double Ridge Horn Antenna	ESCO	3117	00075962	1GHz ~ 18GHz	Aug. 22, 2012	Oct. 12, 2012 ~ Oct. 21, 2012	Aug. 21, 2013	Radiation (03CH07-HY)
Pre Amplifier	Agilent	8449B	3008A02362	1GHz ~ 26.5GHz	Dec. 05, 2011	Oct. 12, 2012 ~ Oct. 21, 2012	Dec. 04, 2012	Radiation (03CH07-HY)
Pre Amplifier	MITEQ	AMF-7D-00101800-30-10P	159088	1GHz ~ 18GHz	Mar. 10, 2012	Oct. 12, 2012 ~ Oct. 21, 2012	Mar. 09, 2013	Radiation (03CH07-HY)
Pre Amplifier	COM-POWER	PA-103A	161241	10-1000MHz.32dB.GAIN	Feb. 27, 2012	Oct. 12, 2012 ~ Oct. 21, 2012	Feb. 26, 2013	Radiation (03CH07-HY)
EMI Test Receiver	Rohde & Schwarz	ESCI 7	100724	9kHz~7GHz	Sep. 03, 2012	Oct. 12, 2012 ~ Oct. 21, 2012	Sep. 02, 2013	Radiation (03CH07-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170251	15GHz ~ 40GHz	Sep. 28, 2012	Oct. 12, 2012 ~ Oct. 21, 2012	Sep. 27, 2013	Radiation (03CH07-HY)
Loop Antenna	R&S	HFH2-Z2	860004/001	9KHz ~ 30MHz	Jul. 03, 2012	Oct. 12, 2012 ~ Oct. 21, 2012	Jul. 02, 2014	Radiation (03CH07-HY)
EMI Test Receiver	R&S	ESCS 30	100356	9KHz ~ 2.75GHz	Oct. 27, 2011	Oct. 20, 2012	Oct. 26, 2012	Conduction (CO05-HY)
Two-LISN	R&S	ENV216	11-100081	9KHz ~ 30MHz	Dec. 09, 2011	Oct. 20, 2012	Dec. 08, 2012	Conduction (CO05-HY)
Two-LISN	R&S	ENV216	11-100080	9KHz ~ 30MHz	Dec. 06, 2011	Oct. 20, 2012	Dec. 05, 2012	Conduction (CO05-HY)
AC Power Source	APC	APC-1000W	N/A	N/A	N/A	Oct. 20, 2012	N/A	Conduction (CO05-HY)
GPS Station	Pendulum	GSG-54	N/A	N/A	N/A	Oct. 20, 2012	N/A	Conduction (CO05-HY)
System Simulator	R&S	CMU200	116457	N/A	Jun. 24, 2011	Oct. 20, 2012	Jun. 23, 2013	Conduction (CO05-HY)

5 Uncertainty of Evaluation

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

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

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

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	4.72
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Appendix A. Photographs of EUT

Please refer to Sporton report number EP291928 as below.