Compliance Test Report for FCC

Report Number		ESTF150508-001		
Applicant	Company name	SAMSUNG ELECTRONICS CO., LTD.		
	Address	416, Mestan-3-Dong, YoungTong-Gu, Suwon City, Korea		
	Telephone	82-31-277-8818		
Product	Product name	Wireless Mini PCI Card		
	Model No.	SWL-5300M	Manufacturer	SAMSUNG ELECTRO MECHANICS CO., LTD.
	Serial No.	NONE	Country of origin	KOREA
Test date	2005-4-18 ~ 2005-8-04		Date of issue	2005-08-04
Testing location	ESTECH. Co., Ltd. 97-1 Hoiuk-Ri Majang-Myon, Icheon-city, KyungKi-Do, Korea			
Standard	FCC PART 15 2002 , ANSI C 63.4 2003			
Test item	■ Conducted Emission	□ Class A ■ Class B	Test result	OK
	■ Radiated Emission	□ Class A ■ Class B	Test result	OK
Measurement facility registration number		94696		
Tested by	Engineer J.H.Kim	(Signature)		
Reviewed by	Manager Engineer J.M.Yang	(Signature)		
Abbreviation	OK, Pass = Passed, Fail = Failed, N/A = not applicable			

* Note

- This test report is not permitted to copy partly without our permission
- This test result is dependent on only equipment to be used
- This test result based on a single evaluation of one sample of the above mentioned

Contents

1. Laboratory Information

1.1 General

This EUT (Equipment Under Test) has been shown to be capable of compliance with the applicable technical standards and is tested in accordance with the measurement procedures as indicated in this report.
ESTECH Lab attests to accuracy of test data. All measurement reported herein were performed by ESTECH Co., Ltd.
ESTECH Lab assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

1.2 Test Lab.

Corporation Name : ESTECH Co. Ltd

Head Office : Rm 1015, World Venture Center II, 426-5, Gasan-dong, Geumcheon-gu, Seoul, Korea
(Safety & Telecom. Test Lab)

EMC Test Lab : 58-1 Osan-Ri, GaNam-Myon, YeoJoo-Gun, KyungKi-Do, Korea
97-1 Hoiuk-Ri Majang-Myon, Icheon-city, KyungKi-Do, Korea

1.3 Official Qualification(s)

MIC : Granted Accreditation from Ministry of Information & Communication for EMC, Safety and Telecommunication
KOLAS : Accredited Lab By Korea Laboratory Accreditation Schema base on CENELEC requirements
FCC : Filed Laboratory at Federal Communications Commission
VCCI : Granted Accreditation from Voluntary Control Council for Interference from ITE

2. Description of EUT

2.1 Summary of Equipment Under Test

Product Name	: Wireless Mini PCI Card
Model Number	: SWL-5300M
Modulation Type	: DSSS, OFDM
Transfer Rate	: up to 54Mbps
Number of Channe	: 802.11b and 802.11g:11, 802.11a:12
Channel Spacing	: 802.11b and 802.11g: 5MHz ,802.11a:20MHz
Output Power	: 802.11b and 802.11g: 19dBm ,802.11a:17dBm
Serial Number	: NONE
Manufacturer	: SAMSUNG ELECTRO MECHANICS CO., LTD.
Country of origin	: KOREA
Rating	: INPUT:AC120V / 60Hz
Receipt Date	: 2005-04-08

2.2 General descriptions of EUT

This device fully compatible with the 802.11b and g standard to provide a wireless data rate of 11Mbps.
This device fully compatible with the 802.11a standard to provide a wireless data rate of up to 54Mbps
For the detailed features, please refer to the manufacturer's specifications or User's Manual.

3. Test Standards

Test Standard : FCC PART 15 (2002)

This Standard sets out the regulations under which an intentional, unintentional, or incidental radiator may be operated without an individual license. It also contains the technical specifications, administrative requirements and other conditions relating to the marketing of Part 15 devices.

Test Method : ANSI C 63.4 (2003)

This standard sets forth uniform methods of measurement of radio-frequency (RF) signals and noise emitted from both unintentional and intentional emitters of RF energy in the frequency range 9 kHz to 40 GHz. Methods for the measurement of radiated and AC power-line conducted radio noise are covered and may be applied to any such equipment unless otherwise specified by individual equipment requirements. These methods cover measurement of certain decides that deliberately radiate energy, such as intentional emitters, but does not cover licensed transmitters. This standard is not intended for certification/approval of avionic equipment or for industrial, scientific, and medical (ISM) equipment These method apply to the measurement of individual units or systems comprised of multiple units

Summary of Test Results

Applied Satandard : 47 CFR Part 15, Subpart C				
Standard	Test Type	Result	Remark	Limit
15.207	AC Power Conducted Emission	Pass	Meet the requirement	
15.247(a)(2)	Spectrum Bandwidth of a DSSS System	Pass	Meet the requirement	Min. 500kHz
15.247(b)	Maximum Peak ouput power	Pass	Meet the requirement	Max. 30dBm
15.247(c)	Transmitter Radiated Emission	Pass	Meet the requirement	Table 15.209
15.247(d)	Power Spectral Density	Pass	Meet the requirement	Max. 8dBm
15.247(c)	Band Edge Measurement	Pass	Meet the requirement	20dB less

Applied Satandard : 47 CFR Part 15, Subpart E				
Standard	Test Type	Result	Remark	Limit
15.407(b)(5)	AC Power Conducted Emission	Pass	Meet the requirement	
15.407(b/1/2/3)(b)(5)	Electric Field Strength Spurious Emssions, 30MHz ~ 40000MHz	Pass	Meet the requirement	
15.407(a/1/2/3)	Peak Transmit Power	Pass	Meet the requirement	
15.407(a)(6)	Peak Power Excursion	Pass	Meet the requirement	
15.407(a/1/2/3)	Peak Power Spectral Density	Pass	Meet the requirement	
15.407(g)	Frequency Stability	Pass	Meet the requirement	+/- 0.02%

4. Measurement Condition

4.1 EUT Operation(For 802.11b and 802.11g)

a. Channel

Ch.	Frequency	Ch.	Frequency
1	2412MHz	7	2442MHz
2	2417MHz	8	2447MHz
3	2422MHz	9	2452MHz
4	2427MHz	10	2457MHz
5	2432MHz	11	2462MHz
6	2437MHz		

b. Measurement Channel : Low(2412MHz), Middle(2437Mhz),High(2462MHz)

c. Test Mode : Continuous Output, DSSS and OFDM

d. Test rate : the worst case of rate(11Mbps)

4.2 EUT Operation(For 802.11a)

a. Channel

Ch.	Frequency	Ch.	Frequency
1	5180MHz	7	5300MHz
2	5200MHz	8	5320MHz
3	5220MHz	9	5745MHz
4	5240MHz	10	5765MHz
5	5260MHz	11	5785MHz
6	5280MHz	12	5805MHz

b. Measurement Channel : Low(5180MHz), Middle(5280Mhz),High(5805MHz)

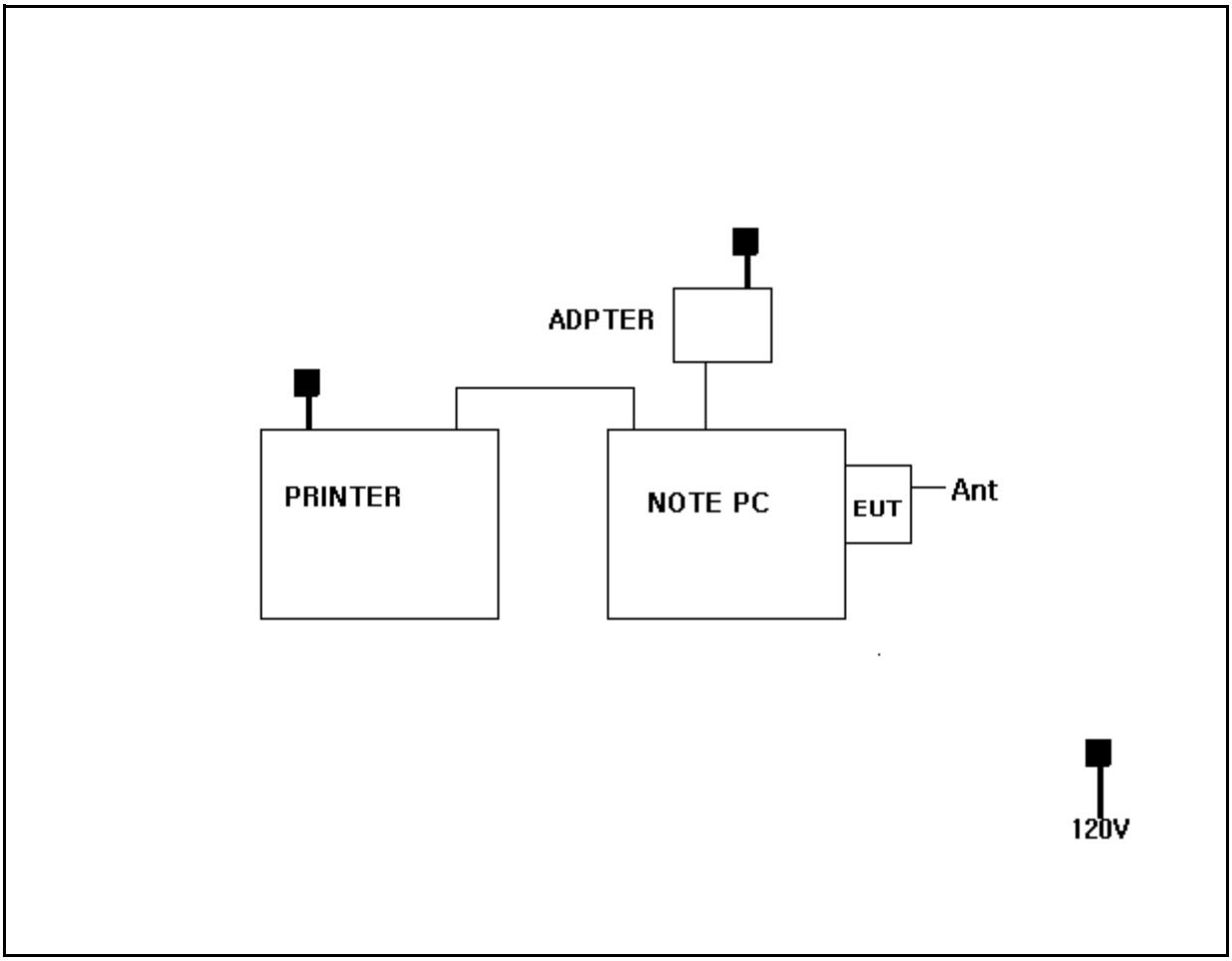
c. Test Mode : Continuous Output, DSSS and OFDM

d. Test rate : the worst case of rate(54Mbps)

4.3 EUT Operation.

* The EUT was in the following operation mode during all testing
* The operational conditions of the EUT was determined by the manufacturer according to the typical use of the EUT with respect to the expected hightest level of emission

4.4 Configuration and Peripherals



4.4 EUT and Support equipment

Equipment Name	Model Name	S/N	Manufacturer	Remark (FCC ID)
Wireless Mini PCI Card	SWL-5300M	NONE	SAMSUNG ELECTRO MECHANICS CO., LTD.	EUT
NOTE PC	PPIIL	35748823888	DELL COMPUTER	-
ADAPTER	PA-1650-05DK	DLLQQ	DONGGUANG LITE POWER 2ND PLANT	-
PRINTER	LQ-570H+	B1021095782	SAMBO COMPUTER	-

4.5 Cable Connecting

Start Equipment		End Equipment		Cable Standard		Remark
Name	I/O port	Name	I/O port	Length	Shielded	
Wireless Mini PCI Card	PCMCIA	NOTE PC	PCMCIA	0	Y	-
NOTE PC	PARALLEL	PRINTER	PARALLEL	2	Y	-
NOTE PC	POWER	ADAPTER	-	2	N	-
						-

5. 6dB Bandwidth Measurement

5.1 Test procedure

The transmitter output was connected to the spectrum analyzer. The bandwidth of the fundamental frequency was measured by spectrum analyzer. The 6dB bandwidth is defined as the bandwidth at 6dB below from peak power point. The minimum of 6dB bandwidth measurement is 0.5MHz.

5.2 Test instruments and measurement setup

The spectrum analyzer is set to as following.

. RBW= 100KHz

. VBW= 100KHz

. Span= 20MHz

. Sweep= suitable duration based on the EUT specification.

6dB Bandwidth Test Instruments

Description	Model	Serial Number
Spectrum Analyzer	E4407B	US42041281
RF Cable	Length: 49cm	-
-Spectrum Analyzer <=> EUT	Loss: 1.1dB	-

5.3 Measurement results

EUT	WLAN Mini PCI	MODEL	SWL-5300M
MODE	CCK	ENVIRONMENTAL CONDITION	24℃, 42%RH
INPUT POWER	120Vac, 60Hz		

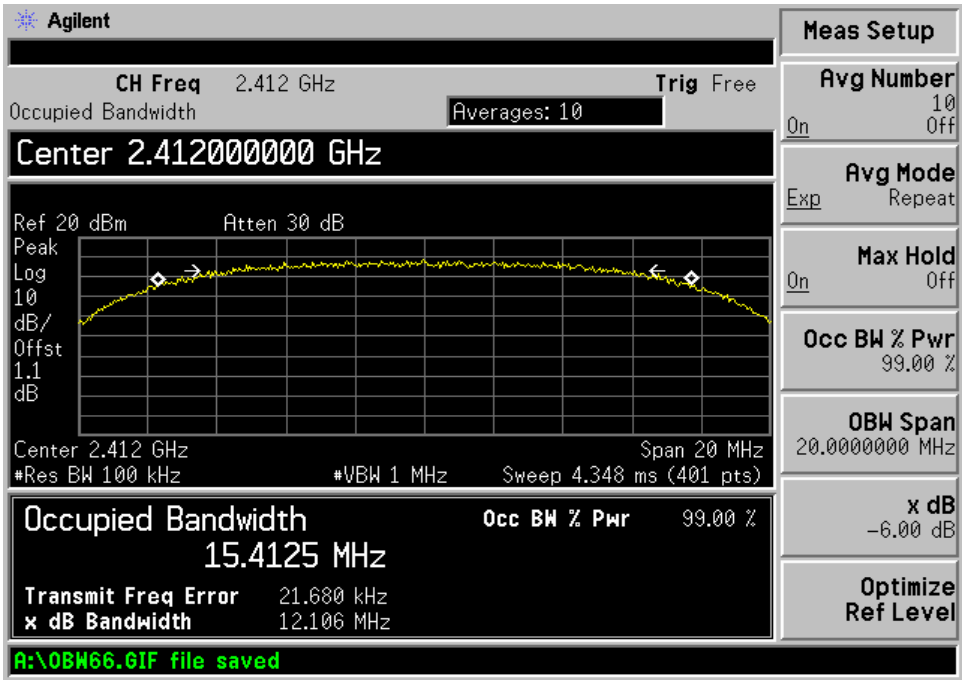
CHANNEL	Channel Frequency (MHz)	Bandwidth at 6dB below(MHz)	Minimum Limit (MHz)	PASS/FAIL
1	2412	12.11	0.5	PASS
6	2437	11.69	0.5	PASS
11	2462	11.93	0.5	PASS

EUT	WLAN Mini PCI	MODEL	SWL-5300M
MODE	OFDM	ENVIRONMENTAL CONDITION	24℃, 49%RH
INPUT POWER	120Vac, 60Hz		

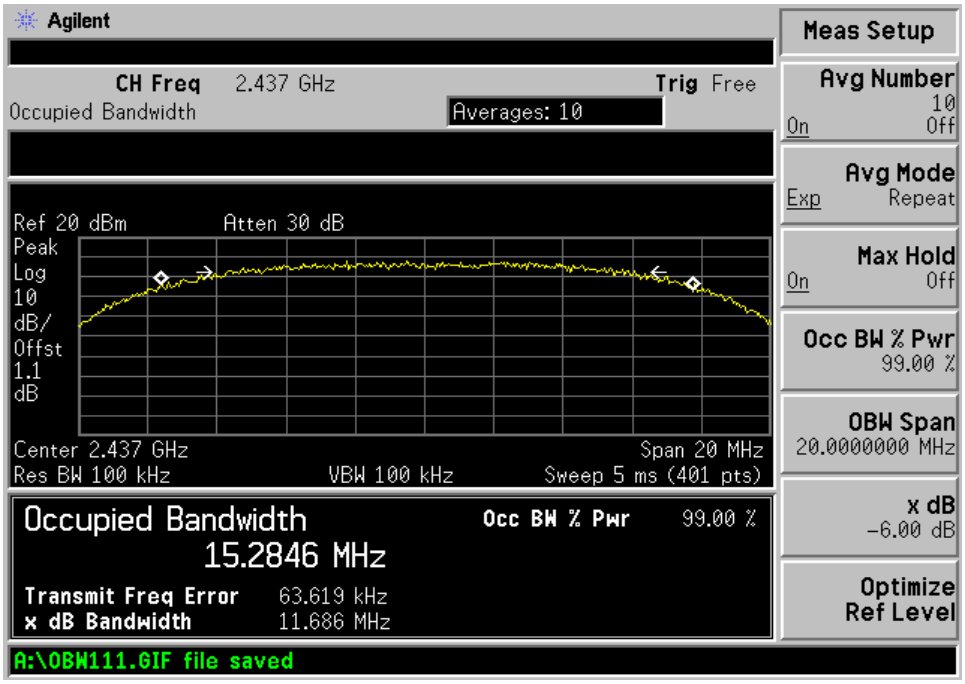
CHANNEL	Channel Frequency (MHz)	Bandwidth at 6dB below(MHz)	Minimum Limit (MHz)	PASS/FAIL
1	2412	16.36	0.5	PASS
6	2437	16.43	0.5	PASS
11	2462	16.45	0.5	PASS

5.4 Trace data

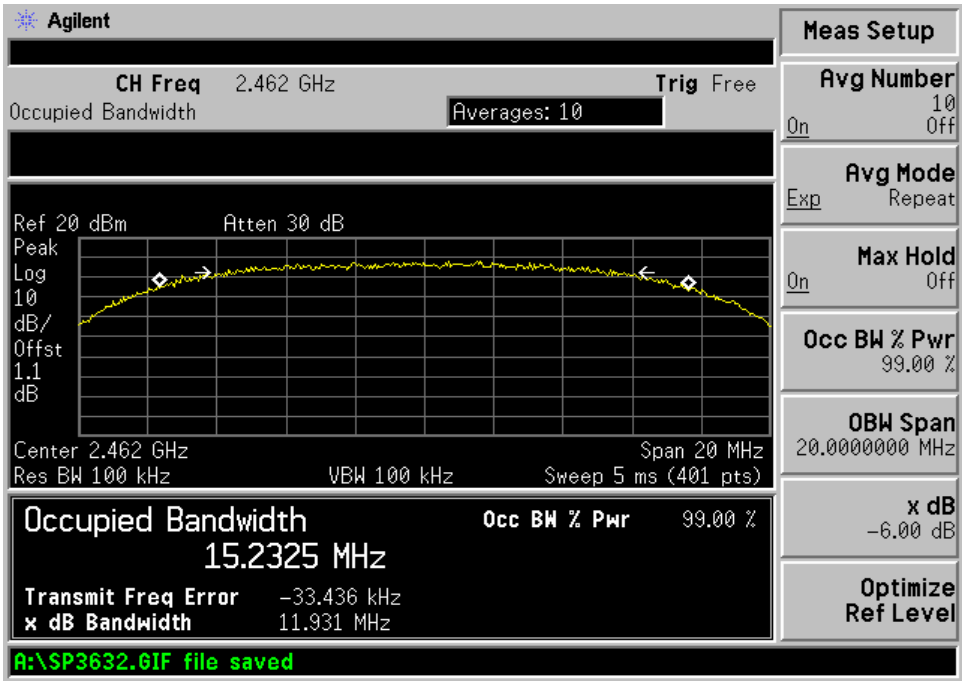
CCK (802.11b-1ch)



CCK (802.11b-6ch)

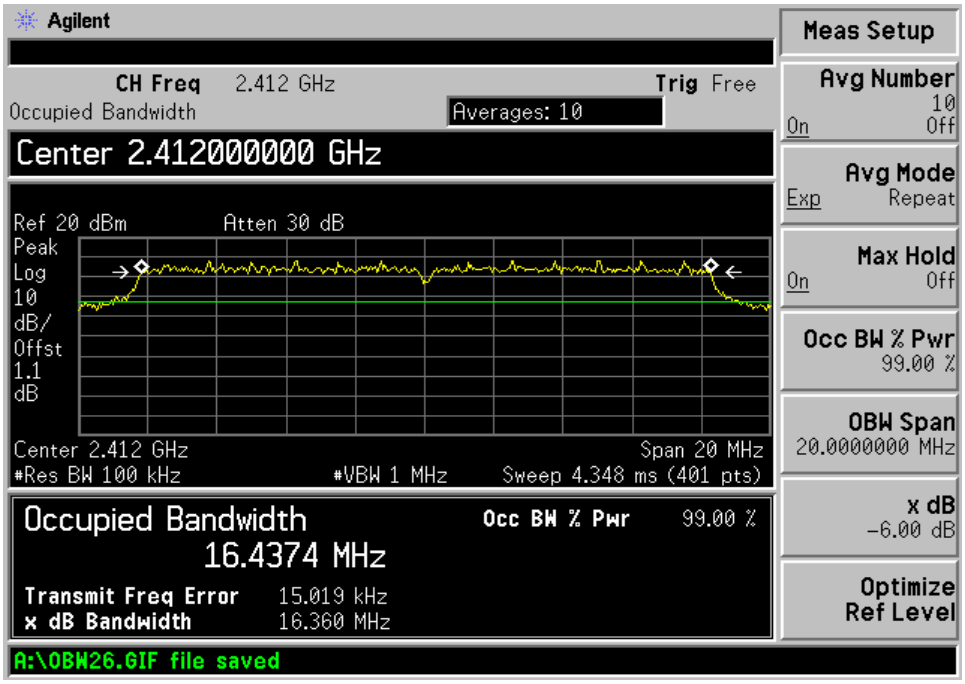


CCK (802.11b-11ch)

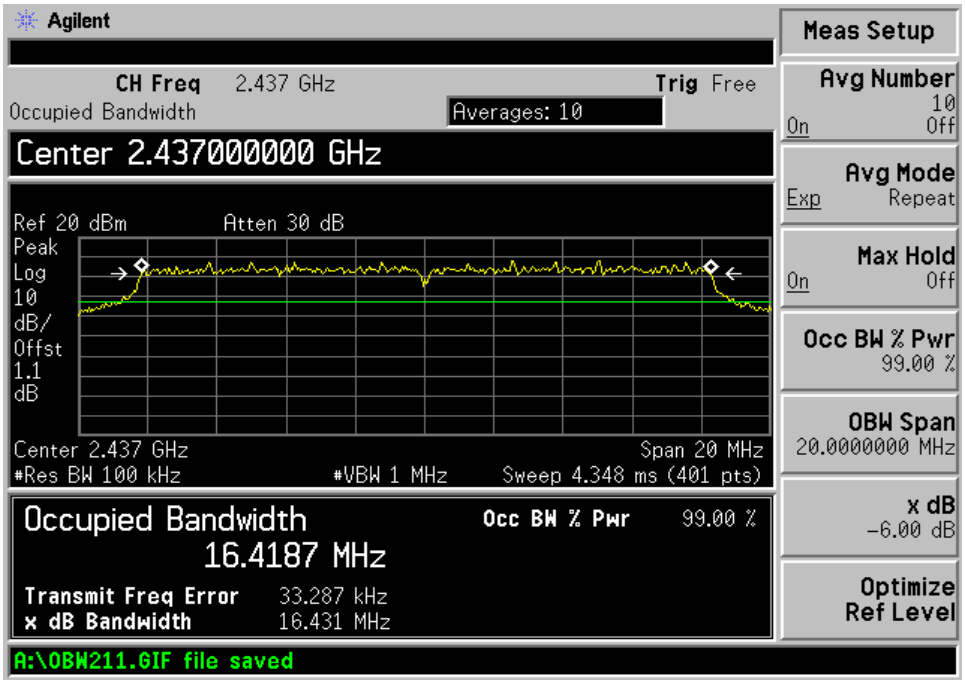


5.4 Trace data

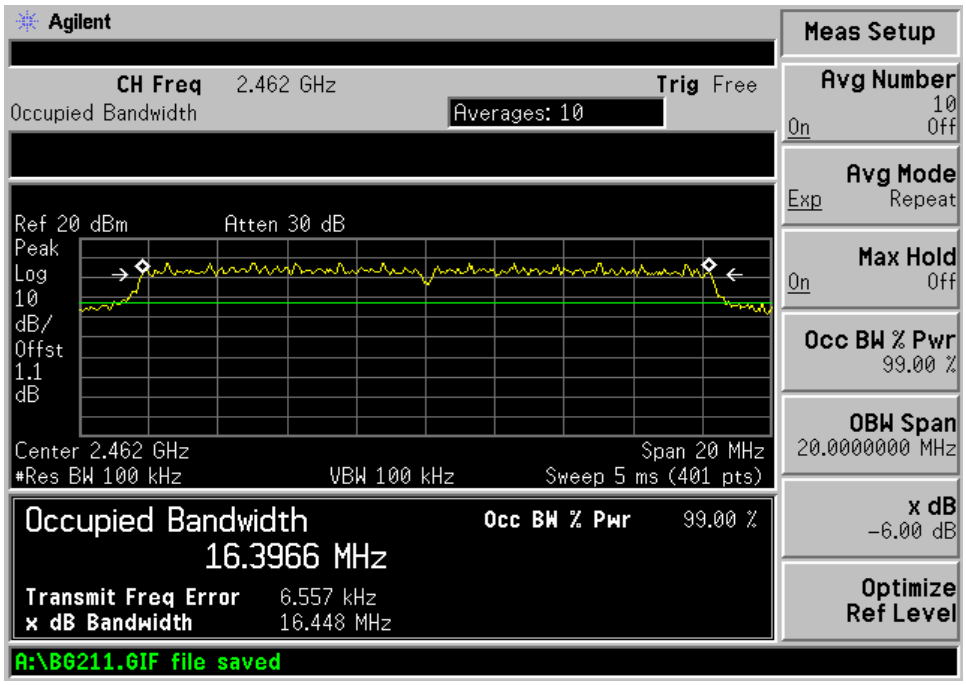
OFDM (802.11g-1ch)



OFDM (802.11g-6ch)



OFDM (802.11g-11ch)



6. MAXIMUM PEAK OUTPUT POWER

6.1 Test procedure

The transmitter antenna terminal is connected to the input of a RF power sensor. Measurement is made while EUT is operating in transmission mode at the appropriate center frequency. The maximum peak output power measurement is 30dBm.

Maximum Peak Output Power Test Instruments

Description	Model	Serial Number
Power Meter	HP E4418A	GB38272717
Power Sensor	HP 8481A	3318A96478
RF Cable:	Length: 49cm	-
-Spectrum Analyzer <=> EUT	Loss: 1.1dB	-

6.2 Measurement results

EUT	WLAN Mini PCI	MODEL	SWL-5300M
MODE	CCK	ENVIRONMENTAL CONDITION	24℃, 42%RH
INPUT POWER	120Vac, 60Hz		

CHANNEL	Channel Frequency (MHz)	Peak Power Output(dBm)		Limit[1W] (dBm)	PASS/FAIL
		(dBm)	(W)		
1	2412	18.8	0.076	30.0	PASS
6	2437	19.0	0.080	30.0	PASS
11	2462	18.7	0.075	30.0	PASS

EUT	WLAN Mini PCI	MODEL	SWL-5300M
MODE	OFDM	ENVIRONMENTAL CONDITION	24℃, 42%RH
INPUT POWER	120Vac, 60Hz		

CHANNEL	Channel Frequency (MHz)	Peak Power Output(dBm)		Limit[1W] (dBm)	PASS/FAIL
		(dBm)	(W)		
1	2412	18.9	0.078	30.0	PASS
6	2437	18.8	0.076	30.0	PASS
11	2462	18.6	0.073	30.0	PASS

7. Transmitter power spectral density

7.1 Test procedure

The peak power density was measured with a spectrum analyzer connected to the antenna terminal, while EUT is operating in transmission mode at the appropriate center frequency. The maximum of power spectral dencity measurement is 8dBm.

7.2 Test instruments and measurement setup

The spectrum analyzer is set to as following.

. RBW= 3KHz

. VBW= 30KHz

. Span= 1.5MHz

. Sweep= 500 seconds (It is allowed to be longer than span/3kHz.)

The peak power density Test Instruments

Description	Model	Serial Number
Spectrum Analyzer	E4407B	US42041281
RF Cable	Length: 49cm	-
-Spectrum Analyzer <=> EUT	Loss: 1.1dB	-

7.3 Measurement results

EUT	WLAN Mini PCI	MODEL	SWL-5300M
MODE	CCK	ENVIRONMENTAL CONDITION	24℃, 42%RH
INPUT POWER	120Vac, 60Hz		

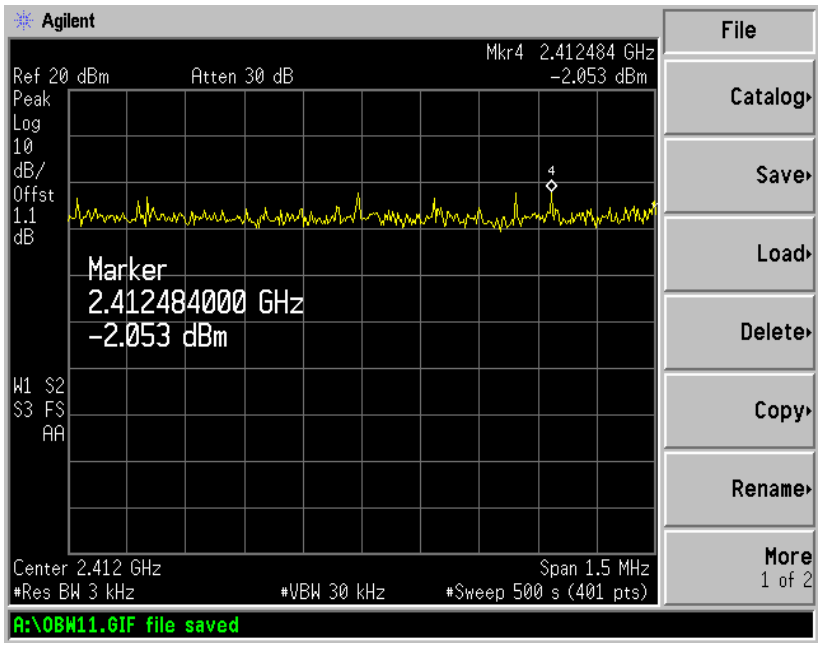
CHANNEL	Channel Frequency (MHz)	RF Power Spectral Density (dBm)	Maximum Limit (dBm)	PASS/FAIL
1	2412.00	-2.05	8.0	PASS
6	2437.00	-0.38	8.0	PASS
11	2462.00	-2.55	8.0	PASS

EUT	WLAN Mini PCI	MODEL	SWL-5300M
MODE	OFDM	ENVIRONMENTAL CONDITION	24℃, 49%RH
INPUT POWER	120Vac, 60Hz		

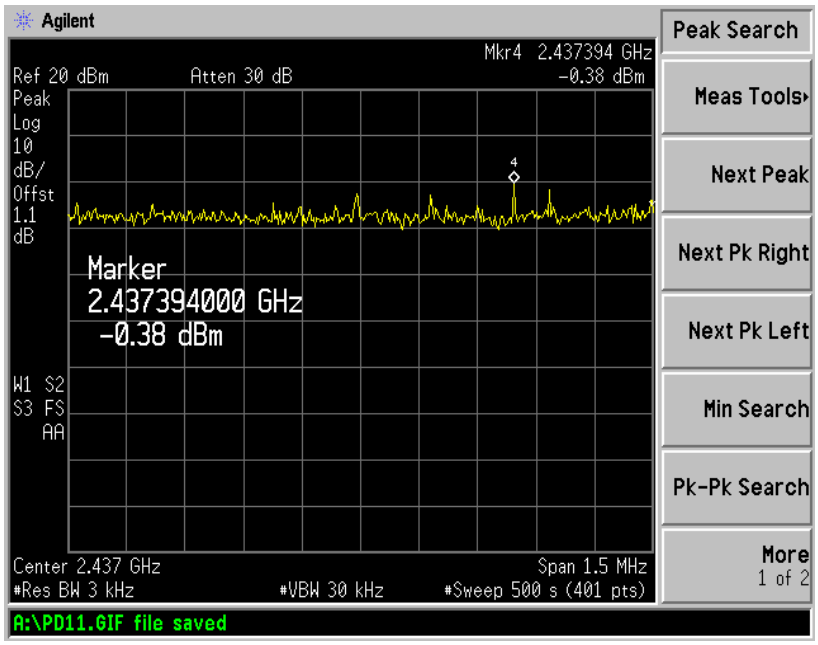
CHANNEL	Channel Frequency (MHz)	RF Power Spectral Density (dBm)	Maximum Limit (dBm)	PASS/FAIL
1	2412.00	-5.71	8.0	PASS
6	2437.00	-6.05	8.0	PASS
11	2462.00	-5.55	8.0	PASS

7.4 Trace data

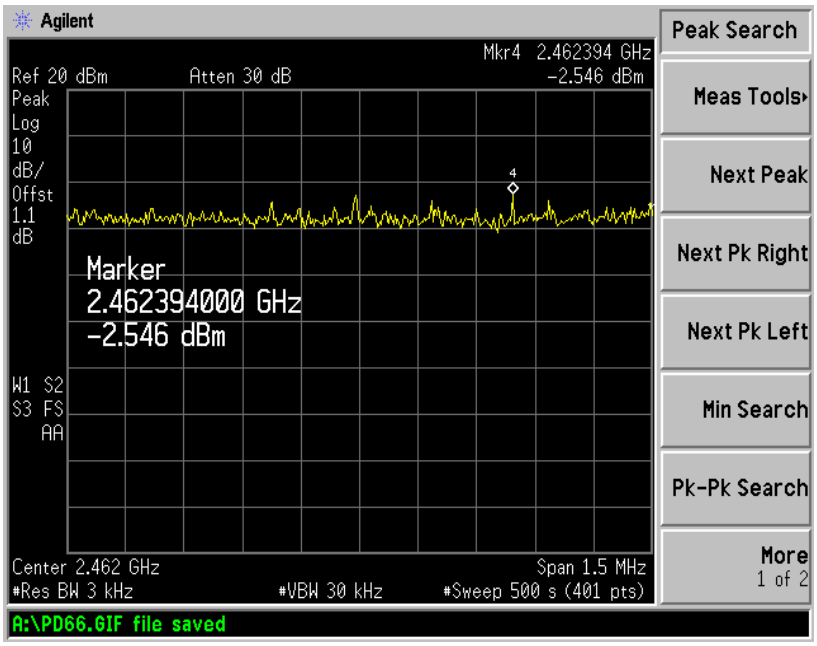
CCK (802.11b-1ch)



CCK (802.11b-6ch)

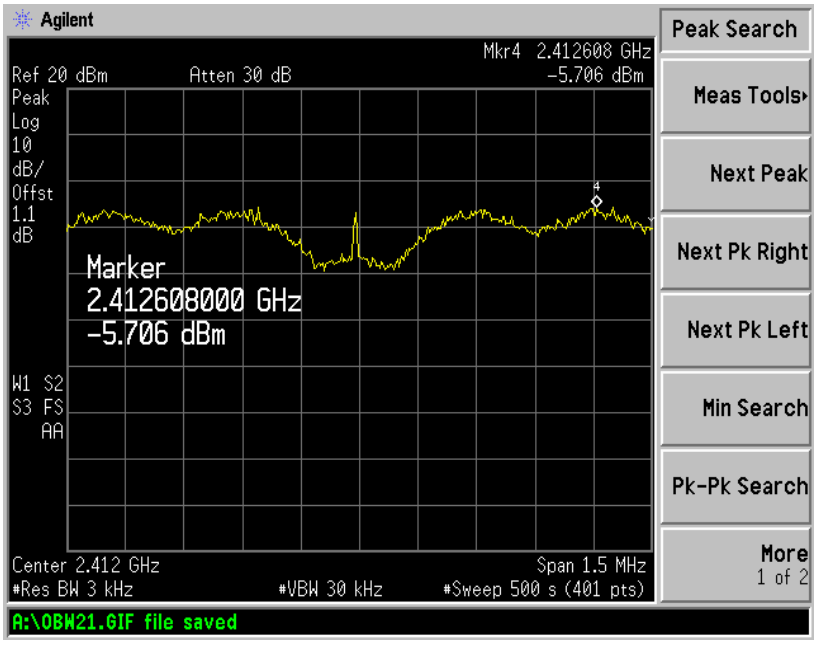


CCK (802.11b-11ch)

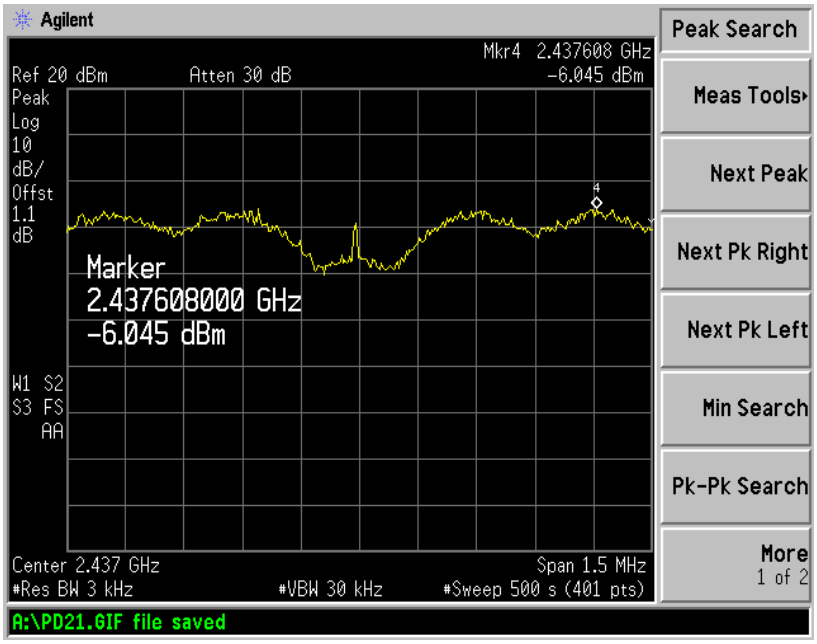


7.4 Trace data

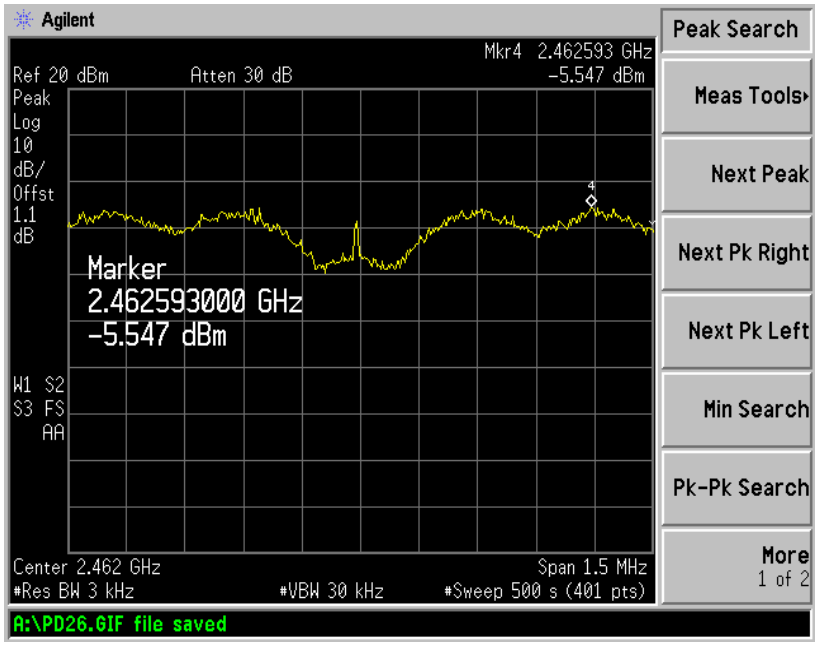
OFDM (802.11g-1ch)



OFDM (802.11g-6ch)



OFDM (802.11g-11ch)



8. band-edge and out of band emissions.

8.1 Test procedure

The radio frequecy power at 20dB down from the highest inband power level is measured with a spectrum analyzer connected to the antenna terminal, while EUT is operating in transmission mode at the appropriate center frequency. The band edge&out of band emission shall be at least 20dB below of the highest inband power level.

8.2 Test instruments and measurement setup

The spectrum analyzer is set to as following.

. RBW= 100KHz(11b), 1MHz(11g)

. VBW= 100KHz(11b), 300Hz(11g)

. Span= suitable frequency span

. Sweep= suitable duration based on the EUT specification.

Band Edge&Out of Emission Test Instruments

Description	Model	Serial Number
Spectrum Analyzer	E4407B	US42041281
RF Cable	Length: 49cm	-
-Spectrum Analyzer <=> EUT	Loss: 1.1dB	-

8.3 Measurement results of band-edge & out of emission

EUT	WLAN Mini PCI	MODEL	SWL-5300M
MODE	CCK	ENVIRONMENTAL CONDITION	24℃, 42%RH
INPUT POWER	120Vac, 60Hz		

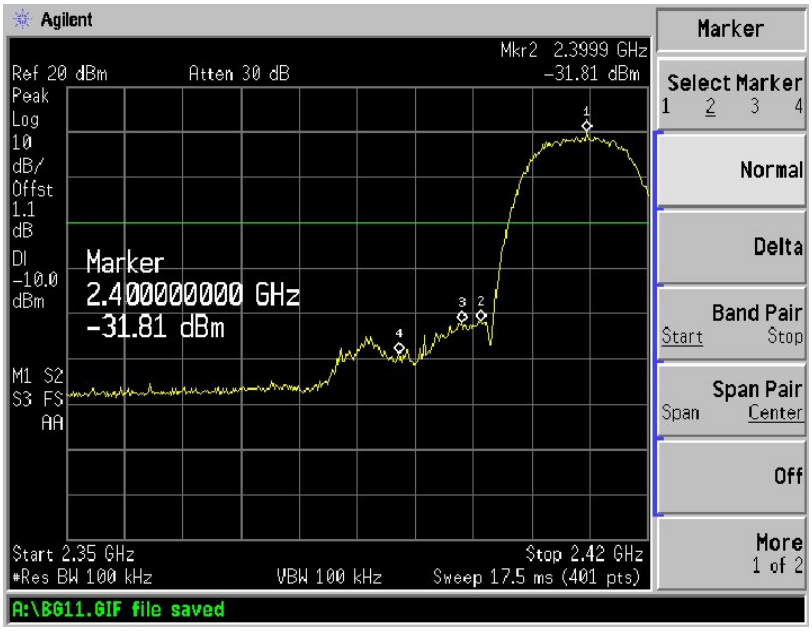
CHANNEL	Channel Frequency (MHz)	Measurement Frequency (MHz)	Peak Level at 20dB below(dBm)	Limit (MHz)
1	2412	2400.0	-31.81	Below 20dB from peak power level to band edge
11	2472	2487.5	-39.50	Below 20dB from peak power level to band edge

EUT	WLAN Mini PCI	MODEL	SWL-5300M
MODE	OFDM	ENVIRONMENTAL CONDITION	24℃, 49%RH
INPUT POWER	120Vac, 60Hz		

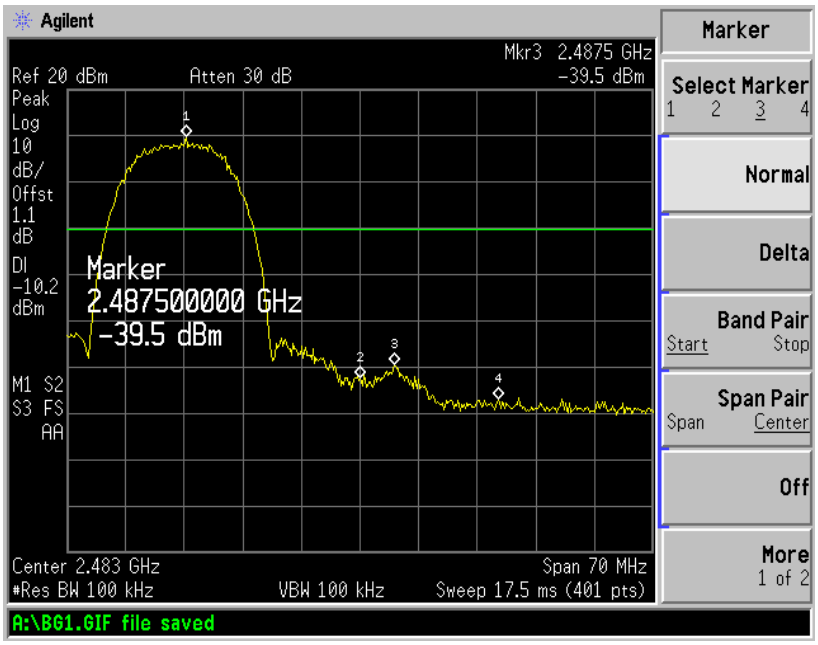
CHANNEL	Channel Frequency (MHz)	Measurement Frequency (MHz)	Peak Level at 20dB below(dBm)	Limit (MHz)
1	2412	2400.0	-20.31	Below 20dB from peak power level to band edge
11	2472	2483.8	-32.24	Below 20dB from peak power level to band edge

8.4 Trace data of band-edge & Out of Emission

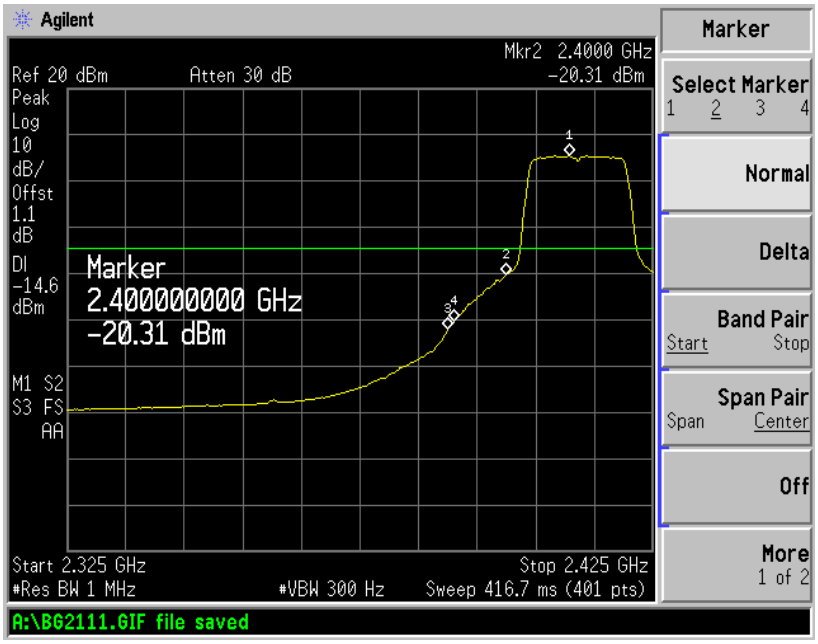
CCK (802.11b-1ch)



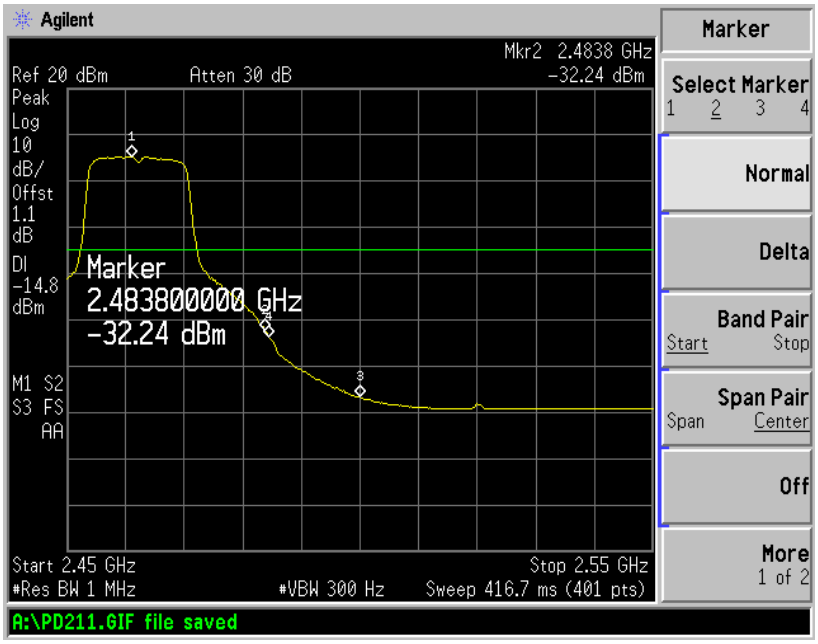
CCK (802.11b-11ch)



OFDM (802.11g-1ch)



OFDM (802.11g-11ch)



9. PEAK TRANSMIT POWER MEASUREMENT

9.1 Test procedure

The peak transmit power was measured with a spectrum analyzer connected to the antenna terminal, while EUT is operating in transmission mode at the appropriate center frequency. Using the spectrum analyzer's channel power measurement function to measure the output power.

9.2 Limits of peak transmit power measurement

Frequency Band	Limit
5.15 - 5.25GHz	The lesser of 50mW(17dBm) or 4dBm+10logB
5.25 - 5.35GHz	The lesser of 250mW(24dBm) or 11dBm+10logB
5.725 - 5.825GHz	The lesser of 1W(30dBm) or 17dBm+10logB

9.3 Test instruments and measurement setup

. RBW= 1MHz

. VBW= 300kHz

. Span= suitable duration based on the EUT specification.

. Sweep= Auto

The peak transmit power measurement Test Instruments

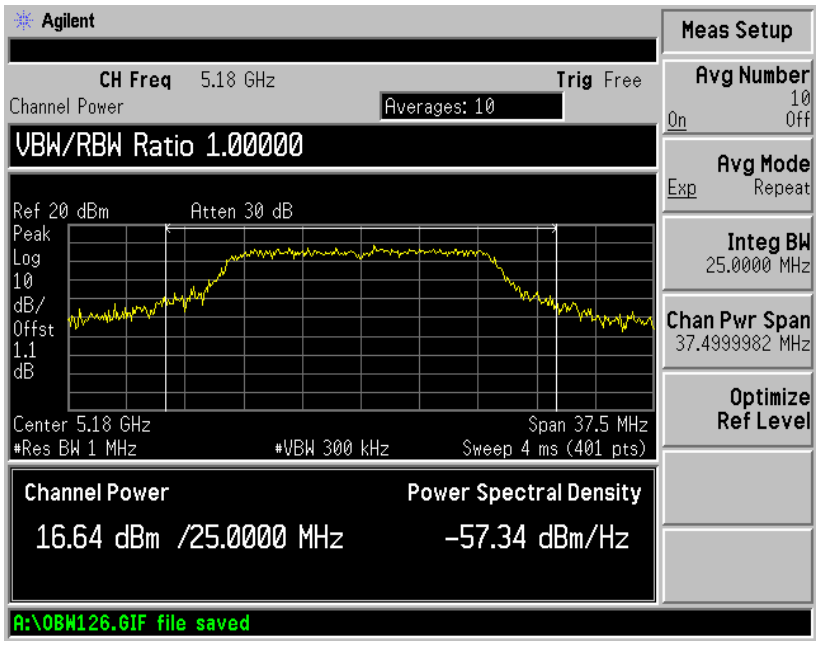
Description	Model	Serial Number
Spectrum Analyzer	E4407B	US42041281
RF Cable	Length: 49cm	-
-Spectrum Analyzer <=> EUT	Loss: 1.1dB	-

9.4 Measurement results

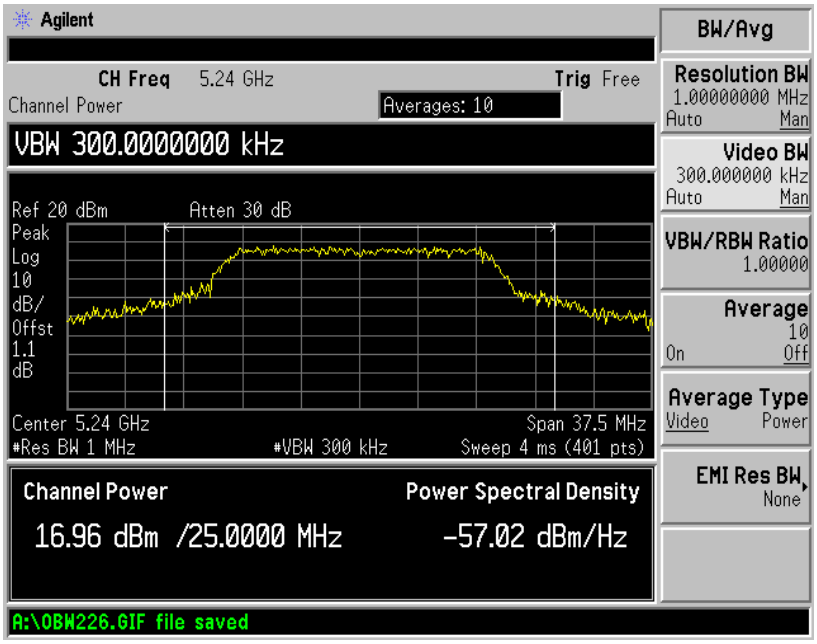
EUT	WLAN Mini PCI	MODEL	SWL-5300M
MODE	CCK	ENVIRONMENTAL CONDITION	24℃, 42%RH
INPUT POWER	120Vac, 60Hz		

CHANNEL	Channel Frequency (MHz)	Peak Power Output (dBm)	Maximum Limit (dBm)	26dBc Occupied Bandwidth (MHz)	PASS/FAIL
1	5180	16.64	17.0	24.36	PASS
4	5240	16.96	17.0	24.53	PASS
5	5260	16.63	24.0	24.73	PASS
8	5320	16.73	24.0	24.73	PASS
9	5745	16.67	30.0	28.76	PASS
12	5805	16.57	30.0	25.97	PASS

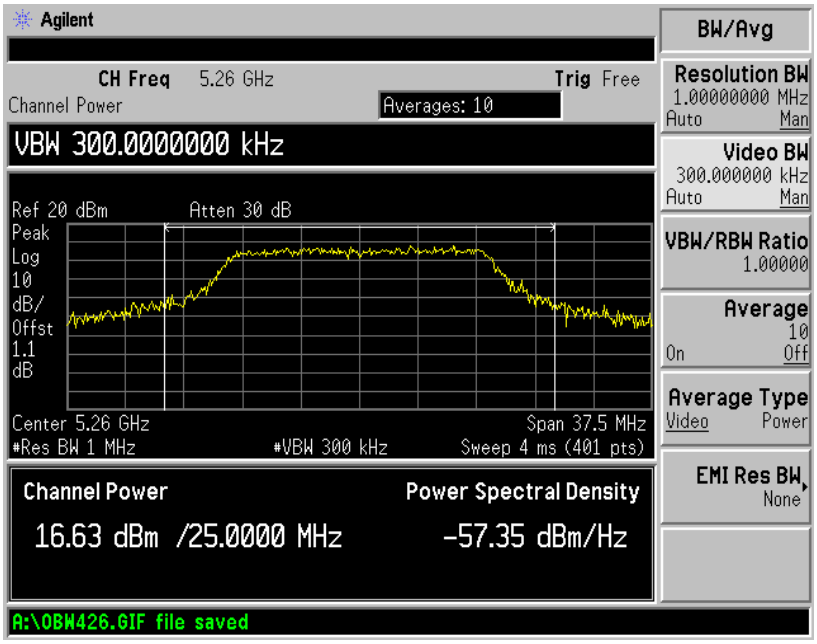
OFDM (802.11a-1ch)



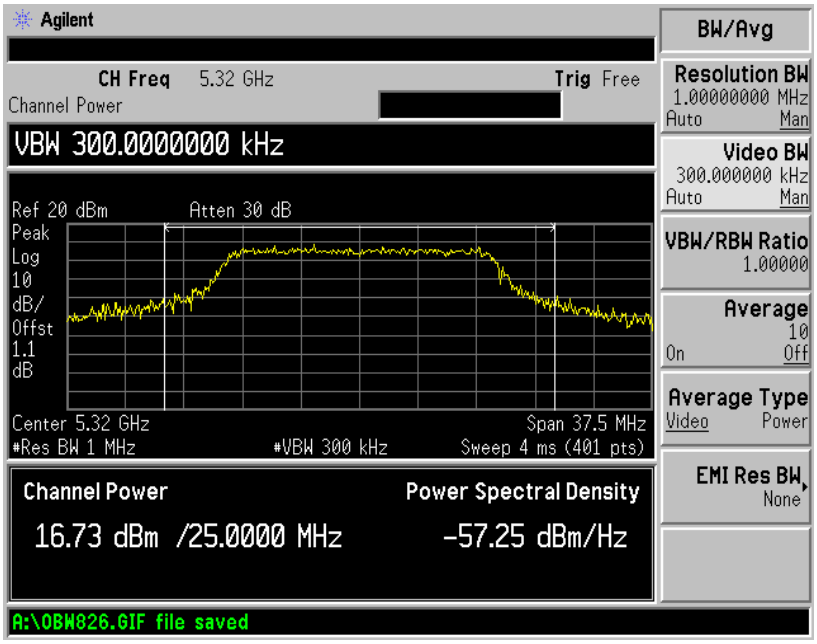
OFDM (802.11a-4ch)



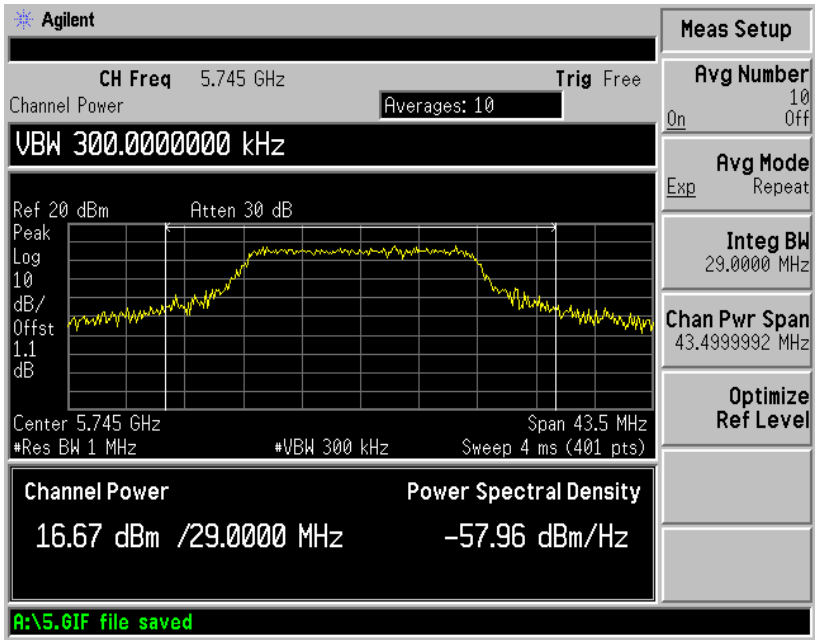
OFDM (802.11a-5ch)



OFDM (802.11a-8ch)

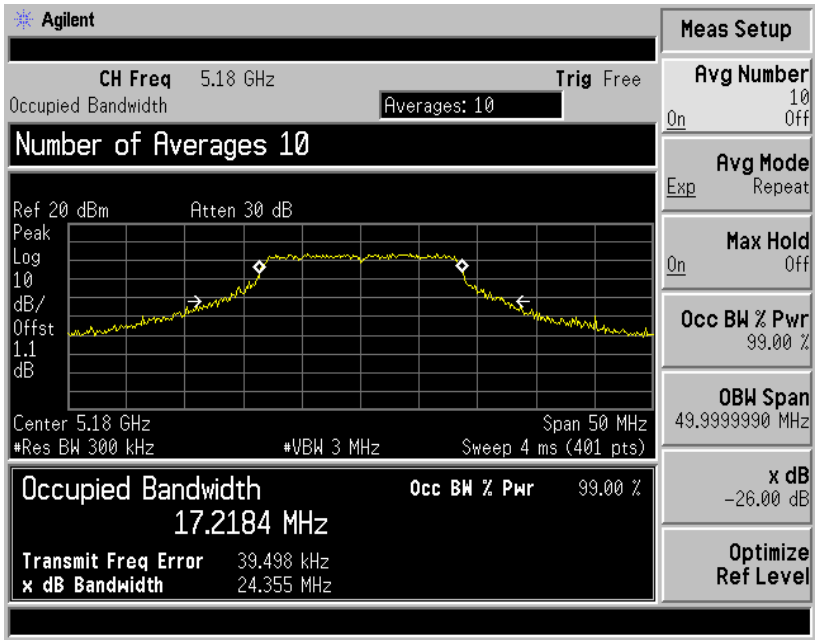


OFDM (802.11a-9ch)

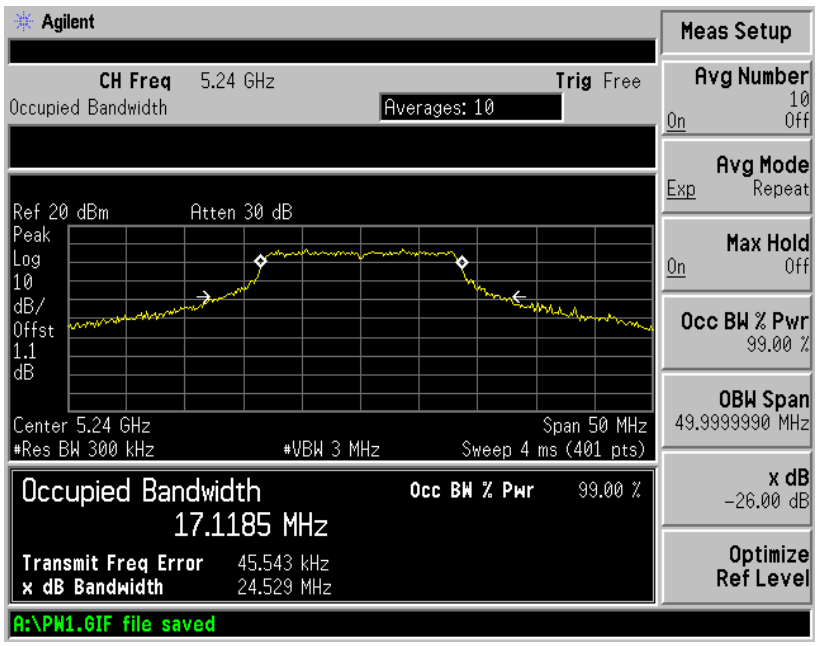


OFDM (802.11a-12ch)

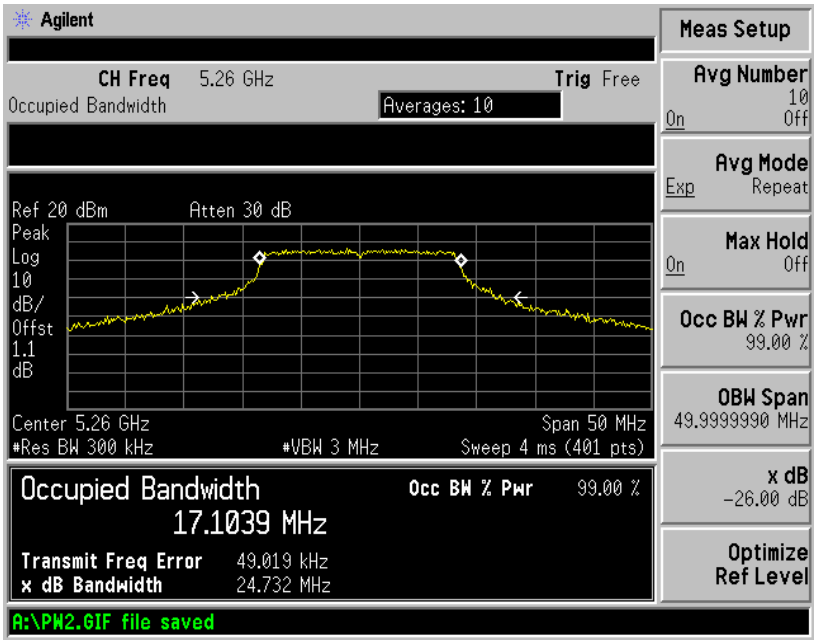
OFDM (802.11a-1ch)



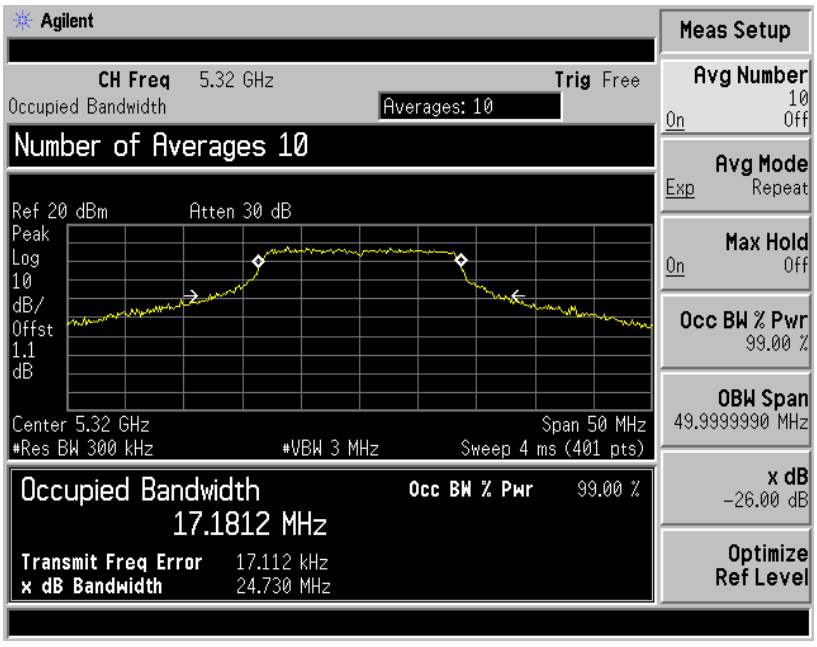
OFDM (802.11a-4ch)



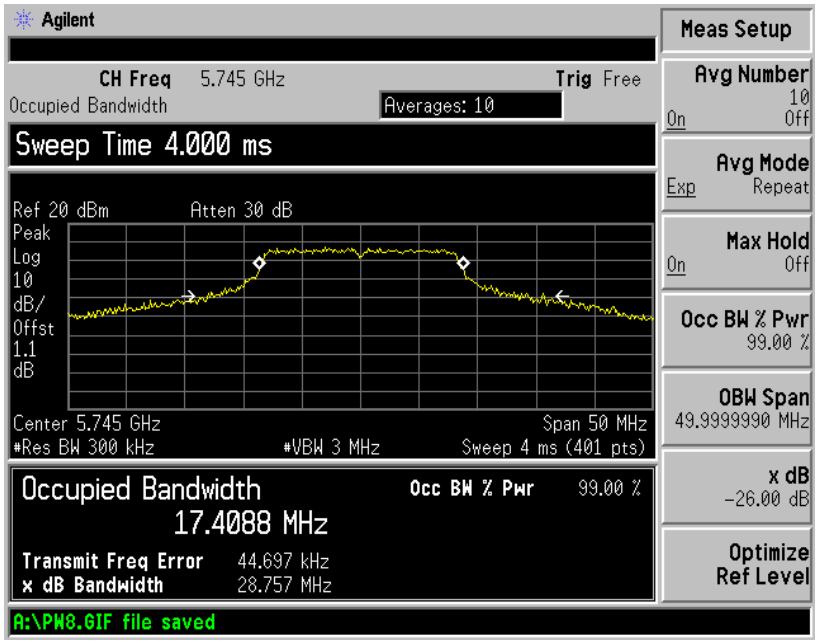
OFDM (802.11a-5ch)



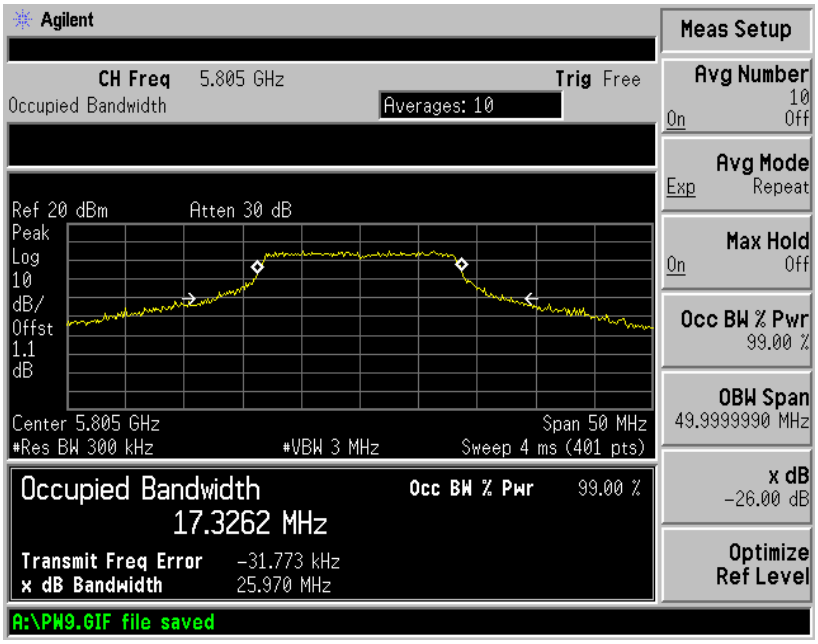
OFDM (802.11a-8ch)



OFDM (802.11a-9ch)



OFDM (802.11a-12ch)



10. PEAK POWER EXCURSION MEASUREMENT

10.1 Test procedure

The peak transmit power was measured with a spectrum analyzer connected to the antenna terminal, while EUT is operating in transmission mode at the appropriate center frequency. Using peak detector and Maxhold function for Trace1 and Trace2.
The largest difference between Trace1 and Trace2 in any 1MHz band on any frequency was recorded.

10.2 Limits of peak power excursion measurement

Frequency Band	Limit
5.15 - 5.25GHz	13dB
5.25 - 5.35GHz	13dB
5.725 - 5.825GHz	13dB

9.3 Test instruments and measurement setup

. Trace1: RBW= 1MHz, VBW= 3MHz

. Trace2: RBW= 1MHz, VBW= 300kHz

. Span= suitable duration based on the EUT specification.

. Sweep= Auto

The peak power excursion measurement Test Instruments

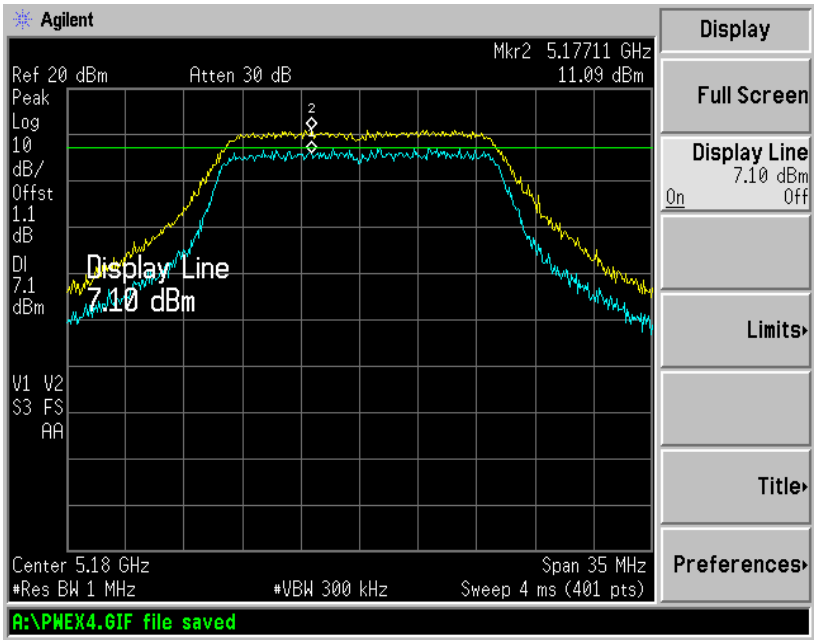
Description	Model	Serial Number
Spectrum Analyzer	E4407B	US42041281
RF Cable	Length: 49cm	-
-Spectrum Analyzer <=> EUT	Loss: 1.1dB	-

9.4 Measurement results

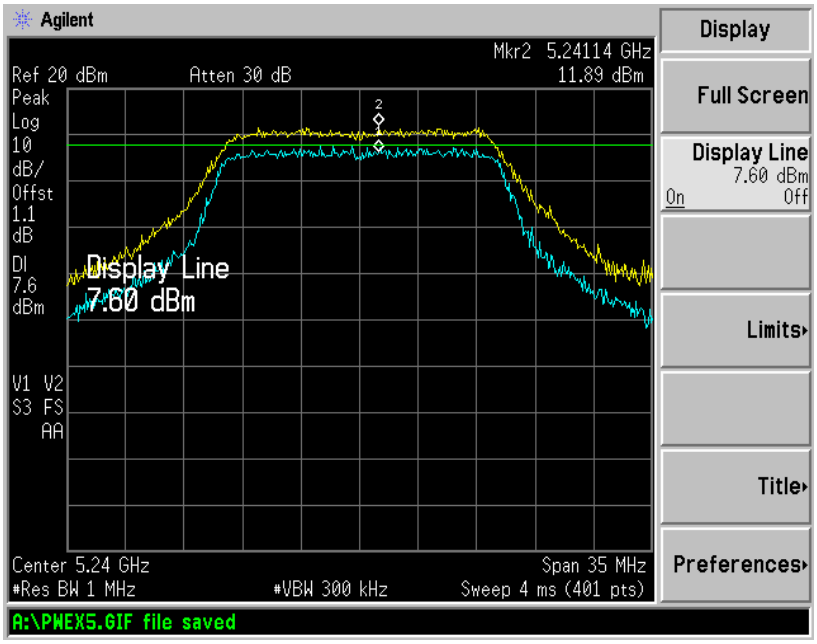
EUT	WLAN Mini PCI	MODEL	SWL-5300M
MODE	CCK	ENVIRONMENTAL CONDITION	24℃, 42%RH
INPUT POWER	120Vac, 60Hz		

CHANNEL	Channel Frequency (MHz)	Peak Power Excursion (dB)	Peak to Average Excursion Limit (dB)	PASS/FAIL
1	5180	3.99	13.0	PASS
4	5240	4.29	13.0	PASS
5	5260	2.84	13.0	PASS
8	5320	3.98	13.0	PASS
9	5745	3.06	13.0	PASS
12	5805	2.85	13.0	PASS

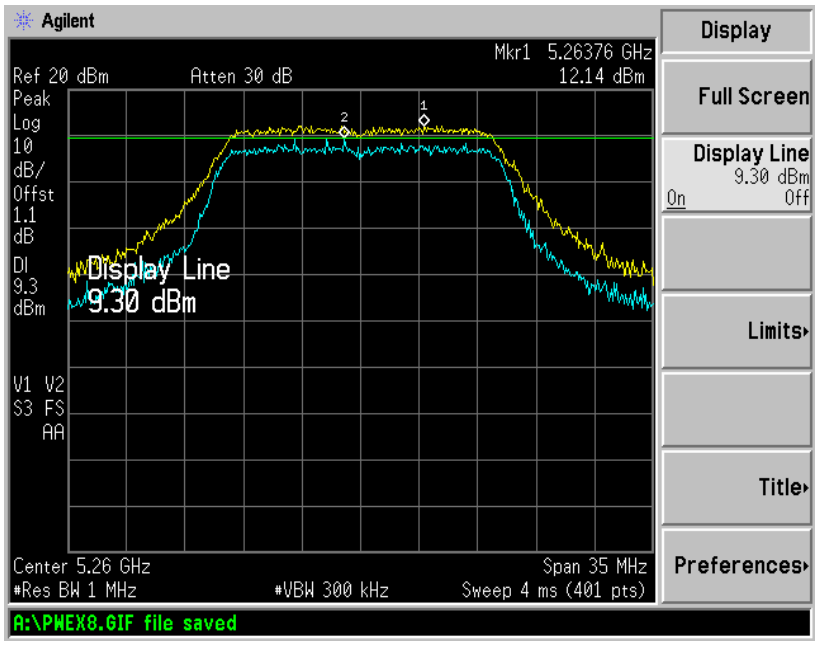
OFDM (802.11a-1ch)



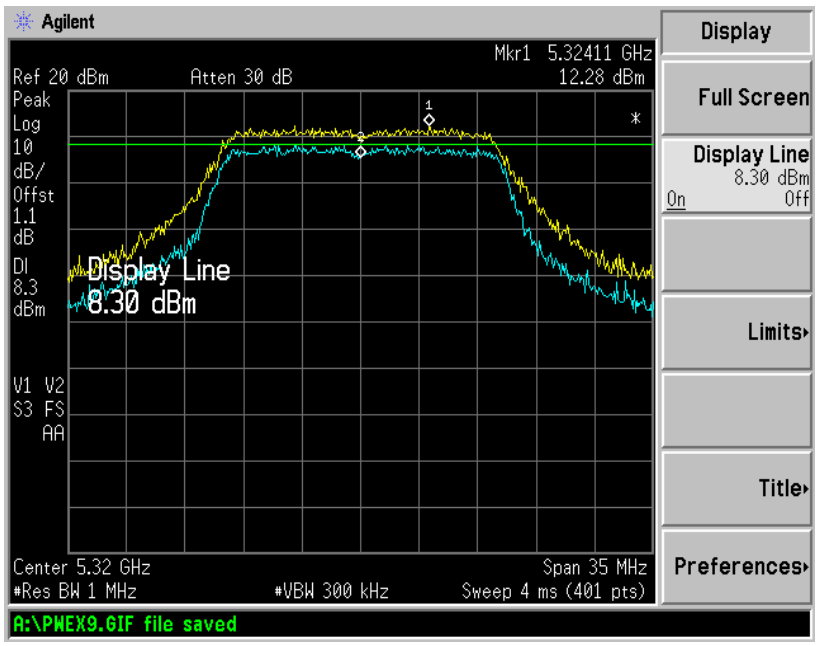
OFDM (802.11a-4ch)



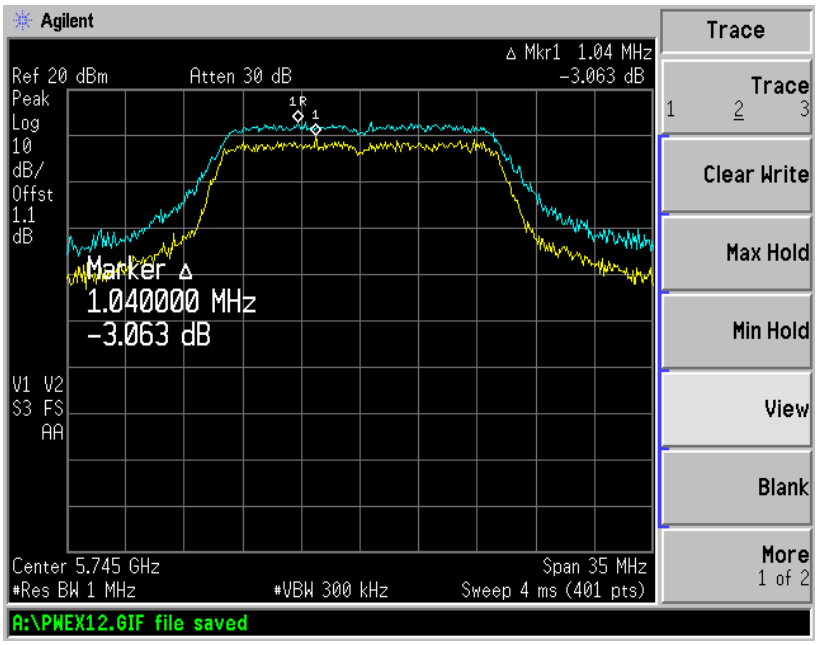
OFDM (802.11a-5ch)



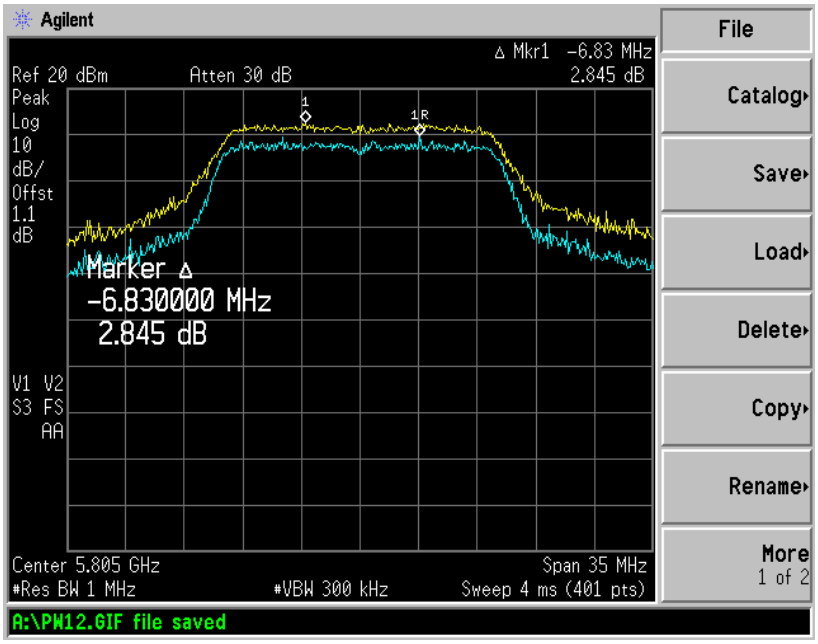
OFDM (802.11a-8ch)



OFDM (802.11a-9ch)



OFDM (802.11a-12ch)



11. PEAK POWER SPECTRAL DENSITY MEASUREMENT

11.1 Test procedure

The peak transmit power was measured with a spectrum analyzer connected to the antenna terminal, while EUT is operating in transmission mode at the appropriate center frequency. The PPSD is the highest level found across the emission in any 1MHz band.

11.2 Limits of peak power spectral density measurement

Frequency Band	Limit
5.15 - 5.25GHz	4dBm
5.25 - 5.35GHz	11dBm
5.725 - 5.825GHz	17dBm

9.3 Test instruments and measurement setup

. RBW= 1MHz

. VBW= 3MHz

. Span= suitable duration based on the EUT specification.

. Sweep= Auto

The peak power spectral density measurement Test Instruments

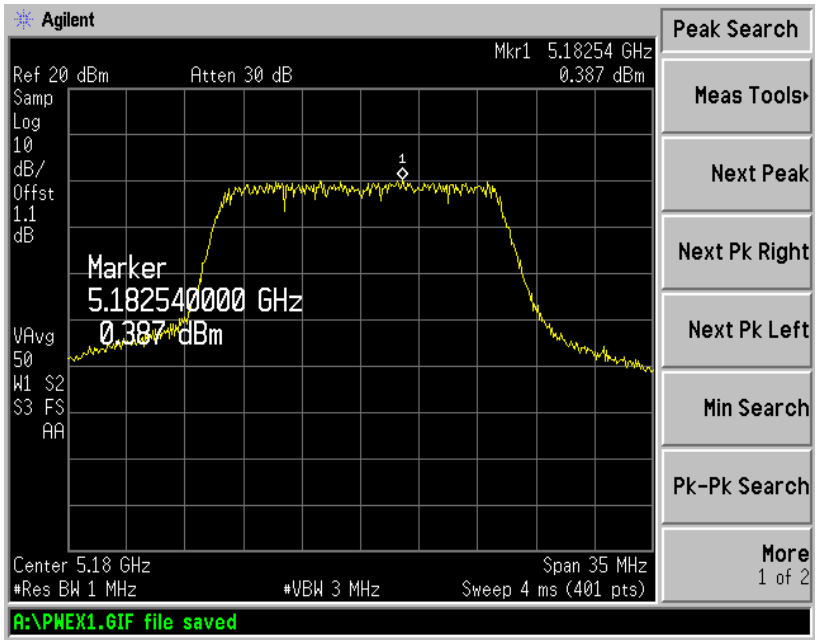
Description	Model	Serial Number
Spectrum Analyzer	E4407B	US42041281
RF Cable	Length: 49cm	-
-Spectrum Analyzer <=> EUT	Loss: 1.1dB	-

9.4 Measurement results

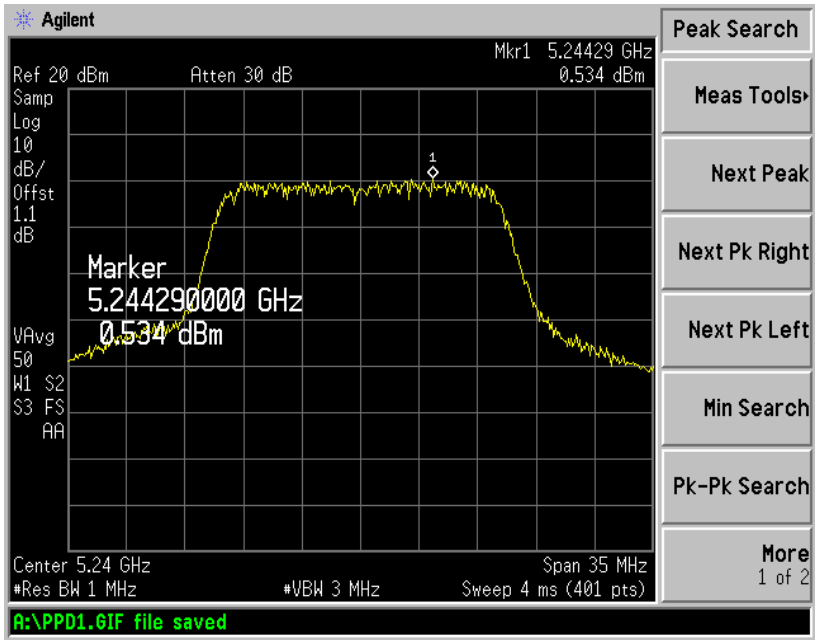
EUT	WLAN Mini PCI	MODEL	SWL-5300M
MODE	CCK	ENVIRONMENTAL CONDITION	24℃, 42%RH
INPUT POWER	120Vac, 60Hz		

CHANNEL	Channel Frequency (MHz)	RF Power Level in 1MHz BW (dBm)	Maximum Limit (dBm)	PASS/FAIL
1	5180	0.39	4.0	PASS
4	5240	0.53	4.0	PASS
5	5260	1.41	11.0	PASS
8	5320	1.42	11.0	PASS
9	5745	2.65	17.0	PASS
12	5805	2.03	17.0	PASS

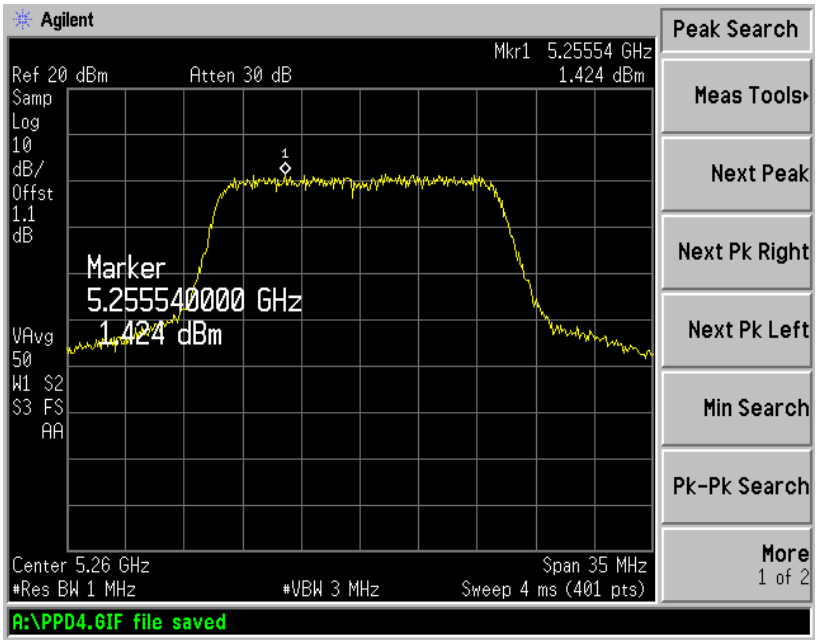
OFDM (802.11a-1ch)



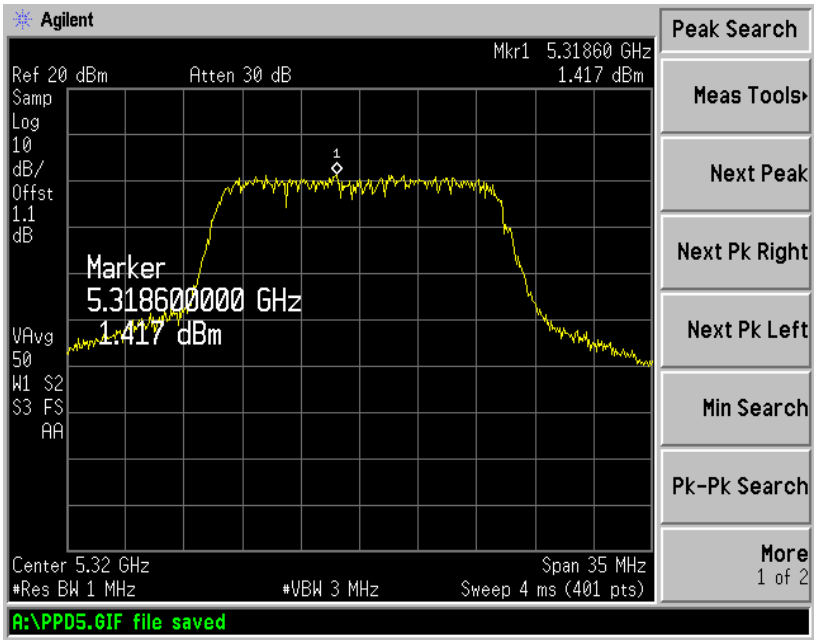
OFDM (802.11a-4ch)



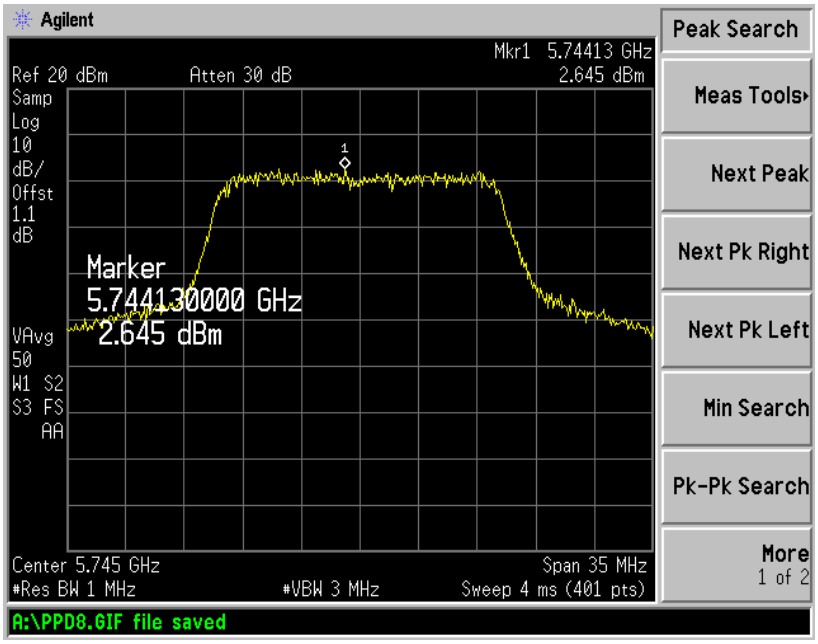
OFDM (802.11a-5ch)



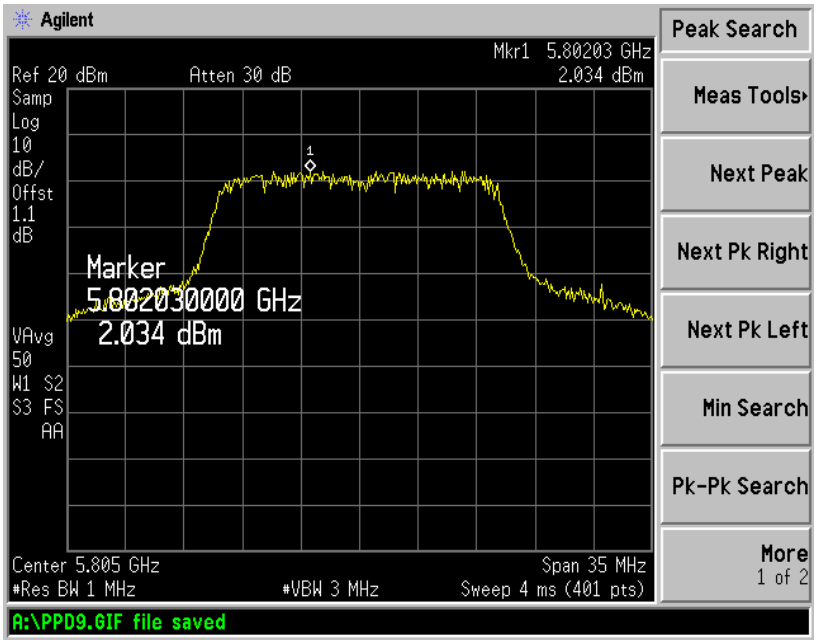
OFDM (802.11a-8ch)



OFDM (802.11a-9ch)



OFDM (802.11a-12ch)



12. FREQUENCY STABILITY

12.1 Test procedure

The transmitter was placed inside the environmental test chamber and nominal DC voltage.
The transmitter output was connected to the spectrum analyzer. The frequency tolerance of the carrier signal was measured by spectrum analyzer while temperature variation of -30℃ to 50℃ at normal supply voltage, and for a variation in the primary supply from 85% to 115% of the rated supply voltage at a temperature of 20℃. And the limit shall be maintained within +/-0.02%

12.2 Test instruments

Frequency Stability Test Instruments

Description	Model	Serial Number
Spectrum Analyzer	E4407B	US42041281
RF Cable	Length: 49cm	-
-Spectrum Analyzer <=> EUT	Loss: 1.1dB	-

12.3 Measurement results

EUT	WLAN Mini PCI	MODEL	SWL-5300M
MODE	CCK	ENVIRONMENTAL CONDITION	24℃, 42%RH
INPUT POWER	120Vac, 60Hz		

Operating Frequency: 5320MHz Limit: +/- 0.02%

TEMP. (℃)	VOLTAGE (%)	POWER (VDC)	FREQ. (MHz)	Deviation (%)
50	115	126.5	5319.9752	-0.000466
	100	110	5319.9753	-0.000464
	85	93.5	5319.9752	-0.000466
40	115	126.5	5319.9748	-0.000474
	100	110	5319.9749	-0.000472
	85	93.5	5319.9747	-0.000476
30	115	126.5	5319.9755	-0.000461
	100	110	5319.9756	-0.000459
	85	93.5	5319.9745	-0.000479
20	115	126.5	5319.9772	-0.000429
	100	110	5319.9764	-0.000444
	85	93.5	5319.9770	-0.000432
10	115	126.5	5319.9750	-0.000470
	100	110	5319.9745	-0.000479
	85	93.5	5319.9744	-0.000481
0	115	126.5	5319.9735	-0.000498
	100	110	5319.9745	-0.000479
	85	93.5	5319.9747	-0.000476
-10	115	126.5	5319.9715	-0.000536
	100	110	5319.9720	-0.000526
	85	93.5	5319.9710	-0.000545
-20	115	126.5	5319.9682	-0.000598
	100	110	5319.9654	-0.000650
	85	93.5	5319.9640	-0.000677
-30	115	126.5	5319.9624	-0.000707
	100	110	5319.9602	-0.000748
	85	93.5	5319.9615	-0.000724

13. band edges measurement

13.1 Test procedure

The transmitter output was connected to the spectrum analyzer. Set both RBW and VBW of spectrum analyzer to 1MHz with suitable frequency span. The band edges was measured and recorded.

13.2 Test instruments and measurement setup

The spectrum analyzer is set to as following.

. Peak (RBW= VBW=1MHz)

. Average(RBW=1MHz, VBW=300Hz)

. Span= suitable frequency span

. Sweep= suitable duration based on the EUT specification.

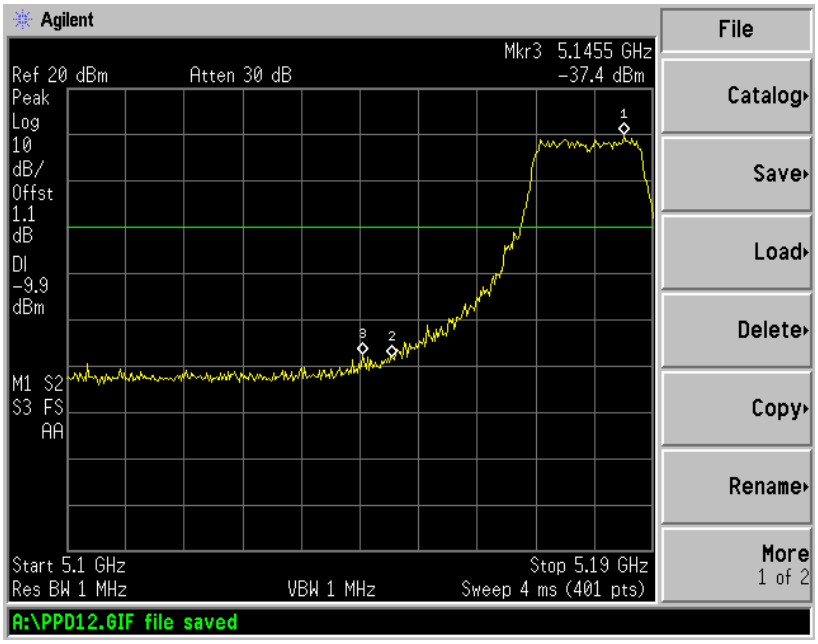
Band Edges Test Instruments

Description	Model	Serial Number
Spectrum Analyzer	E4407B	US42041281
RF Cable	Length: 49cm	-
-Spectrum Analyzer <=> EUT	Loss: 1.1dB	-

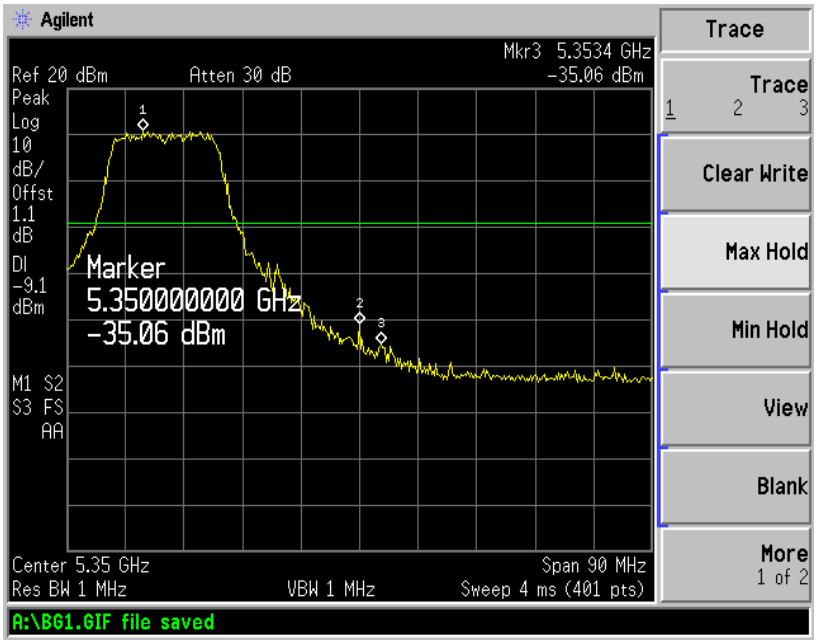
13.3 Measurement results of band-edges

EUT	WLAN Mini PCI	MODEL	SWL-5300M
MODE	CCK	ENVIRONMENTAL CONDITION	24℃, 42%RH
INPUT POWER	120Vac, 60Hz		

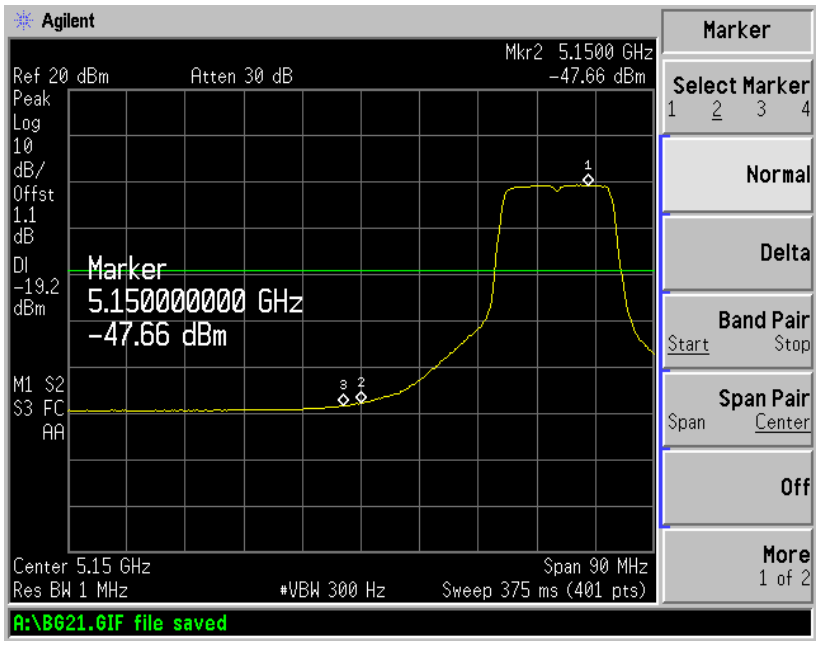
OFDM (802.11a-1ch)



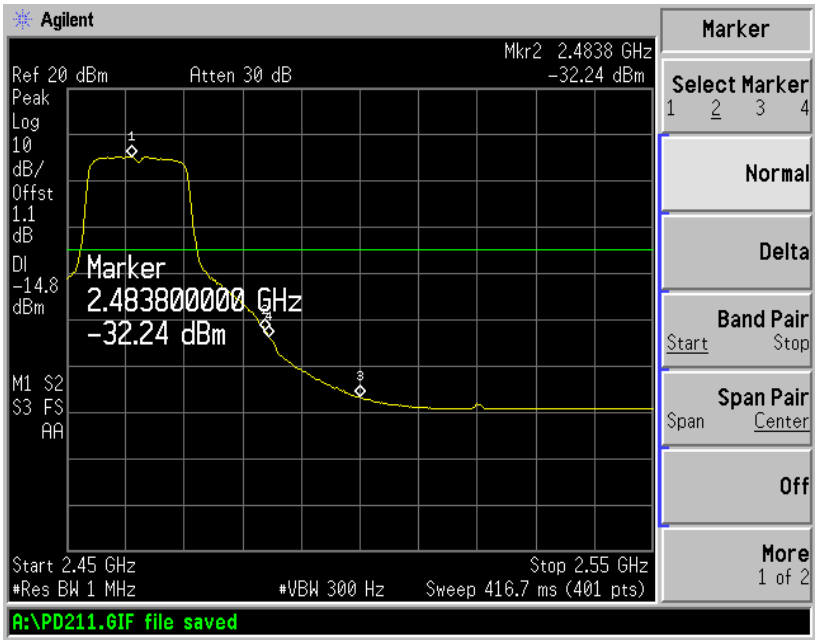
OFDM (802.11a-8ch)



OFDM (802.11a-1ch)



OFDM (802.11a-8ch)



14. Measurement of radiated disturbance

Above 30 MHz Electric Field strength was measured in accordance with FCC Part 15 (2002) & ANSI C 63.4 (2003). The test setup was made according to FCC Part 15 (2002) & ANSI C 63.4 (2003) on an open test site, which allows a 3m distance measurement. The EUT was placed in the center of wooden turntable. The height of this table was 0.8m. The measurement was conducted with both horizontal and vertical antenna polarization. The turntable has fully rotated. For further description of the configuration refer to the picture of the test set-up.

14.1 Measurement equipments

Equipment Name	Type	Manufacturer	Serial No.	Next Calibration date
TEST Receive	ESPI7	Rohde & Schwarz	100185	2005. 8. 20
Spectrum Analyzer	R3261C	ADVANTEST	61720116	2006. 4. 10
LogBicon Antenna	VULB 9160	S/B	3142	2005. 7. 06
Horn Antenna	BBHA 9120 D	SCHWARZBECK	352	2006. 4. 06
Spectrum Analyzer	8563E	HP	3623A05297	2006. 3. 3
Turn Table	2087	EMCO	2129	-
Antenna Mast	2070-01	EMCO	9702-203	-
ANT Mast Controller	2090	EMCO	1535	-
Turn Table Controller	2090	EMCO	1535	-

14.2 Environmental Condition

Test Place : Open site(3m)

Temperature (°C) : 30 ℃

Humidity (%) : 40 %

14.3 Test Data

CCK(802.11b)

Measurement Distance : 3 m

Frequency (MHz)	Reading (dBμV)	Position (V/H)	Height (m)	Correction Factor		Result Value		
				Ant Factor (dB)	Cable (dB)	Limit (dBμV/m)	Result (dBμV/m)	Margin (dBμV/m)
99.67	23.50	H	2.0	10.21	1.5	43.5	35.21	-8.29
166.55	24.30	H	1.8	13.52	1.9	43.5	39.75	-3.75
199.99	18.30	H	1.5	10.38	2.1	43.5	30.78	-12.72
233.18	28.00	H	1.4	11.39	2.2	46.0	41.62	-4.38
266.16	16.40	H	1.2	12.34	2.5	46.0	31.20	-14.80
299.82	24.20	H	1.1	13.19	2.6	46.0	39.99	-6.01
433.11	22.70	H	1.0	16.03	3.4	46.0	42.13	-3.87
233.07	17.10	H	1.0	11.38	2.2	46.0	30.71	-15.29
666.09	11.30	H	1.0	19.80	4.2	46.0	35.33	-10.67
800	9.90	H	1.0	21.76	4.5	46.0	36.16	-9.84
Remark	H : Horizontal, V : Vertical Test Mode:802.11b							

OFDM(802.11g)

Measurement Distance : 3 m

Frequency (MHz)	Reading (dBμV)	Position (V/H)	Height (m)	Correction Factor		Result Value		
				Ant Factor (dB)	Cable (dB)	Limit (dBμV/m)	Result (dBμV/m)	Margin (dBμV/m)
99.67	25.10	H	2.5	10.21	1.5	43.5	36.81	-6.69
166.56	24.20	H	1.5	13.52	1.9	43.5	39.65	-3.85
199.63	19.21	H	1.4	10.41	2.1	43.5	31.72	-11.78
233.18	28.20	H	1.1	11.39	2.2	46.0	41.82	-4.18
266.28	22.80	H	1.0	12.34	2.5	46.0	37.61	-8.39
299.84	23.90	H	1.0	13.19	2.6	46.0	39.69	-6.31
366.46	23.00	H	1.0	14.55	3.0	46.0	40.55	-5.45
400.018	17.40	H	1.0	15.32	3.1	46.0	35.82	-10.18
433.12	22.70	H	1.0	16.03	3.4	46.0	42.13	-3.87
499.73	18.10	H	1.0	17.06	3.6	46.0	38.76	-7.24
599.7	18.40	H	1.0	19.15	4.0	46.0	41.55	-4.45
666.09	11.20	H	1.0	19.80	4.2	46.0	35.23	-10.77
800.01	9.20	H	1.0	21.76	4.5	46.0	35.46	-10.54
900.43	10.60	H	1.0	22.59	4.8	46.0	37.99	-8.01
Remark	H : Horizontal, V : Vertical Test Mode:802.11g							

OFDM(802.11a)

Measurement Distance : 3 m

Frequency (MHz)	Reading (dBμV)	Position (V/H)	Height (m)	Correction Factor		Result Value		
				Ant Factor (dB)	Cable (dB)	Limit (dBμV/m)	Result (dBμV/m)	Margin (dBμV/m)
99.67	24.10	H	2.0	10.21	1.5	43.5	35.81	-7.69
166.53	23.00	H	1.8	13.52	1.9	43.5	38.46	-5.04
199.99	20.30	H	1.5	10.38	2.1	43.5	32.78	-10.72
233.18	28.30	H	1.4	11.39	2.2	46.0	41.92	-4.08
266.16	18.40	H	1.2	12.34	2.5	46.0	33.20	-12.80
299.83	24.80	H	1.1	13.19	2.6	46.0	40.59	-5.41
433.12	22.00	H	1.0	16.03	3.4	46.0	41.43	-4.57
500.21	14.20	H	1.0	17.06	3.6	46.0	34.86	-11.14
533.1	16.70	H	1.0	17.56	3.7	46.0	37.96	-8.04
666.09	10.10	H	1.0	19.80	4.2	46.0	34.13	-11.87
800.02	8.70	H	1.0	21.76	4.5	46.0	34.96	-11.04
Remark	H : Horizontal, V : Vertical Test Mode:802.11a							

CCK(802.11b)

Measurement Distance : 3 m

Frequency (MHz)	Reading (dBμV)	Position (V/H)	Height (m)	Correction Factor		Result Value		
				Ant Factor (dB)	Cable (dB)	Limit (dBμV/m)	Result (dBμV/m)	Margin (dBμV/m)
2390	64.00	H	1.4	27.64	-33.0	74.0	58.61	-15.39
2390	69.17	V	1.3	27.64	-33.0	74.0	63.78	-10.22
2390	55.33	H	1.4	27.64	-33.0	54.0	49.94	-4.06
2390	53.00	V	1.3	27.64	-33.0	54.0	47.61	-6.39
2412	98.14	H	1.8	27.62	-33.0	OB	92.73	
2412	86.14	H	1.0	27.62	-33.0	OB	80.73	
2412	98.91	V	1.6	27.62	-33.0	OB	93.50	
2412	90.74	V	1.6	27.62	-33.0	OB	85.33	
4824	63.14	H	1.6	31.30	-32.3	74.0	62.13	-11.87
4824	63.11	V	1.5	31.30	-32.3	74.0	62.10	-11.90
7236	52.41	H	1.5	36.54	-32.0	74.0	56.92	-17.08
7236	54.31	V	1.4	36.54	-32.0	74.0	58.82	-15.18
9648	49.91	H	1.5	37.98	-31.8	74.0	56.06	-17.94
9648	48.17	V	1.2	37.98	-31.8	74.0	54.32	-19.68

Remark	H : Horizontal, V : Vertical TEST MODE : 802.11b - CH1(2412MHz) *Cable Loss=Cable Loss+Amp *OB=Fundamental Freqency

Measurement Distance : 3 m

Frequency (MHz)	Reading (dBμV)	Position (V/H)	Height (m)	Correction Factor		Result Value		
				Ant Factor (dB)	Cable (dB)	Limit (dBμV/m)	Result (dBμV/m)	Margin (dBμV/m)
2437	96.14	H	1.9	27.61	-33.0	OB	90.72	
2437	87.64	H	1.9	27.61	-33.0	OB	82.22	
2437	99.46	V	1.6	27.61	-33.0	OB	94.04	
2437	88.36	V	1.6	27.61	-33.0	OB	82.94	
4874	62.84	H	1.7	31.37	-32.3	74.0	61.90	-12.10
4874	63.14	V	1.8	31.37	-32.3	74.0	62.20	-11.80
7311	51.37	H	1.5	36.56	-32.0	74.0	55.89	-18.11
7311	56.37	V	1.2	36.56	-32.0	74.0	60.89	-13.11
9748	50.64	H	1.3	38.12	-31.8	74.0	56.93	-17.07
9648	51.31	V	1.4	37.98	-31.8	74.0	57.46	-16.54
Remark	H : Horizontal, V : Vertical TEST MODE : 802.11b - CH6(2437MHz) *Cable Loss=Cable Loss+Amp *OB=Fundamental Freqency							

Measurement Distance : 3 m

Frequency (MHz)	Reading (dBμV)	Position (V/H)	Height (m)	Correction Factor		Result Value		
				Ant Factor (dB)	Cable (dB)	Limit (dBμV/m)	Result (dBμV/m)	Margin (dBμV/m)
2462	93.47	H	1.9	27.60	-33.0	OB	88.04	
2462	83.41	H	1.9	27.60	-33.0	OB	77.98	
2462	93.46	V	1.4	27.60	-33.0	OB	88.03	
2462	86.19	V	1.4	27.60	-33.0	OB	80.76	
2483.5	64.67	H	1.8	27.59	-33.0	74.0	59.23	-14.77
2483.5	68.17	V	1.6	27.59	-33.0	74.0	62.73	-11.27
2483.5	55.67	H	1.8	27.59	-33.0	54.0	50.23	-3.77
2483.5	54.00	V	1.6	27.59	-33.0	54.0	48.56	-5.44
4924	64.31	H	1.6	31.44	-32.3	74.0	63.44	-10.56
4924	65.33	V	1.5	31.44	-32.3	74.0	64.46	-9.54
7386	51.50	H	1.4	36.59	-32.1	74.0	56.02	-17.98
7386	53.61	V	1.2	36.59	-32.1	74.0	58.13	-15.87
9848	49.44	H	1.3	38.18	-31.8	74.0	55.81	-18.19
9848	50.33	V	1.4	38.18	-31.8	74.0	56.70	-17.30

Remark	H : Horizontal, V : Vertical TEST MODE : 802.11b - CH11(2462MHz) *Cable Loss=Cable Loss+Amp *OB=Fundamental Freqency

OFDM(802.11g)

Measurement Distance : 3 m

Frequency (MHz)	Reading (dBμV)	Position (V/H)	Height (m)	Correction Factor		Result Value		
				Ant Factor (dB)	Cable (dB)	Limit (dBμV/m)	Result (dBμV/m)	Margin (dBμV/m)
2390	65.00	H	1.9	27.64	-33.0	74.0	59.61	-14.39
2390	68.00	V	1.6	27.64	-33.0	74.0	62.61	-11.39
2390	55.00	H	1.9	27.64	-33.0	54.0	49.61	-4.39
2390	56.00	V	1.6	27.64	-33.0	54.0	50.61	-3.39
2412	92.31	H	1.7	27.62	-33.0	OB	86.90	
2412	88.61	H	1.7	27.62	-33.0	OB	83.20	
2412	98.49	V	1.6	27.62	-33.0	OB	93.08	
2412	91.31	V	1.6	27.62	-33.0	OB	85.90	
4824	59.88	H	1.5	31.30	-32.3	74.0	58.87	-15.13
4824	61.39	V	1.3	31.30	-32.3	74.0	60.38	-13.62
7236	54.63	H	1.4	36.54	-32.0	74.0	59.14	-14.86
7236	57.34	V	1.2	36.54	-32.0	74.0	61.85	-12.15
9648	50.16	H	1.3	37.98	-31.8	74.0	56.31	-17.69
9648	51.31	V	1.2	37.98	-31.8	74.0	57.46	-16.54
Remark	H : Horizontal, V : Vertical TEST MODE : 802.11g - CH1(2412MHz) *Cable Loss=Cable Loss+Amp *OB=Fundamental Freqency							

Measurement Distance : 3 m

Frequency (MHz)	Reading (dBμV)	Position (V/H)	Height (m)	Correction Factor		Result Value		
				Ant Factor (dB)	Cable (dB)	Limit (dBμV/m)	Result (dBμV/m)	Margin (dBμV/m)
2437	93.41	H	1.8	27.61	-33.0	OB	87.99	
2437	88.74	H	1.8	27.61	-33.0	OB	83.32	
2437	98.61	V	1.7	27.61	-33.0	OB	93.19	
2437	91.34	V	1.7	27.61	-33.0	OB	85.92	
4874	60.69	H	1.6	31.37	-32.3	74.0	59.75	-14.25
4874	62.31	V	1.4	31.37	-32.3	74.0	61.37	-12.63
7311	58.64	H	1.5	36.56	-32.0	74.0	63.16	-10.84
7311	59.34	V	1.5	36.56	-32.0	74.0	63.86	-10.14
9748	49.12	H	1.3	38.12	-31.8	74.0	55.41	-18.59
9648	46.19	V	1.5	37.98	-31.8	74.0	52.34	-21.66
Remark	H : Horizontal, V : Vertical TEST MODE : 802.11g- CH6(2437MHz) *Cable Loss=Cable Loss+Amp *OB=Fundamental Freqency							

Measurement Distance : 3 m

Frequency (MHz)	Reading (dBμV)	Position (V/H)	Height (m)	Correction Factor		Result Value		
				Ant Factor (dB)	Cable (dB)	Limit (dBμV/m)	Result (dBμV/m)	Margin (dBμV/m)
2462	91.58	H	1.9	27.60	-33.0	OB	86.15	
2462	82.50	H	1.9	27.60	-33.0	OB	77.07	
2462	93.49	V	1.6	27.60	-33.0	OB	88.06	
2462	85.38	V	1.6	27.60	-33.0	OB	79.95	
2482	63.00	H	1.4	27.59	-33.0	74.0	57.56	-16.44
2482	64.00	V	1.6	27.59	-33.0	74.0	58.56	-15.44
2482	51.00	H	1.4	27.59	-33.0	54.0	45.56	-8.44
2482	52.00	V	1.6	27.59	-33.0	54.0	46.56	-7.44
4924	57.84	H	1.6	31.44	-32.3	74.0	56.97	-17.03
4924	63.14	V	1.5	31.44	-32.3	74.0	62.27	-11.73
7386	54.63	H	1.5	36.59	-32.1	74.0	59.15	-14.85
7386	56.31	V	1.3	36.59	-32.1	74.0	60.83	-13.17
9848	48.14	H	1.3	38.18	-31.8	74.0	54.51	-19.49
9848	40.96	V	1.5	38.18	-31.8	74.0	47.33	-26.67

Remark	H : Horizontal, V : Vertical TEST MODE : 802.11g - CH11(2462MHz) *Cable Loss=Cable Loss+Amp *OB=Fundamental Freqency

OFDM(802.11a)

Measurement Distance : 3 m

Frequency (MHz)	Reading (dBμV)	Position (V/H)	Height (m)	Correction Factor		Result Value		
				Ant Factor (dB)	Cable (dB)	Limit (dBμV/m)	Result (dBμV/m)	Margin (dBμV/m)
5158	62.33	H	1.8	31.65	-32.3	74.0	61.63	-12.37
5158	65.00	V	1.7	31.65	-32.3	74.0	64.30	-9.70
5158	42.67	H	1.8	31.65	-32.3	54.0	41.97	-12.03
5158	46.00	V	1.7	31.65	-32.3	54.0	45.30	-8.70
5180	81.67	H	1.9	31.67	-32.4	OB	80.98	
5180	72.00	H	1.9	31.67	-32.4	OB	71.31	
5180	84.83	V	1.9	31.67	-32.4	OB	84.14	
5180	74.67	V	1.9	31.67	-32.4	OB	73.98	
10360	48.67	H	1.6	38.75	-31.4	74.0	56.05	-17.95
10360	53.00	V	1.4	38.75	-31.4	74.0	60.38	-13.62
15540	49.50	H	1.4	37.81	-28.5	74.0	58.82	-15.18
15540	56.17	V	1.9	37.81	-28.5	74.0	65.49	-8.51

Remark	H : Horizontal, V : Vertical TEST MODE : 802.11a - CH1(5180MHz) *Cable Loss=Cable Loss+Amp *OB=Fundamental Freqency

Measurement Distance : 3 m

Frequency (MHz)	Reading (dBμV)	Position (V/H)	Height (m)	Correction Factor		Result Value		
				Ant Factor (dB)	Cable (dB)	Limit (dBμV/m)	Result (dBμV/m)	Margin (dBμV/m)
5240	82.33	H	1.7	31.69	-32.3	OB	81.72	
5240	72.67	H	1.7	31.69	-32.3	OB	72.06	
5240	83.83	V	1.7	31.69	-32.3	OB	83.22	
5240	73.83	V	1.7	31.69	-32.3	OB	73.22	
10480	51.33	H	1.8	38.96	-31.3	74.0	59.04	-14.96
10480	57.83	V	1.7	38.96	-31.3	74.0	65.54	-8.46
15720	50.00	H	1.7	37.51	-28.6	74.0	58.96	-15.04
15720	42.17	V	1.7	37.51	-28.6	74.0	51.13	-22.87

Remark	H : Horizontal, V : Vertical TEST MODE : 802.11a - CH4(5240MHz) *Cable Loss=Cable Loss+Amp *OB=Fundamental Freqency

Measurement Distance : 3 m

Frequency (MHz)	Reading (dBμV)	Position (V/H)	Height (m)	Correction Factor		Result Value		
				Ant Factor (dB)	Cable (dB)	Limit (dBμV/m)	Result (dBμV/m)	Margin (dBμV/m)
5260	81.83	H	1.8	31.70	-32.3	OB	81.25	
5260	72.67	H	1.8	31.70	-32.3	OB	72.09	
5260	83.33	V	1.6	31.70	-32.3	OB	82.75	
5260	74.17	V	1.6	31.70	-32.3	OB	73.59	
10520	48.83	H	2.0	39.01	-31.2	74.0	56.65	-17.35
10520	57.17	V	1.7	39.01	-31.2	74.0	64.99	-9.01
15780	49.67	H	1.5	37.42	-28.6	74.0	58.50	-15.50
15780	52.67	V	1.4	37.42	-28.6	74.0	61.50	-12.50

Remark	H : Horizontal, V : Vertical TEST MODE : 802.11a - CH5(5260MHz) *Cable Loss=Cable Loss+Amp *OB=Fundamental Freqency

Measurement Distance : 3 m

Frequency (MHz)	Reading (dBμV)	Position (V/H)	Height (m)	Correction Factor		Result Value		
				Ant Factor (dB)	Cable (dB)	Limit (dBμV/m)	Result (dBμV/m)	Margin (dBμV/m)
5320	81.00	H	1.2	31.72	-32.2	OB	80.52	
5320	70.67	H	1.2	31.72	-32.2	OB	70.19	
5320	82.17	V	1.2	31.72	-32.2	OB	81.69	
5320	72.00	V	1.2	31.72	-32.2	OB	71.52	
10640	57.33	H	1.5	39.14	-31.0	74.0	65.50	-8.50
10640	60.00	V	1.5	39.14	-31.0	74.0	68.17	-5.83
15960	46.17	H	1.5	37.12	-28.7	74.0	54.64	-19.36
15960	49.33	V	1.4	37.12	-28.7	74.0	57.80	-16.20
Remark	H : Horizontal, V : Vertical TEST MODE : 802.11a - CH8(5320MHz) *Cable Loss=Cable Loss+Amp *OB=Fundamental Freqency							

Measurement Distance : 3 m

Frequency (MHz)	Reading (dBμV)	Position (V/H)	Height (m)	Correction Factor		Result Value		
				Ant Factor (dB)	Cable (dB)	Limit (dBμV/m)	Result (dBμV/m)	Margin (dBμV/m)
5745	82.50	H	1.3	32.30	-32.2	OB	82.63	
5745	73.83	H	1.3	32.30	-32.2	OB	73.96	
5745	84.50	V	1.6	32.30	-32.2	OB	84.63	
5745	75.50	V	1.6	32.30	-32.2	OB	75.63	
11490	50.83	H	1.7	39.22	-30.3	74.0	59.76	-14.24
11490	53.83	V	1.6	39.22	-30.3	74.0	62.76	-11.24
17235	55.00	H	1.6	40.63	-27.1	74.0	68.51	-5.49
17235	55.83	V	1.2	40.63	-27.1	74.0	69.34	-4.66

Remark	H : Horizontal, V : Vertical TEST MODE : 802.11a - CH9(5745MHz) *Cable Loss=Cable Loss+Amp *OB=Fundamental Freqency

Measurement Distance : 3 m

Frequency (MHz)	Reading (dBμV)	Position (V/H)	Height (m)	Correction Factor		Result Value		
				Ant Factor (dB)	Cable (dB)	Limit (dBμV/m)	Result (dBμV/m)	Margin (dBμV/m)
5805	83.83	H	1.4	32.41	-32.2	OB	84.06	
5805	73.67	H	1.4	32.41	-32.2	OB	73.90	
5805	79.33	V	1.4	32.41	-32.2	OB	79.56	
5805	69.18	V	1.4	32.41	-32.2	OB	69.41	
11610	50.67	H	1.5	39.08	-30.3	74.0	59.44	-14.56
11610	50.50	V	1.5	39.08	-30.3	74.0	59.27	-14.73
17415	56.50	H	1.7	41.31	-26.9	74.0	70.87	-3.13
17415	54.83	V	1.5	41.31	-26.9	74.0	69.20	-4.80
Remark	H : Horizontal, V : Vertical TEST MODE : 802.11a - CH12(5805MHz) *Cable Loss=Cable Loss+Amp *OB=Fundamental Freqency							

15. Measurement of conducted disturbance

The continuous disturbance voltage of AC Mains in the frequency from 0.15 to 30 MHz was measured in accordance to FCC Part 15 (2002) & ANSI C 63.4 (2003) The test setup was made according to FCC Part 15 (2002) & ANSI C 63.4 (2003) in a shielded. The EUT was placed on a non-conductive table at least 80 above the ground plan. A grounded vertical reference plane was positioned in a distance of 40cm from the EUT. The distance from the EUT to other metal surfaces was at least 0.8m. The EUT was only earthen by its power cord through the line impedance stabilizing network. The power cord has been bundled to a length of 1.0m.. The test receiver with Quasi Peak detector complies with CISPR 16.

15.1 Measurement equipments

Equipment Name	Type	Manufacturer	Serial No.	Next Calibration date
LISN	ESH3-Z5	Rohde & Schwarz	838979/010	2006. 2. 18
LISN	NNLA8120A	Schwarzbeck	NONE	2006. 2. 18
TEST Receive	ESPI7	Rohde & Schwarz	100185	2005. 8. 20
Pulse Limiter	ESH3Z2	Rohde & Schwarz	NONE	2005. 6. 15

15.2 Environmental Condition

Test Place : Shield Room
Temperature (°C) : 20 ℃
Humidity (%) : 21 %

15.3 Test data

Frequency (MHz)	Correction Factor		Line (H/N)	Quasi-peak Value			Average Value		
	Lisn (dB)	Cable (dB)		Limit (dBμV)	Reading (dBμV)	Result (dBμV)	Limit (dBμV)	Reading (dBμV)	Result (dBμV)
802.11b - CH 1									
0.17	0.12	0.0	H	65.21	43.41	43.54	55.21	29.21	29.34
0.27	0.15	0.1	N	61.27	44.24	44.47	51.27	35.10	35.33
0.76	0.18	0.2	N	56.00	42.38	42.76	46.00	40.72	41.10
1.72	0.19	0.3	N	56.00	30.02	30.49	46.00	26.12	26.59
9.36	0.43	0.6	H	60.00	37.61	38.60	50.00	27.41	28.40
802.11b - CH 6									
0.17	0.12	0.0	H	65.21	45.59	45.72	55.21	34.54	34.67
0.26	0.15	0.1	H	61.30	44.09	44.32	51.30	36.68	36.91
0.76	0.18	0.2	H	56.00	10.04	10.42	46.00	38.74	39.12
1.72	0.19	0.3	H	56.00	29.33	29.80	46.00	26.92	27.39
1.72	0.19	0.3	N	56.00	26.70	27.17	46.00	27.56	28.03
10.54	0.47	0.6	H	60.00	30.41	31.50	50.00	25.84	26.93
802.11b - CH 11									
0.26	0.15	0.1	H	61.34	43.75	43.98	51.34	35.80	36.03
0.76	0.18	0.2	H	56.00	36.43	36.81	46.00	35.21	35.59
2.34	0.21	0.3	H	56.00	29.58	30.09	46.00	27.52	28.03
0.16	0.12	0.0	N	65.26	47.50	47.63	55.26	35.21	35.34
9.81	0.44	0.6	N	60.00	32.30	33.32	50.00	27.04	28.06
Remark	H : Hot Line, N : Neutral Line TEST MODE : 802.11b - CH 11(2462MHz)								

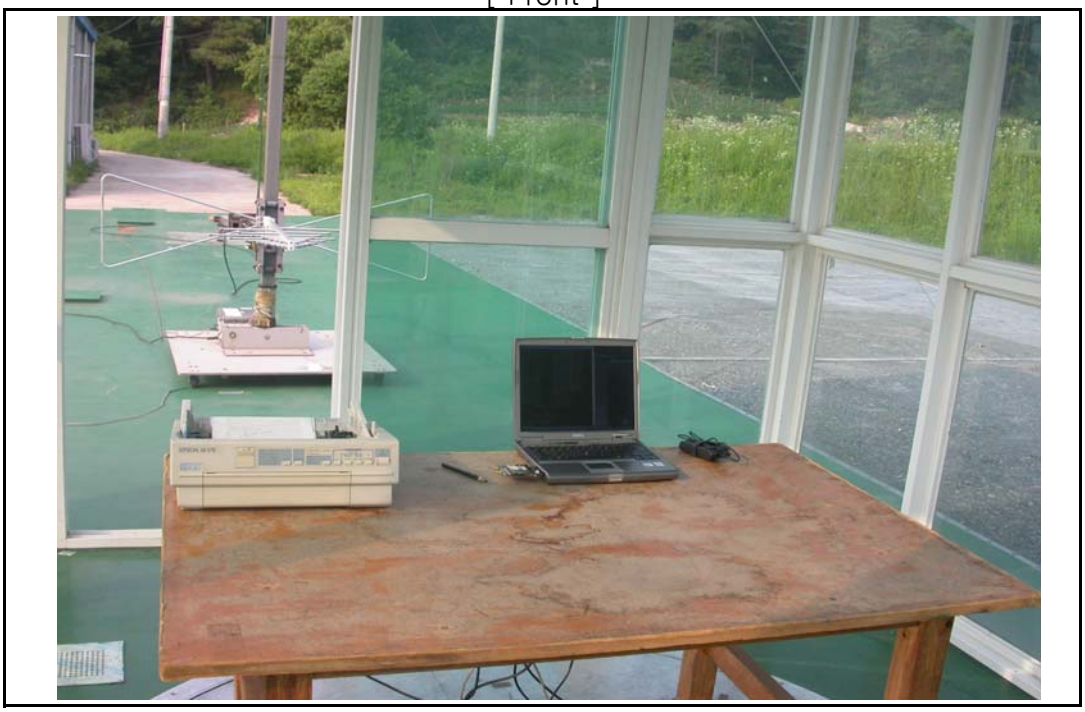
Frequency (MHz)	Correction Factor		Line (H/N)	Quasi-peak Value			Average Value		
	Lisn (dB)	Cable (dB)		Limit (dBμV)	Reading (dBμV)	Result (dBμV)	Limit (dBμV)	Reading (dBμV)	Result (dBμV)
802.11g - CH 1									
0.17	0.12	0.0	H	65.21	44.81	44.94	55.21	31.52	31.65
0.27	0.15	0.1	N	61.24	42.12	42.35	51.24	33.01	33.24
0.37	0.16	0.1	H	58.61	34.21	34.50	48.61	24.20	24.49
0.76	0.18	0.2	N	56.00	31.46	31.84	46.00	29.35	29.73
9.54	0.43	0.6	N	60.00	31.43	32.43	50.00	27.07	28.07
9.61	0.43	0.6	H	60.00	31.09	32.10	50.00	27.03	28.04
802.11g - CH 6									
0.26	0.15	0.1	N	61.34	41.66	41.89	51.34	32.69	32.92
0.27	0.15	0.1	H	61.27	42.62	42.85	51.27	33.69	33.92
0.76	0.18	0.2	H	56.00	30.33	30.71	46.00	28.42	28.80
1.36	0.19	0.2	H	56.00	28.15	28.57	46.00	23.41	23.83
9.54	0.43	0.6	N	60.00	31.21	32.21	50.00	27.36	28.36
802.11g - CH 11									
0.17	0.13	0.0	H	65.01	47.47	47.61	55.01	32.58	32.72
0.25	0.15	0.1	H	61.63	42.21	42.43	51.63	34.63	34.85
0.76	0.18	0.2	H	56.00	30.63	31.01	46.00	28.07	28.45
1.35	0.19	0.2	H	56.00	29.43	29.85	46.00	25.63	26.05
3.79	0.25	0.3	N	56.00	28.46	29.01	46.00	23.20	23.75
9.74	0.44	0.6	H	60.00	31.16	32.18	50.00	27.54	28.56
14.54	0.69	0.8	N	60.00	27.94	29.42	50.00	23.75	25.23
Remark	H : Hot Line, N : Neutral Line TEST MODE : 802.11g - CH 11 (2462MHz)								

Frequency (MHz)	Correction Factor		Line (H/N)	Quasi-peak Value			Average Value		
	Lisn (dB)	Cable (dB)		Limit (dBμV)	Reading (dBμV)	Result (dBμV)	Limit (dBμV)	Reading (dBμV)	Result (dBμV)
802.11a - CH 1									
0.16	0.12	0.0	N	65.36	47.93	48.06	55.36	34.94	35.07
0.25	0.15	0.1	H	61.63	43.71	43.93	51.63	36.43	36.65
0.76	0.18	0.2	H	56.00	31.16	31.54	46.00	29.36	29.74
1.36	0.19	0.2	H	56.00	28.67	29.09	46.00	27.70	28.12
2.34	0.21	0.3	N	56.00	28.32	28.83	46.00	26.90	27.41
802.11a - CH 6									
0.17	0.12	0.0	H	65.21	50.14	50.27	55.21	31.75	31.88
0.26	0.15	0.1	N	61.53	39.00	39.22	51.53	32.60	32.82
0.76	0.18	0.2	H	56.00	31.04	31.42	46.00	28.94	29.32
1.36	0.19	0.2	N	56.00	29.83	30.25	46.00	25.73	26.15
2.36	0.21	0.3	H	56.00	28.83	29.34	46.00	20.92	21.43
802.11a - CH 12									
0.18	0.13	0.0	H	64.35	45.41	45.56	54.35	29.41	29.56
0.19	0.13	0.0	N	64.26	45.50	45.65	54.26	30.68	30.83
0.76	0.18	0.2	H	56.00	30.94	31.32	46.00	28.12	28.50
1.36	0.19	0.2	H	56.00	28.67	29.09	46.00	24.62	25.04
2.35	0.21	0.3	N	56.00	29.96	30.47	46.00	25.97	26.48
Remark	H : Hot Line, N : Neutral Line TEST MODE : 802.11a - CH 12 (5805MHz)								

16. Photographs of test setup

16.1 Setup for Radiated Test : 30 ~ 1000 MHz

[Front]



[Rear]

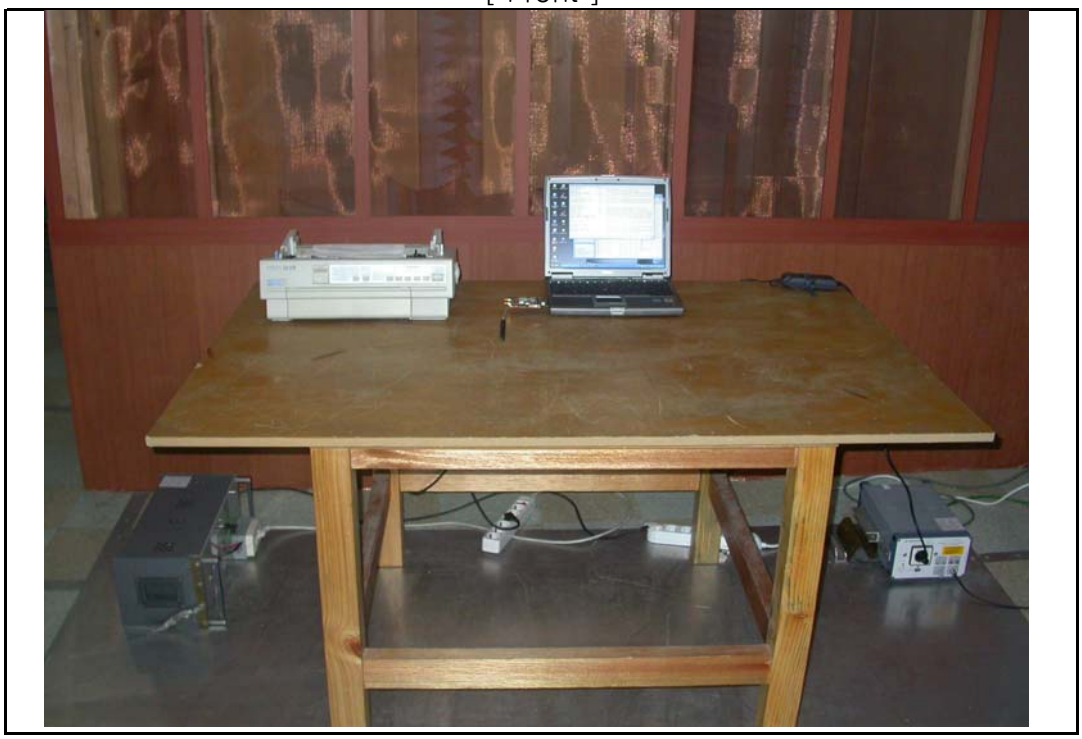
16.2 Setup for Radiated Test :Above 1000 MHz

[Front]

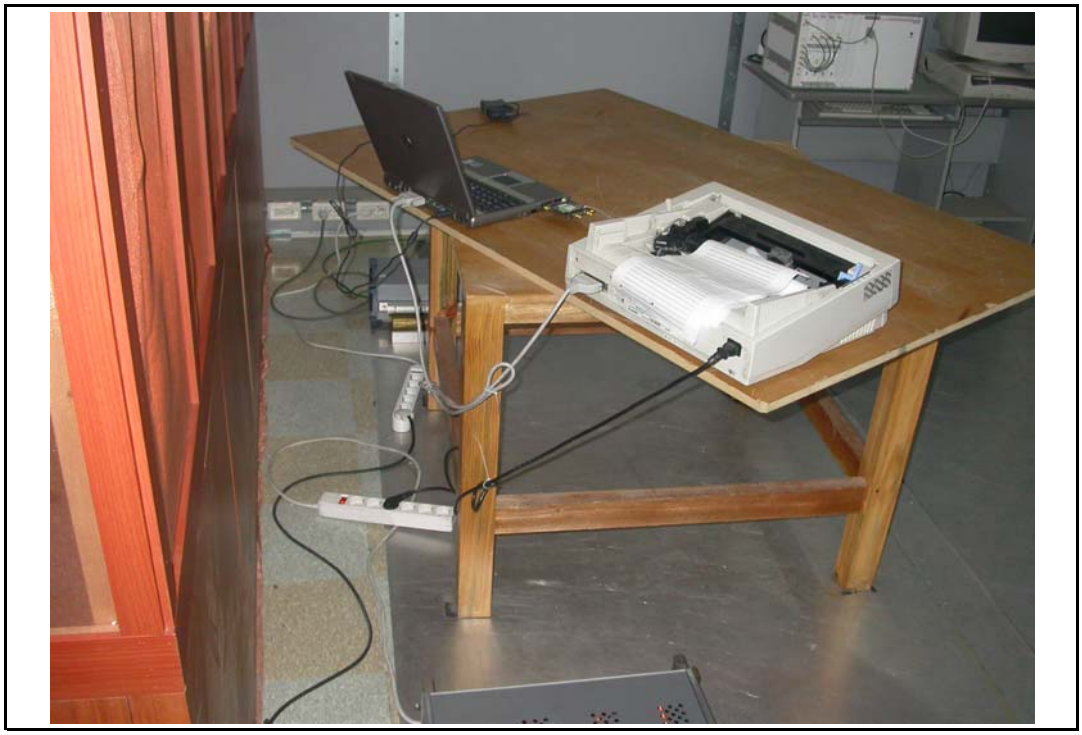
[Rear]

16.3 Setup for Conducted Test : 0.15 ~ 30 MHz

[Front]

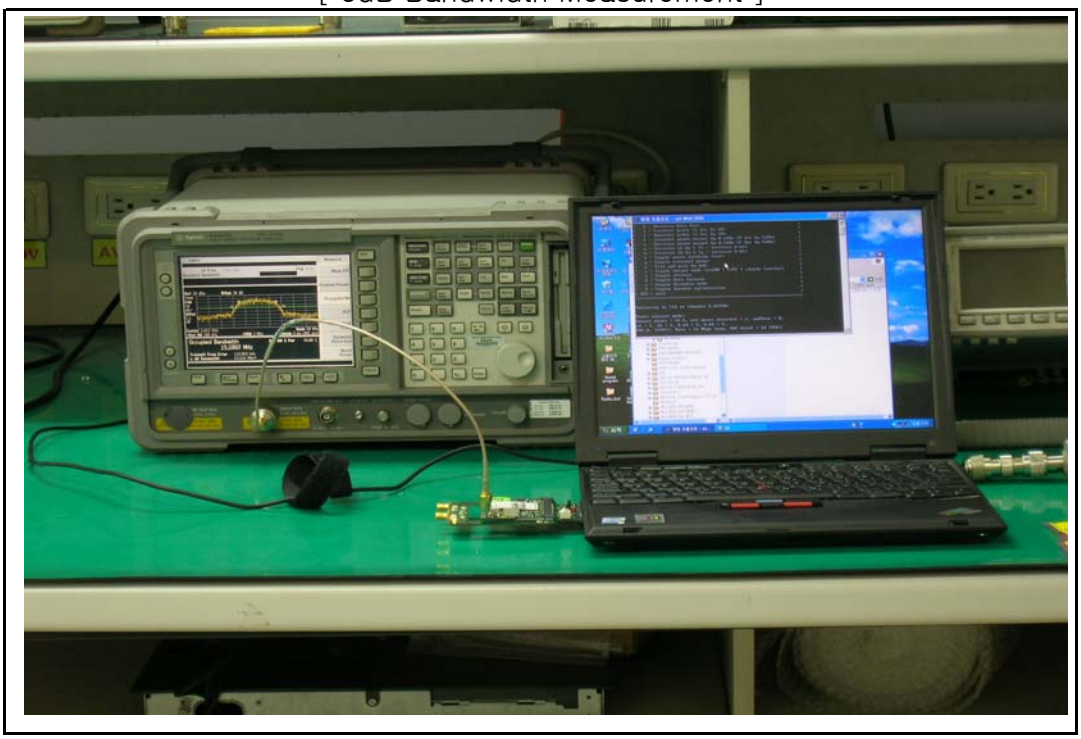


[Rear]

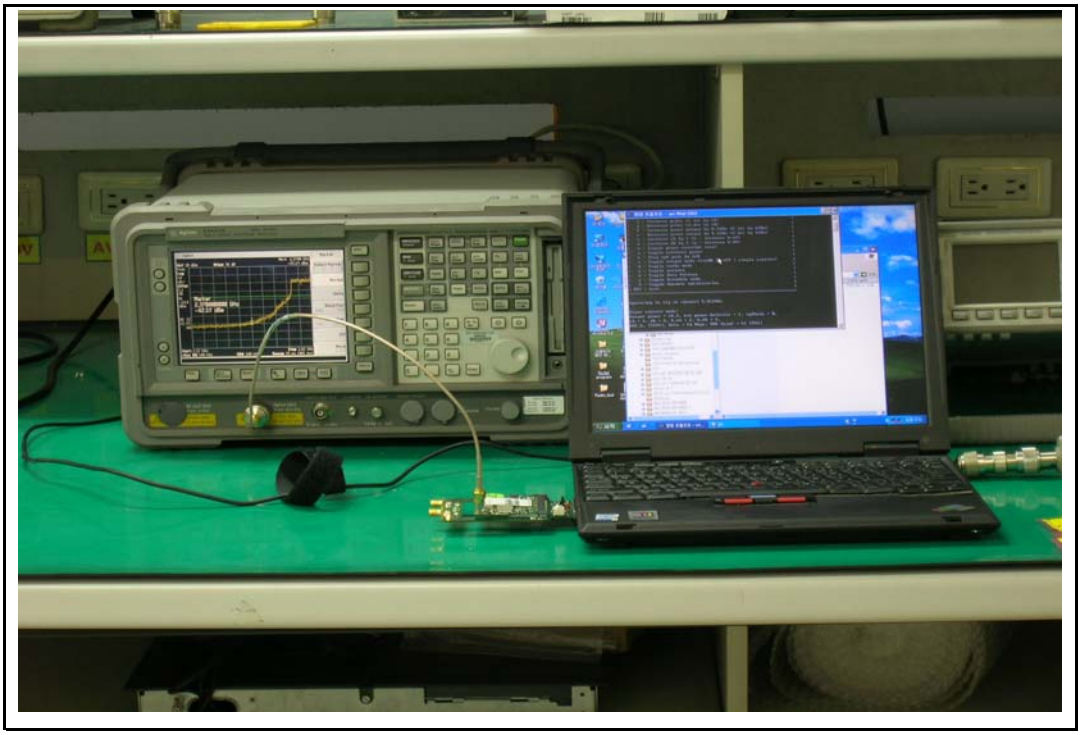


16.4 Setup for Conducted Test

[6dB Bandwidth Measurement]



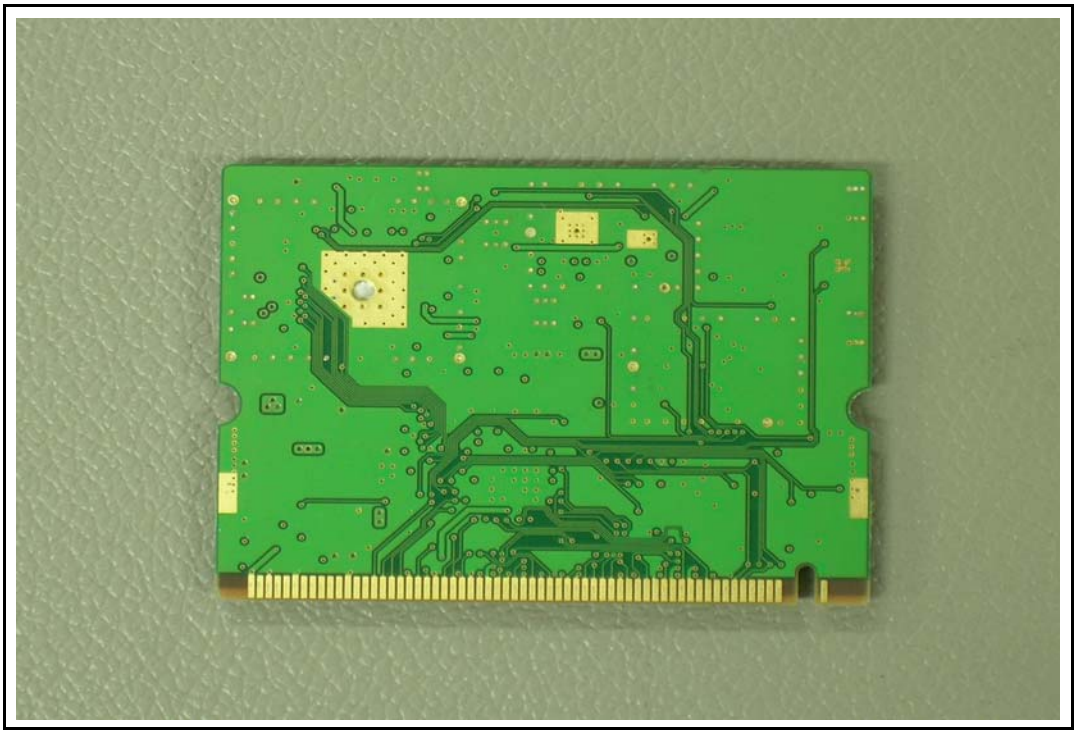
[Band-Edge and Out of Band Emissions]



17. Photographs of EUT

[Front]

[Rear]



18. Antenna Requirement

18.1 Standard Applicable

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

And according to FCC 47 CFR Section 15.24

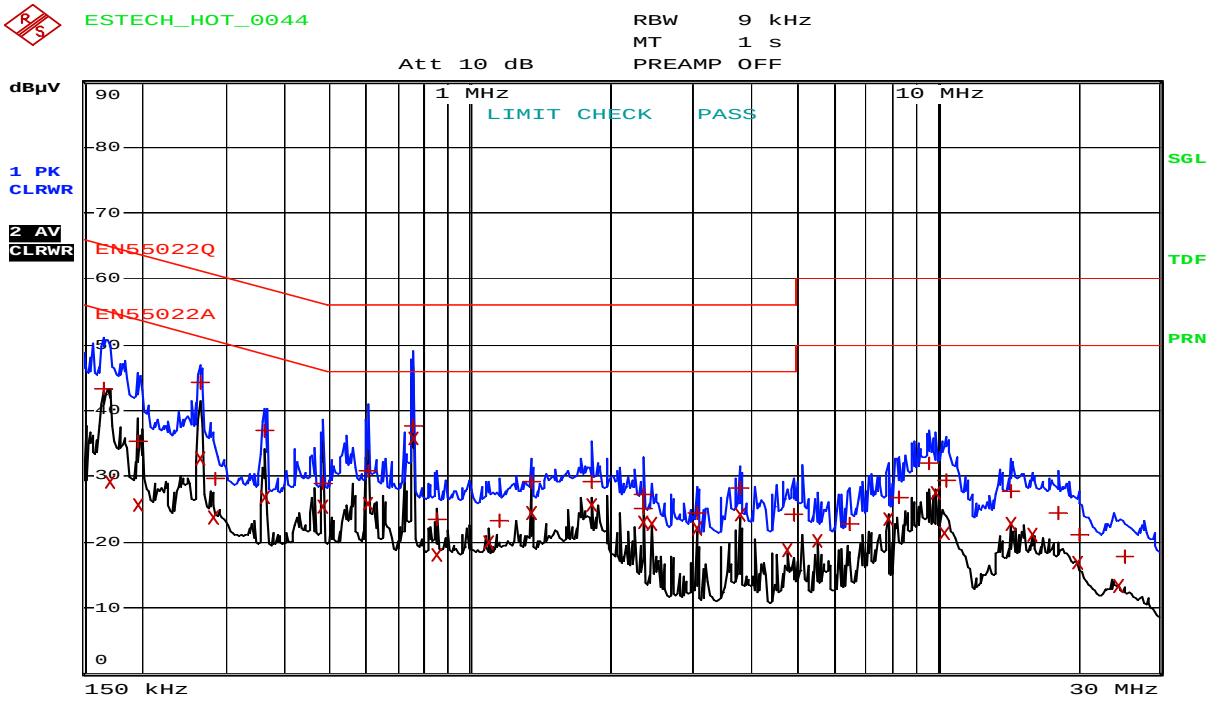
18.2 Antenna Connected Construction

The antenna types used in this product are Intergrated PCB Pattern Antenna. The maximum Gain of this antenna is 4.33dBi.

Appendix 1. Spectral diagram

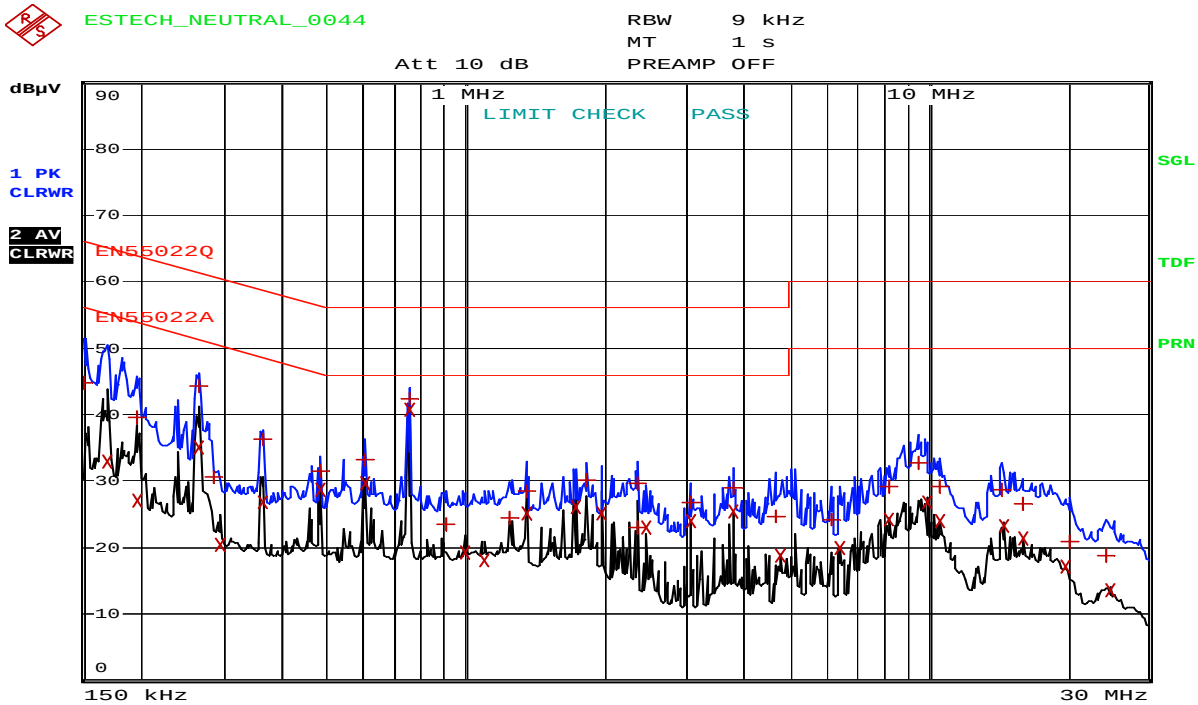
802.11b – CH 1

*HOT



Comment: SAMSUNG ELECTRONICS CO., LTD._Wireless Mini PCI CARD_SWL-530
Comment: 0M_11b-CH1_HOT
Date: 18.APR.2005 09:43:42

*NEUTRAL

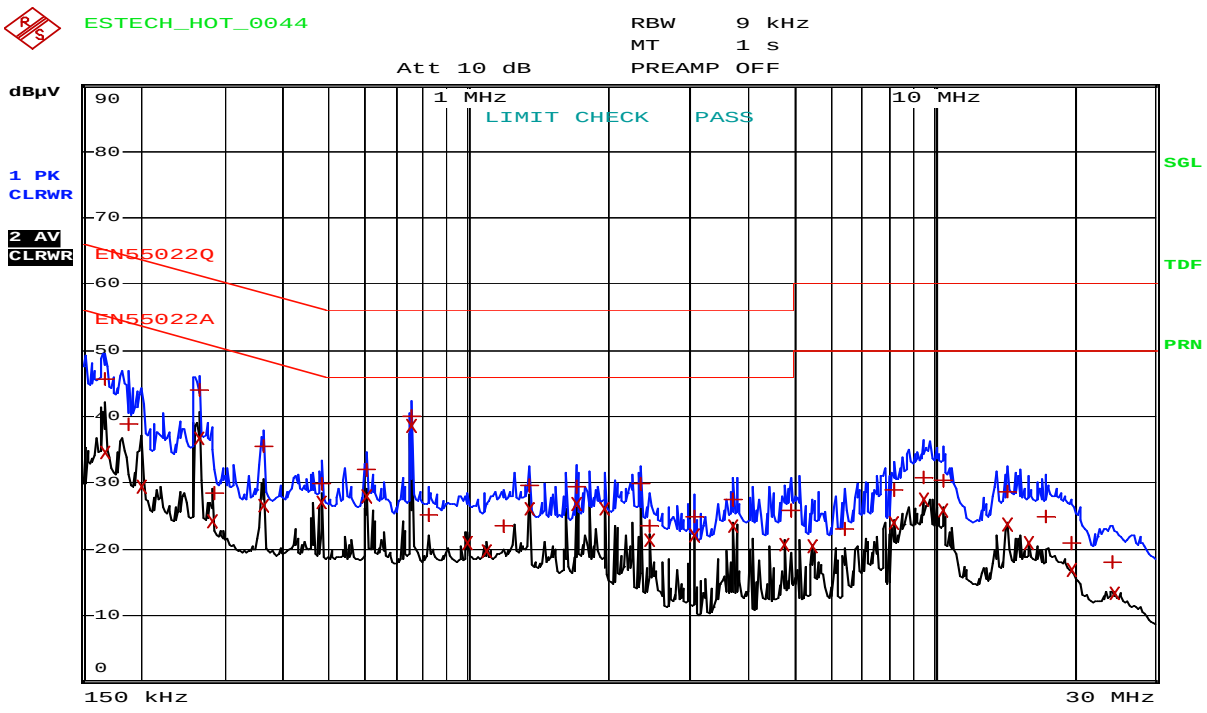


Comment: SAMSUNG ELECTRONICS CO., LTD._Wireless Mini PCI CARD_SWL-530
Comment: 0M_11b-CH1_NEUTRAL
Date: 18.APR.2005 09:54:39

Appendix 1. Spectral diagram

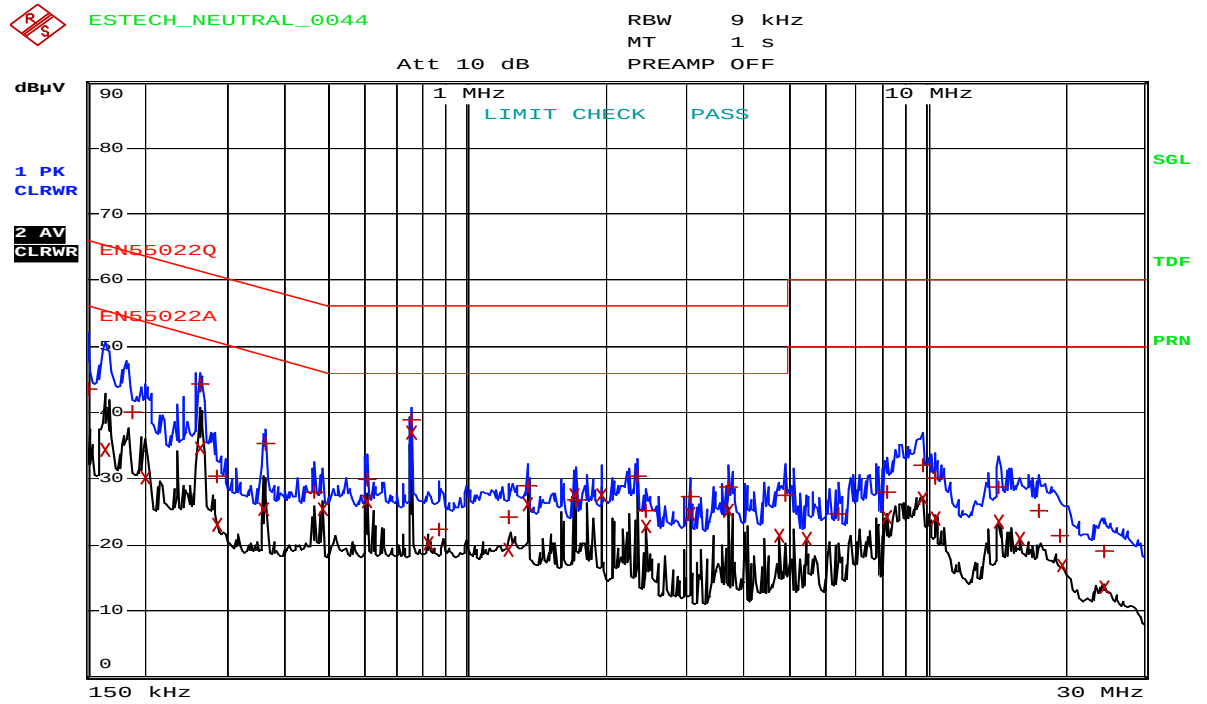
802.11b – CH 6

*HOT



Comment: SAMSUNG ELECTRONICS CO., LTD._Wireless Mini PCI CARD_SWL-530
Comment: 0M_11b-CH6_HOT
Date: 18.APR.2005 10:02:58

*NEUTRAL

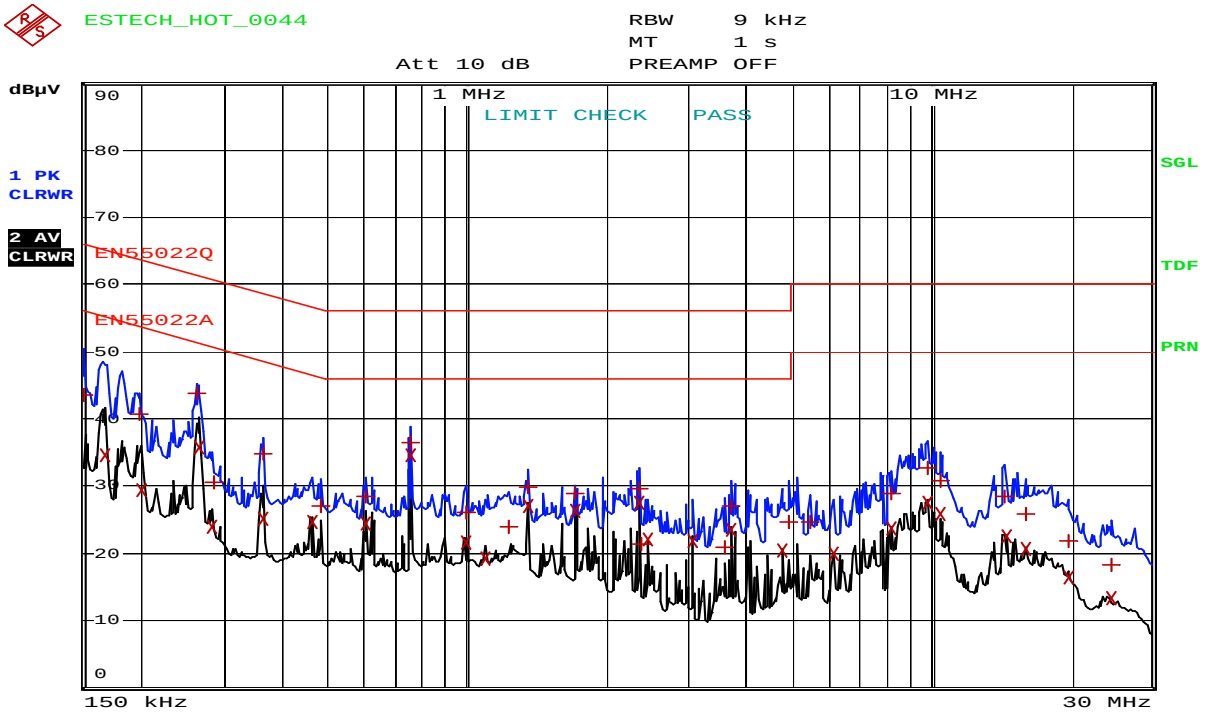


Comment: SAMSUNG ELECTRONICS CO., LTD._Wireless Mini PCI CARD_SWL-530
Comment: 0M_11b-CH6_NEUTRAL
Date: 18.APR.2005 10:09:28

Appendix 1. Spectral diagram

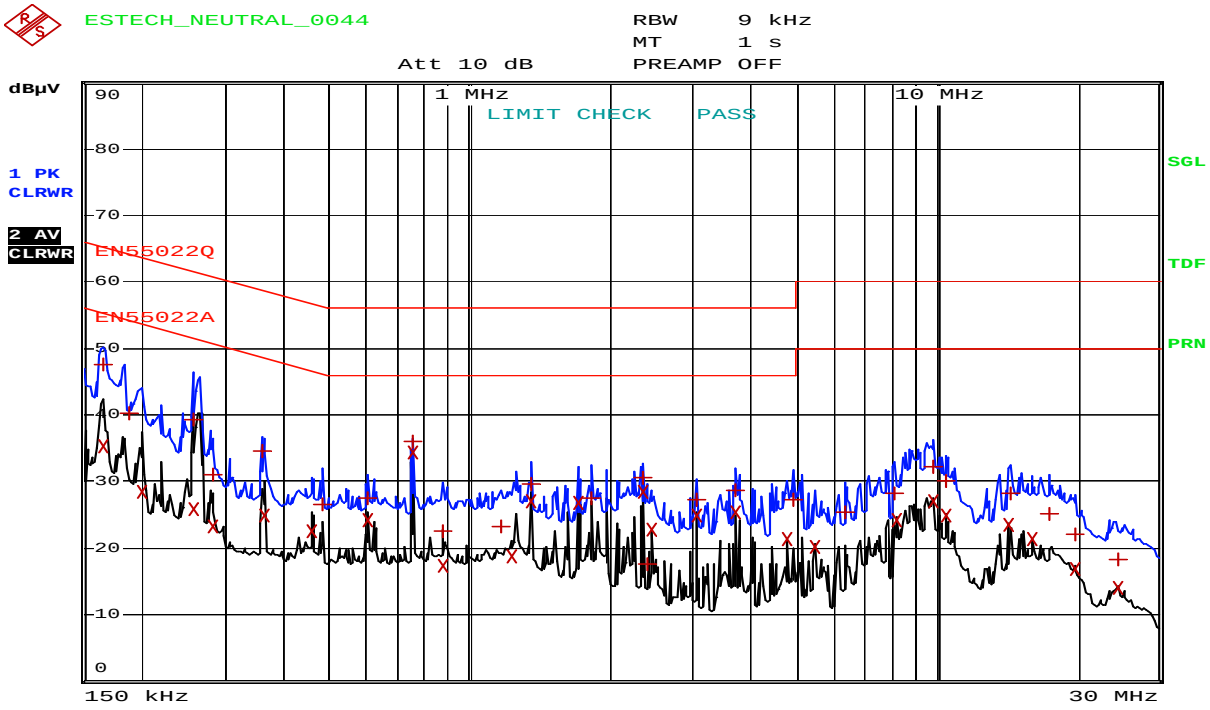
802.11b – CH 11

*HOT



Comment: SAMSUNG ELECTRONICS CO., LTD._Wireless Mini PCI CARD_SWL-530
Comment: 0M_11b-CH11_HOT
Date: 18.APR.2005 10:17:16

*NEUTRAL

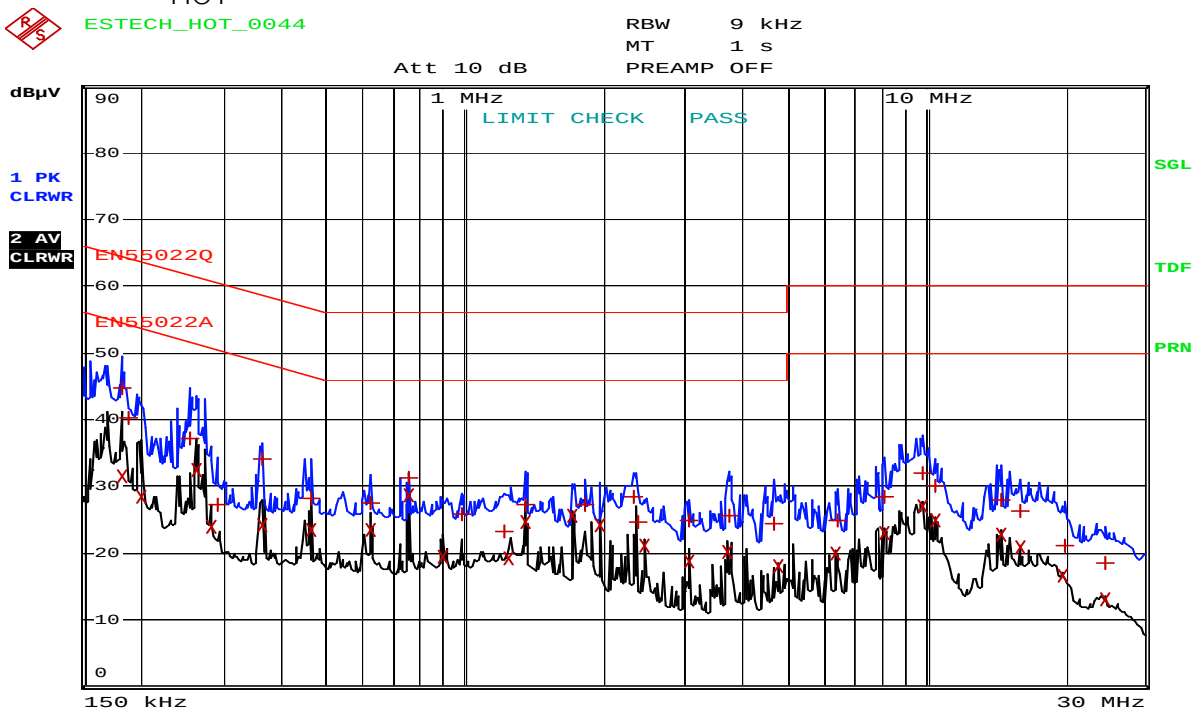


Comment: SAMSUNG ELECTRONICS CO., LTD._Wireless Mini PCI CARD_SWL-530
Comment: 0M_11b-CH11_NEUTRAL
Date: 18.APR.2005 10:24:05

Appendix 1. Spectral diagram

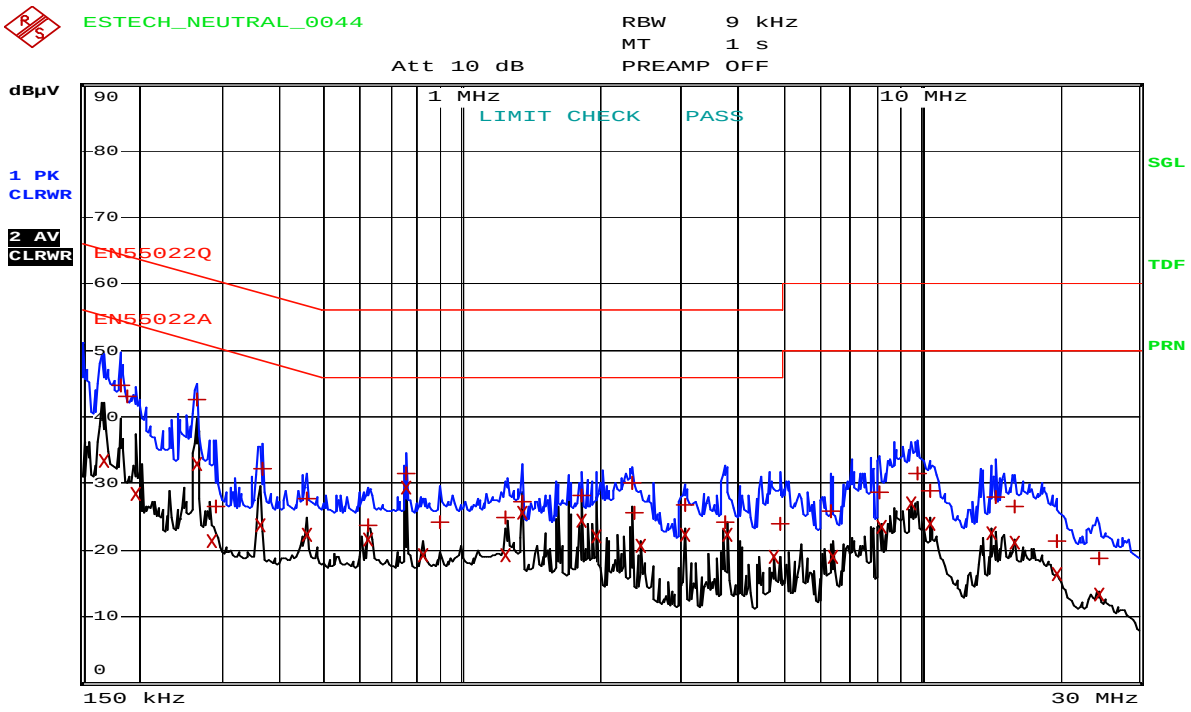
802.11g – CH 1

*HOT



Comment: SAMSUNG ELECTRONICS CO., LTD._Wireless Mini PCI Card_SWL-530
Comment: 0M_11g CH1_HOT
Date: 18.APR.2005 13:00:18

*NEUTRAL

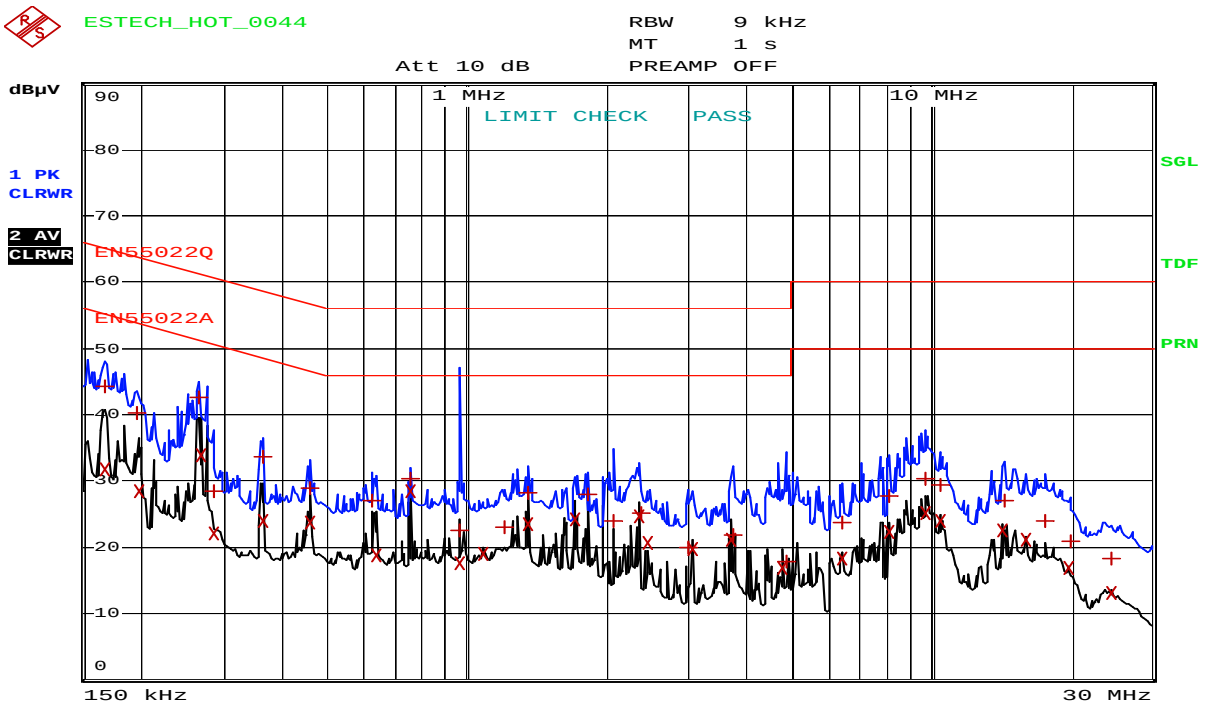


Comment: SAMSUNG ELECTRONICS CO., LTD._Wireless Mini PCI Card_SWL-530
Comment: 0M_11g CH1_NEUTRAL
Date: 18.APR.2005 13:06:53

Appendix 1. Spectral diagram

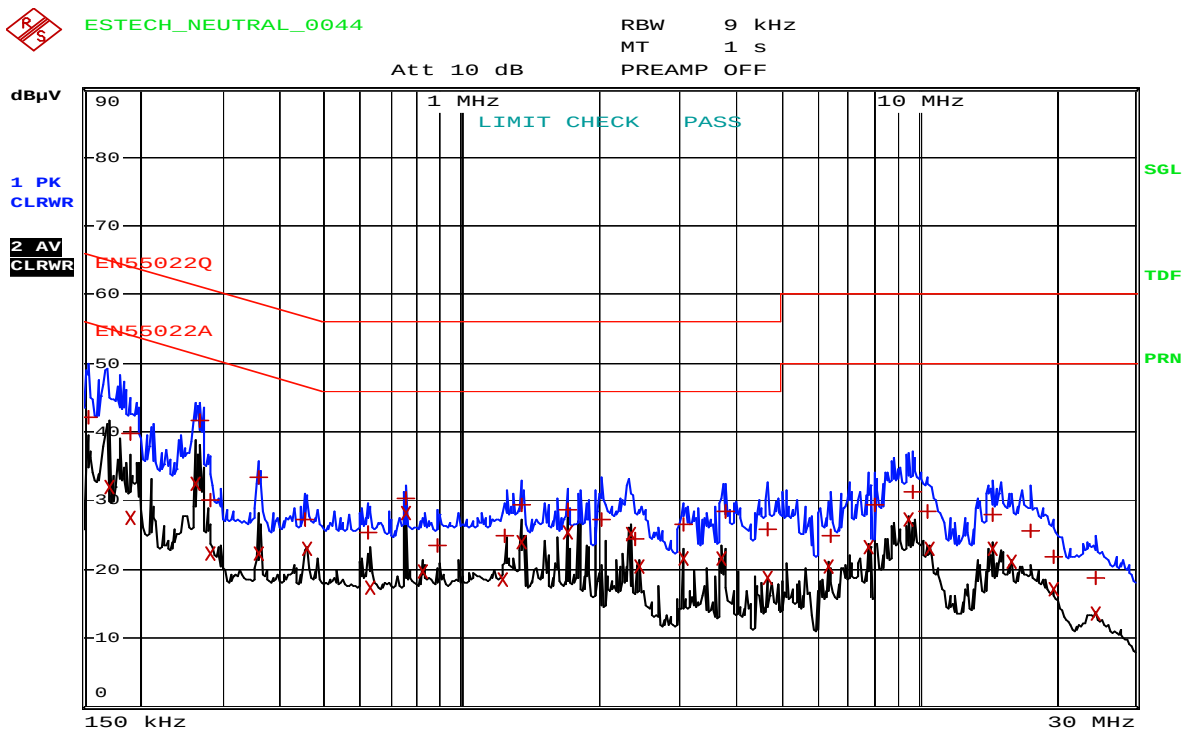
802.11g- CH 6

*HOT



Comment: SAMSUNG ELECTRONICS CO., LTD._Wireless Mini PCI Card_SWL-530
Comment: 0M_11g CH6_HOT
Date: 18.APR.2005 13:13:48

*NEUTRAL

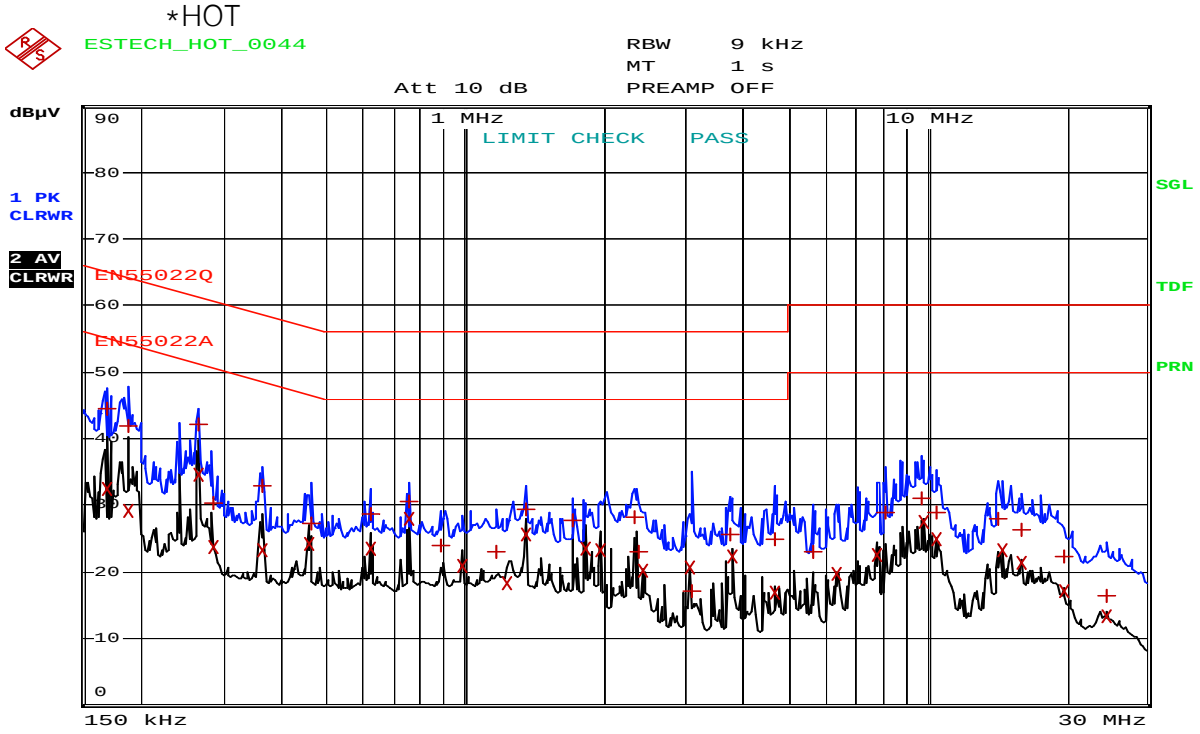


Comment: SAMSUNG ELECTRONICS CO., LTD._Wireless Mini PCI Card_SWL-530
Comment: 0M_11g CH6_NEUTRAL
Date: 18.APR.2005 13:21:02

Appendix 1. Spectral diagram

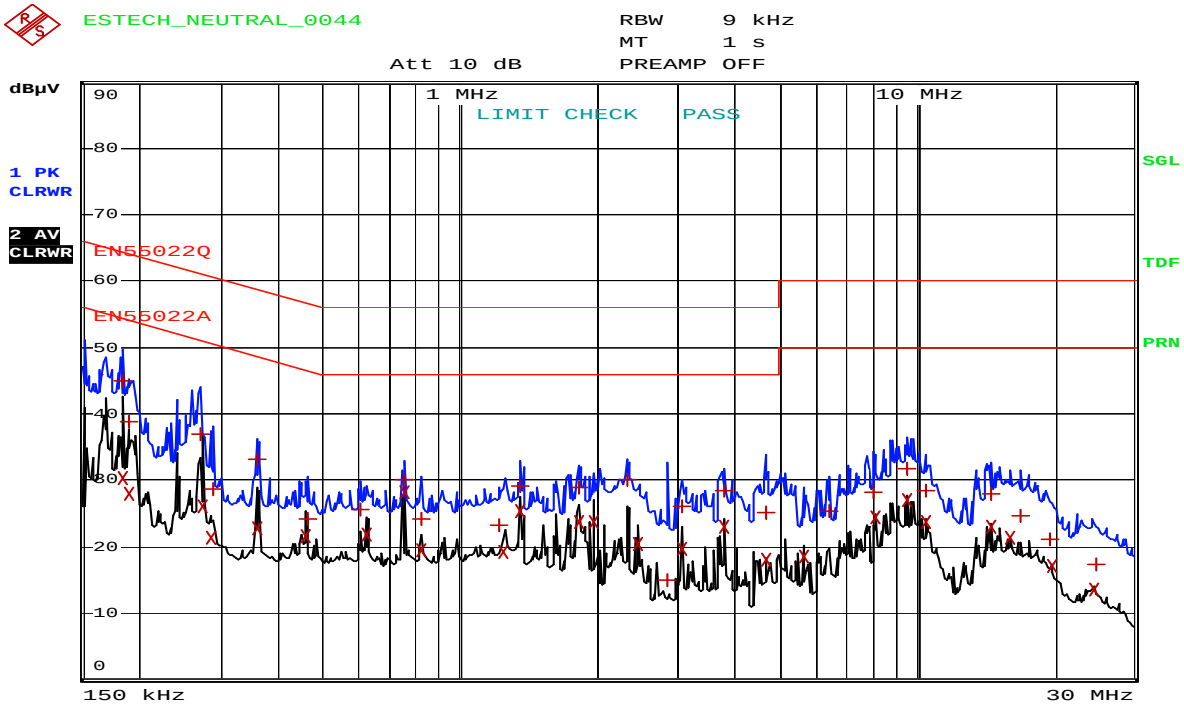
802.11g – CH 11

*HOT



Comment: SAMSUNG ELECTRONICS CO., LTD._Wireless Mini PCI Card_SWL-530
Comment: 0M_11g CH11_HOT
Date: 18.APR.2005 13:49:12

*NEUTRAL

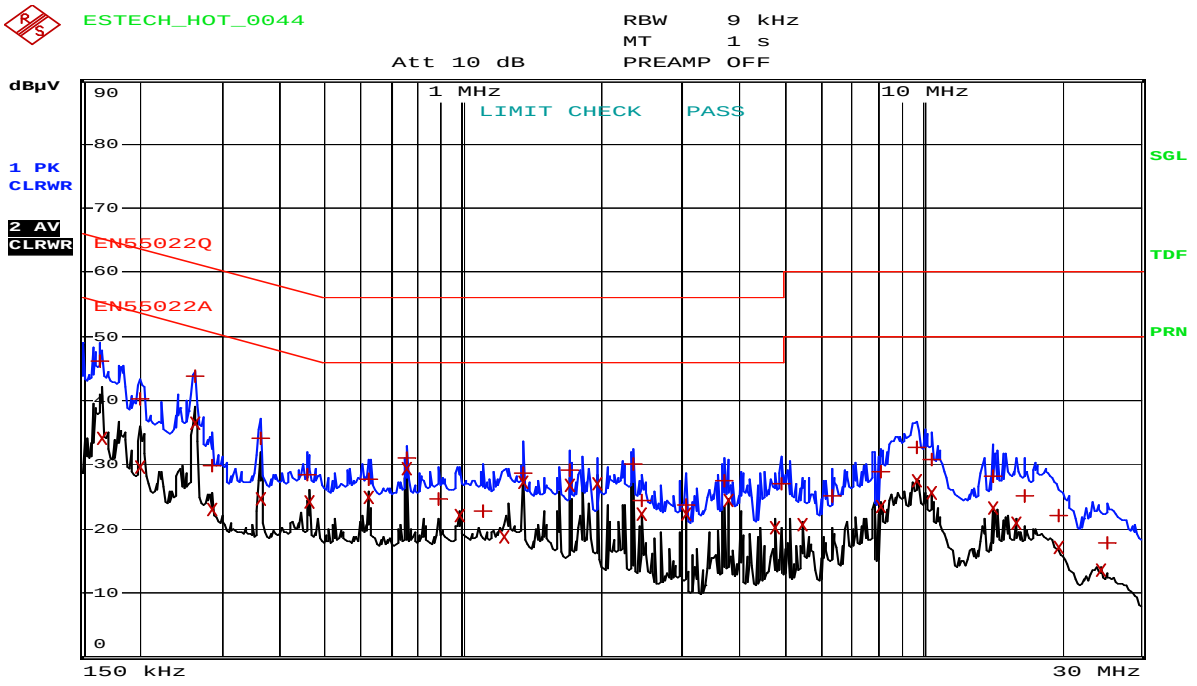


Comment: SAMSUNG ELECTRONICS CO., LTD._Wireless Mini PCI Card_SWL-530
Comment: 0M_11g CH11_NEUTRAL
Date: 18.APR.2005 13:37:24

Appendix 1. Spectral diagram

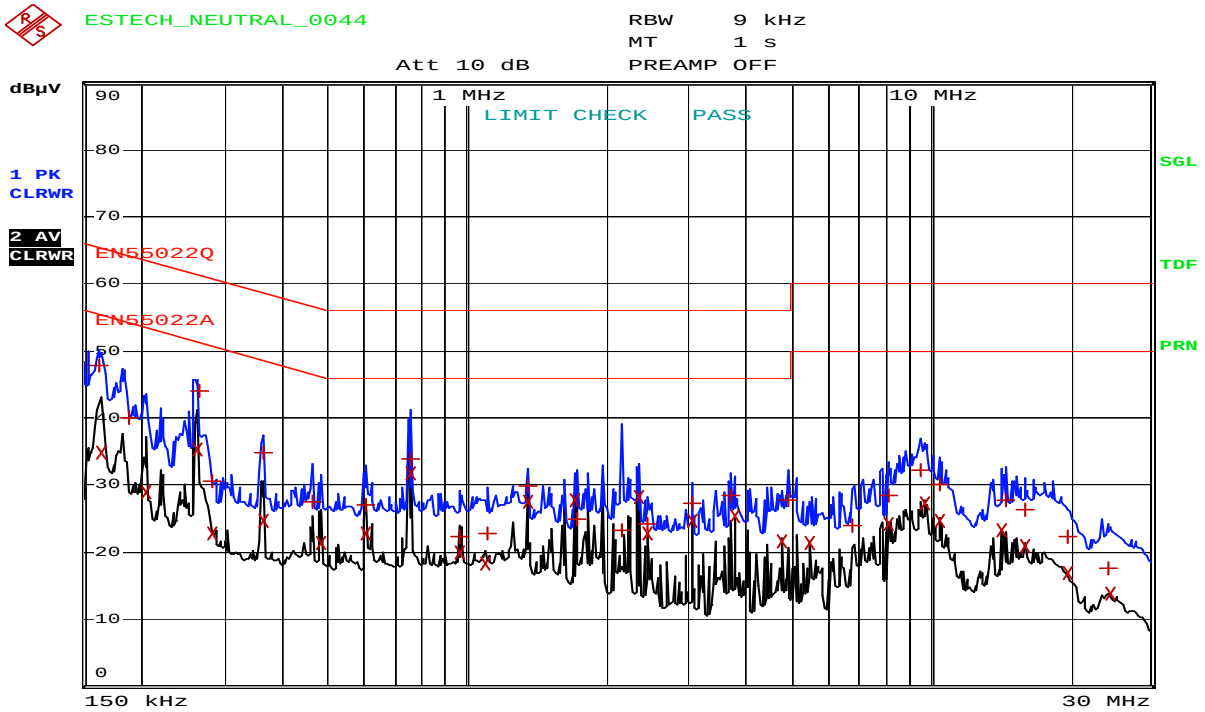
802.11a – CH 1

*HOT



Comment: SAMSUNG ELECTRONICS CO., LTD._Wireless Mini PCI Card_SWL-530
Comment: 0M_11a CH1_HOT
Date: 18.APR.2005 10:54:21

*NEUTRAL

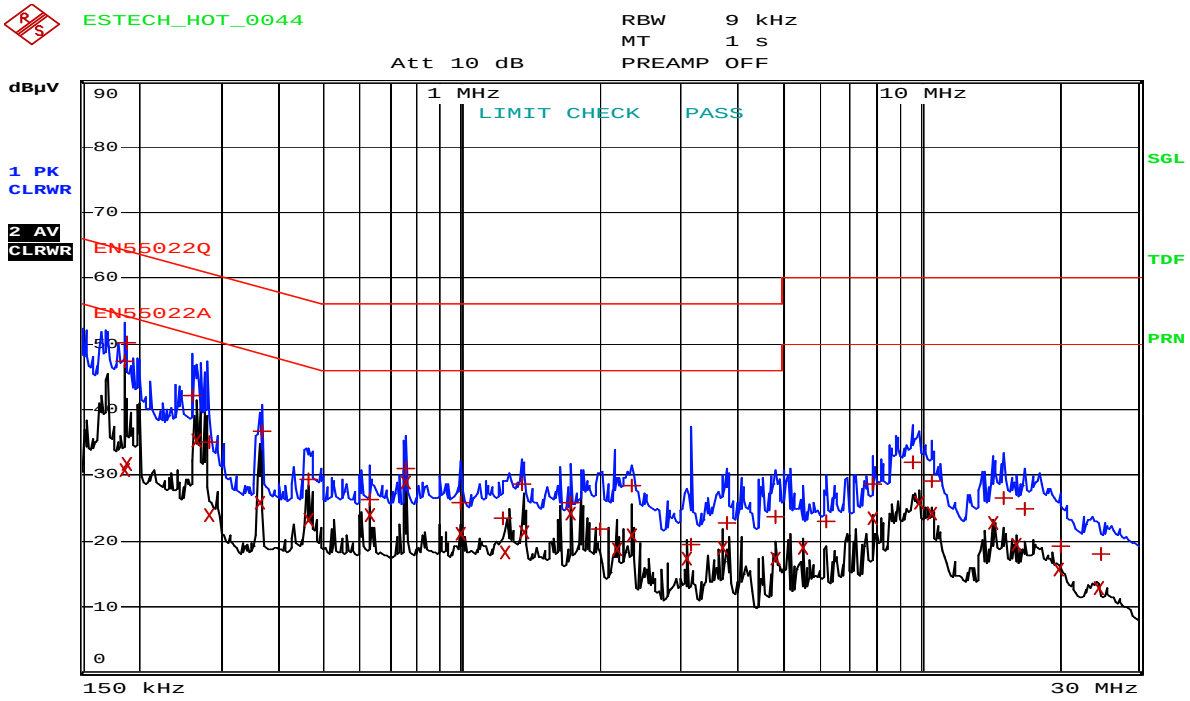


Comment: SAMSUNG ELECTRONICS CO., LTD._Wireless Mini PCI Card_SWL-530
Comment: 0M_11a CH1_NEUTRAL
Date: 18.APR.2005 10:46:11

Appendix 1. Spectral diagram

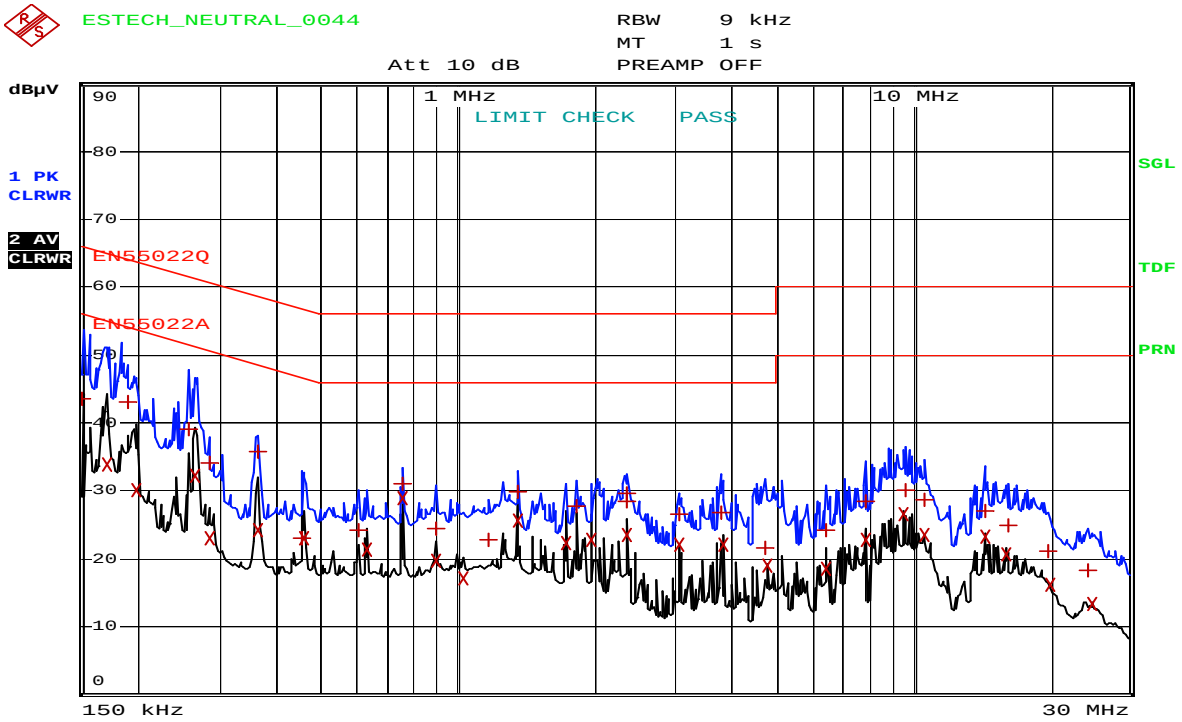
802.11a – CH 6

*HOT



Comment: SAMSUNG ELECTRONICS CO., LTD._Wireless Mini PCI Card_SWL-530
Comment: 0M_11a CH6_HOT
Date: 18.APR.2005 12:29:56

*NEUTRAL

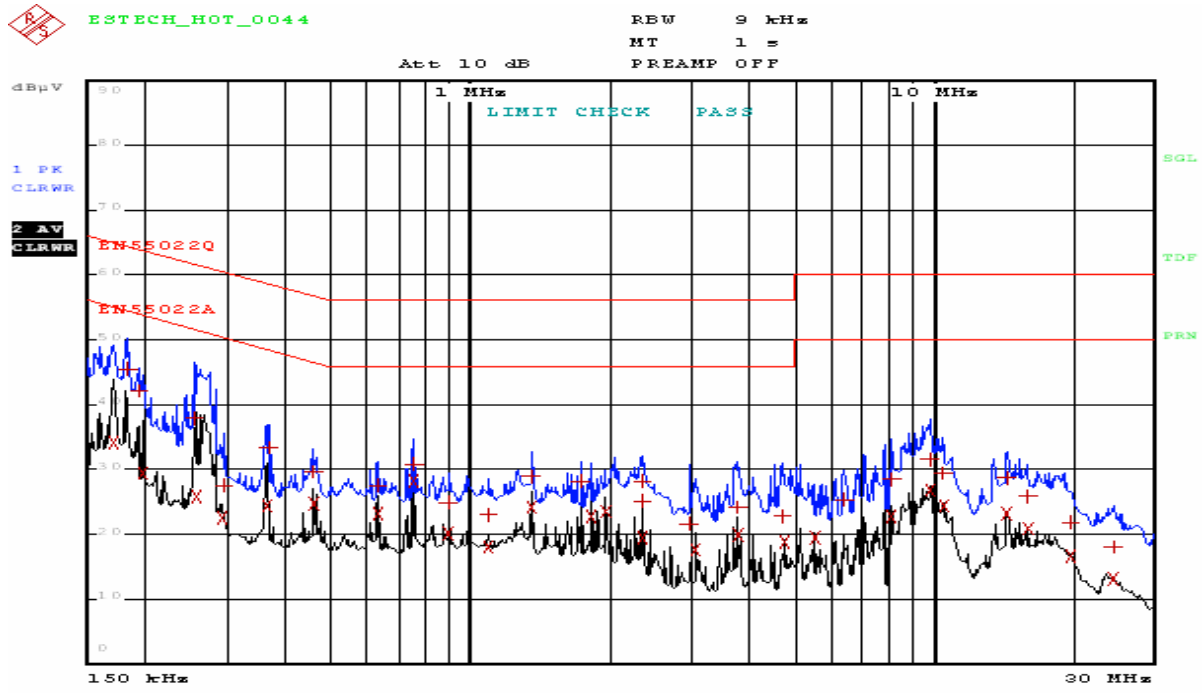


Comment: SAMSUNG ELECTRONICS CO., LTD._Wireless Mini PCI Card_SWL-530
Comment: 0M_11a CH6_NEUTRAL
Date: 18.APR.2005 12:36:51

Appendix 1. Spectral diagram

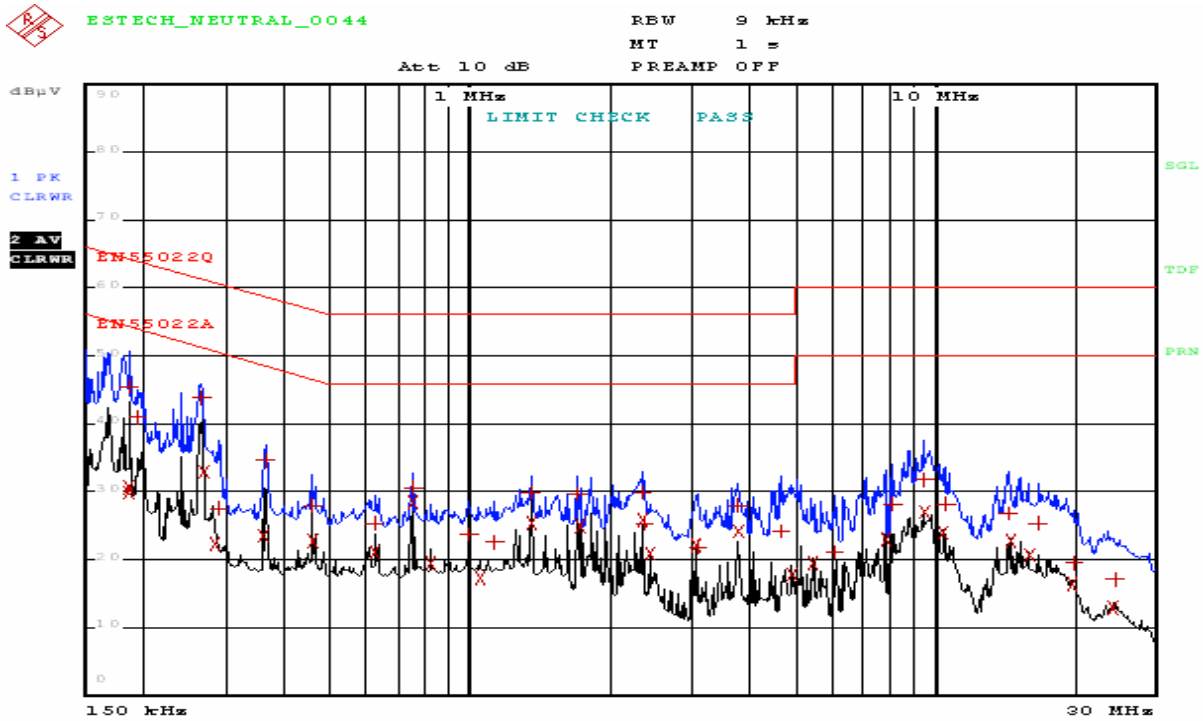
802.11a – CH 12

*HOT



Comment: SAMSUNG ELECTRONICS CO., LTD._Wireless Mini PCI Card_SWL-530
Comment: OM_11a CH12_HOT
Date: 18.APR.2005 12:43:52

*NEUTRAL



Comment: SAMSUNG ELECTRONICS CO., LTD._Wireless Mini PCI Card_SWL-530
Comment: OM_11a CH12_NEUTRAL
Date: 18.APR.2005 12:51:53