

 ESTECH Co., Ltd. Rm 1015, World Venture Center II, 426-5 Gasan-dong, Guncheon-gu, Seoul, 158-803, Korea	   	Electromagnetic Interference Test Report
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Test Report for FCC

FCC ID:U7X-MM3

Report Number		ESTF150908-003		
Applicant	Company name	M3 Mobile Co., Ltd.		
	Address	DongWon B/D, 725-30, Yeoksam-dong, Gangnam-gu, Seoul, 135-080, Korea		
	Telephone	82-2-574-0037		
Product	Product name	Portable Data Collection Terminal		
	Model No.	MM3	Manufacturer	M3 Mobile Co., Ltd.
	Serial No.	NONE	Country of origin	KOREA
Test date	2009-05-06 ~ 2009-08-14		Date of issue	14-Aug-09
Testing location	ESTECH. Co., Ltd. 97-1 Hoiuk-Ri Majang-Myon, Icheon-city, KyungKi-Do, Korea			
Standard	FCC PART 15 2008 , ANSI C 63.4 2003			
Measurement facility registration number		94696		
Tested by	Engineer J.H.Kim		(Signature)	
Reviewed by	Engineering Manager 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

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Appendix 1. Spectral diagram

Appendix 2. Antenna Requirement

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 : 97-1, Hoeok-ri, Majang-myun, Ichion-city, Kyonggi-do, South Korea

1.3 Official Qualification(s)

KCC : 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	: Portable Data Collection Terminal
Model Number	: MM3
Modulation Type	: WLAN(DSSS, OFDM)
Transfer Rate	: up to 54Mbps
Number of Channel	: 11 ch
Channel Spacing	: 802.11b and 802.11g: 5MHz
Output Power	: 802.11b: 14.20dBm, 802.11g: 11.00dBm, 802.11a: 17.22dBm
Serial Number	: NONE
Manufacturer	: M3 Mobile Co., Ltd.
Country of origin	: KOREA
Rating	: Adapter : (100-240) V a.c. (47-63) Hz , 0.7A : DC input : 5 Vd.c. , 5.0 A
Receipt Date	: 2009-04-09
X-tal list(s)	: 13 MHz, 20 MHz, 6 MHz, 14.75 MHz

2.2 General descriptions of EUT

This device fully compatible with the 802.11b standard to provide a wireless data rate of 11Mbps.
 This device fully compatible with the 802.11g 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 (2008)

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 devices 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 methods apply to the measurement of individual units or systems comprised of multiple units.

Summary of Test Results

Applied Standard : 47 CFR Part 15, Subpart C				
Standard	Test Type	Result	Remark	Limit
15.247(c)	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 output 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 Standard : 47 CFR Part 15, Subpart C				
Standard	Test Type	Result	Remark	Limit
15.247(c)	AC Power Conducted Emission	Pass	Meet the requirement	
15.247(c)	Electric Field Strength Spurious Emissions, 30MHz ~ 1000MHz	Pass	Meet the requirement	

Note: Except as provided in table(802.11a mode), other testing items were tested by quietek testing Lab.

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 : WLAN: Low(2412MHz), Middle(2437Mhz),High(2462MHz)

c. Test Mode : Continuous Output, DSSS, OFDM

d. Test rate : the worst case of rate 802.11b(11Mbps), 802.11g(54Mbps)

4.2 EUT Operation(For 802.11a)

a. Channel

Ch.	Frequency	Ch.	Frequency
149	5745MHz	161	5805MHz
153	5765MHz	165	5825MHz
157	5785MHz		

b. Measurement Channel : Low(5745MHz), Middle(57850Mhz),High(5825MHz)

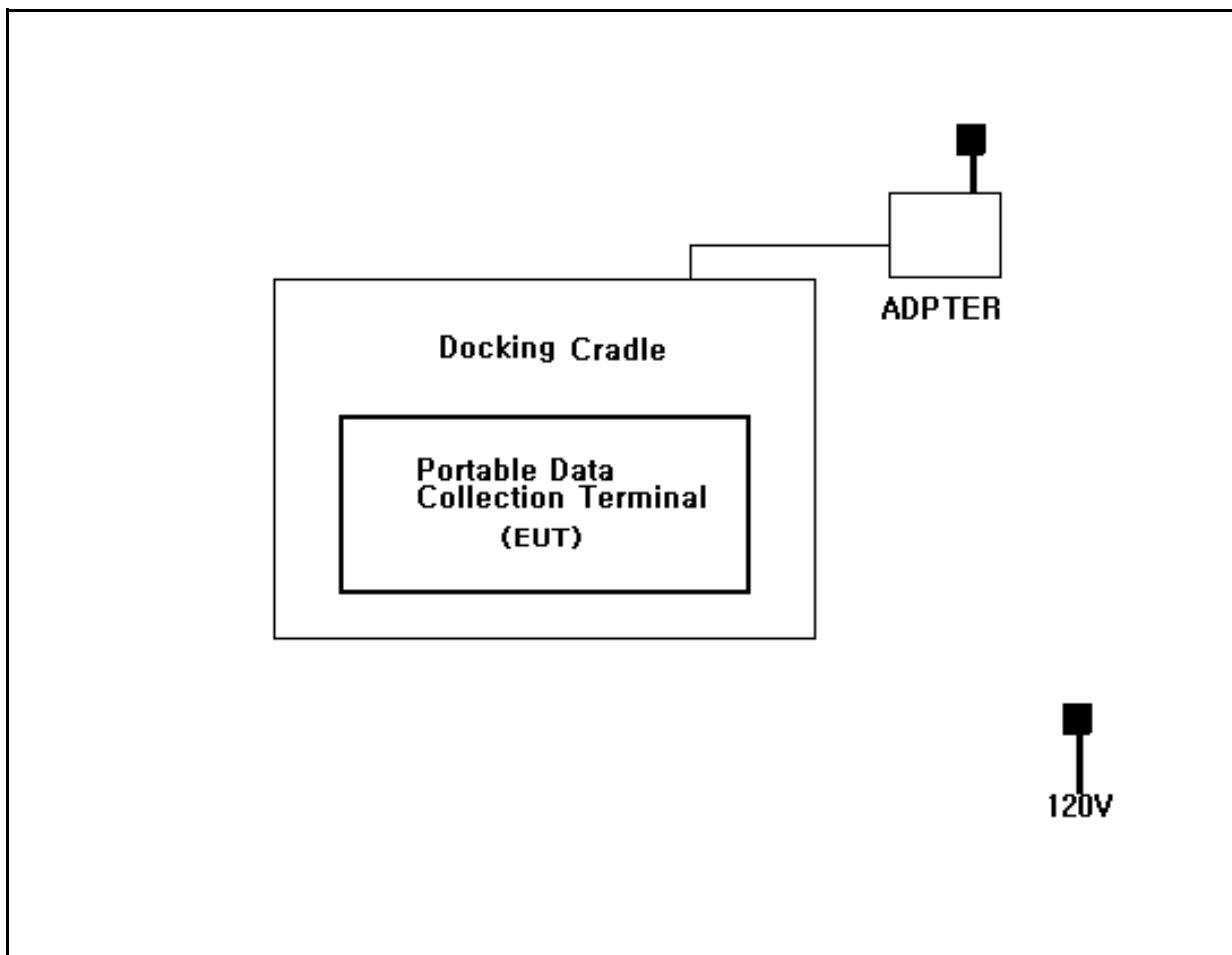
c. Test Mode : Continuous Output, OFDM

d. Test rate : the worst case of rate(6Mbps)

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 highest level of emission
- * The computer system ran a test program to enable EUT under transmission/receiving condition continuously at specific channel frequency.

4.4 Configuration and Peripherals



4.5 EUT and Support equipment

Equipment Name	Model Name	S/N	Manufacturer	Remark (FCC ID)
Portable Data Collection Terminal	MM3	NONE	M3 Mobile Co., Ltd.	EUT
Docking Cradle	NONE	NONE	M3 Mobile Co., Ltd.	
ADAPTER	STD-0505P	NONE	Sunrise Electronics (Dongguan) Co.,Ltd.	

4.6 Cable Connecting

Start Equipment		End Equipment		Cable Standard		Remark
Name	I/O port	Name	I/O port	Length	Shielded	
Portable Data Collection Terminal	Docking	Docking Cradle	Docking	-	Unshielded	
Docking Cradle	POWER	Adapter	-	1.5	Unshielded	

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= 1MHz
- . Span= 20MHz
- . Sweep= suitable duration based on the EUT specification.

6dB Bandwidth Test Instruments

Description	Model	Serial Number	Cal. Due Date
Spectrum Analyzer	E4407B	US42041281	2009-09-11
RF Cable	Length: 6cm	-	
-Spectrum Analyzer <=> EUT	Loss: 1.5dB	-	

5.3 Measurement results

EUT	Portable Data Collection Terminal	MODEL	MM3
MODE	CCK	ENVIRONMENTAL CONDITION	24 , 44%RH
INPUT POWER	3.7 Vdc		

(802.11b)

CHANNEL	Channel Frequency (MHz)	Bandwidth at 6dB below(MHz)	Minimum Limit (MHz)	PASS/FAIL
1	2412	10.50	0.5	PASS
6	2437	10.57	0.5	PASS
11	2462	10.59	0.5	PASS

EUT	Portable Data Collection Terminal	MODEL	MM3
MODE	OFDM	ENVIRONMENTAL CONDITION	24 , 43%RH
INPUT POWER	3.7 Vdc		

(802.11g)

CHANNEL	Channel Frequency (MHz)	Bandwidth at 6dB below(MHz)	Minimum Limit (MHz)	PASS/FAIL
1	2412	16.38	0.5	PASS
6	2437	16.32	0.5	PASS
11	2462	16.36	0.5	PASS



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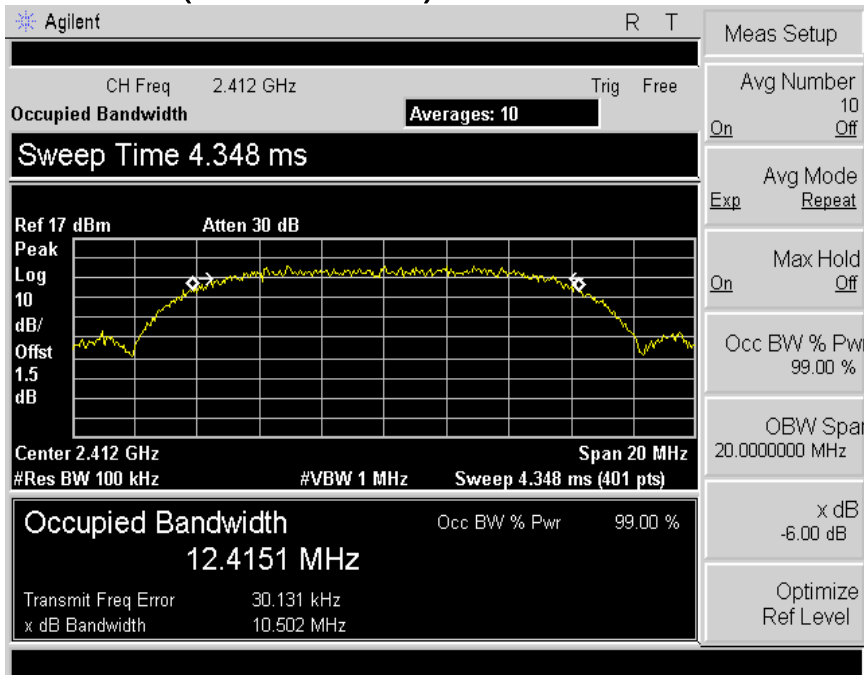
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Seoul, 158-803, Korea



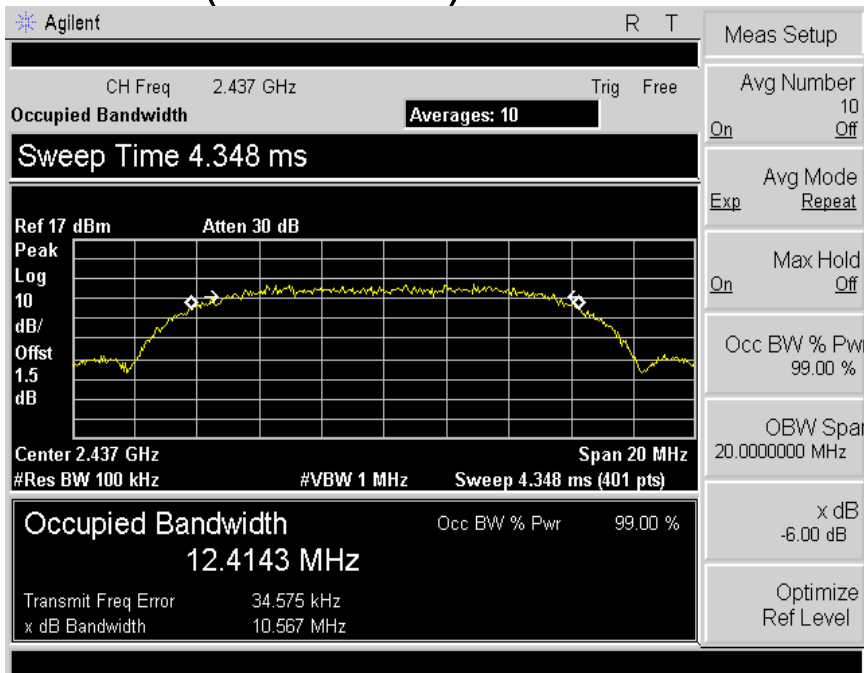
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5.4 Trace data

CCK (802.11b-1ch)



CCK (802.11b-6ch)





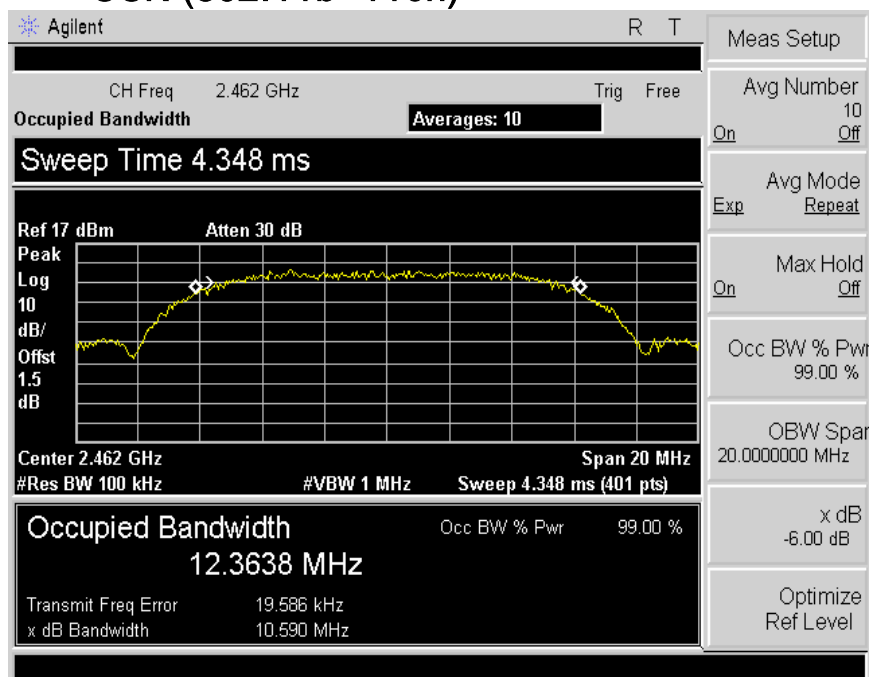
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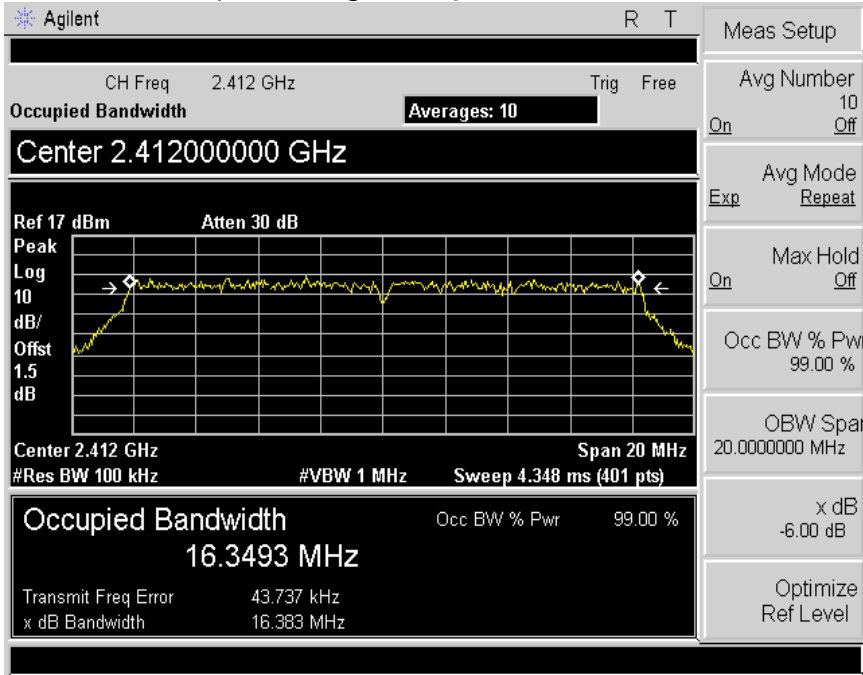
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CCK (802.11b - 11ch)

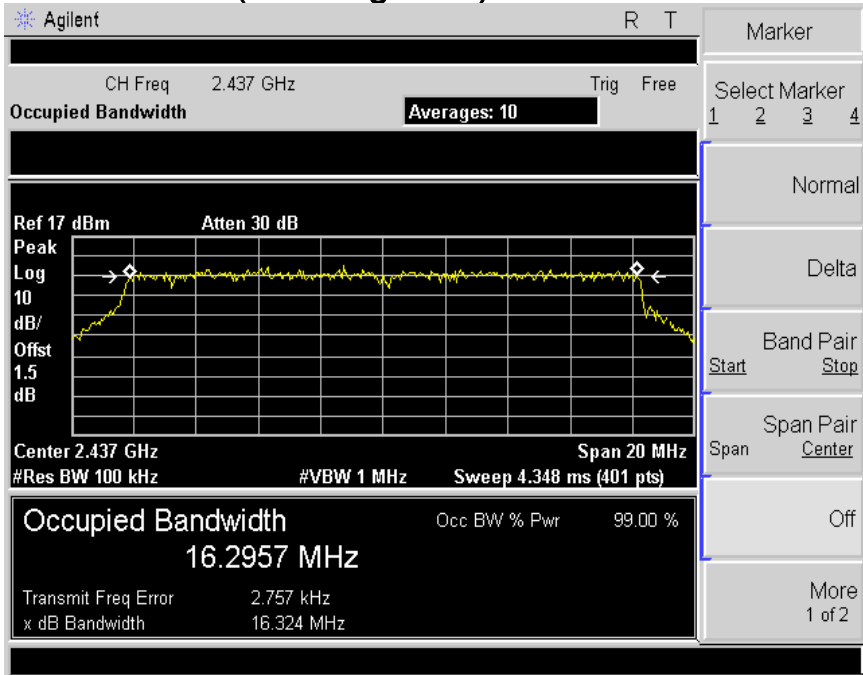


5.4 Trace data

OFDM (802.11g - 1ch)



OFDM (802.11g - 6ch)





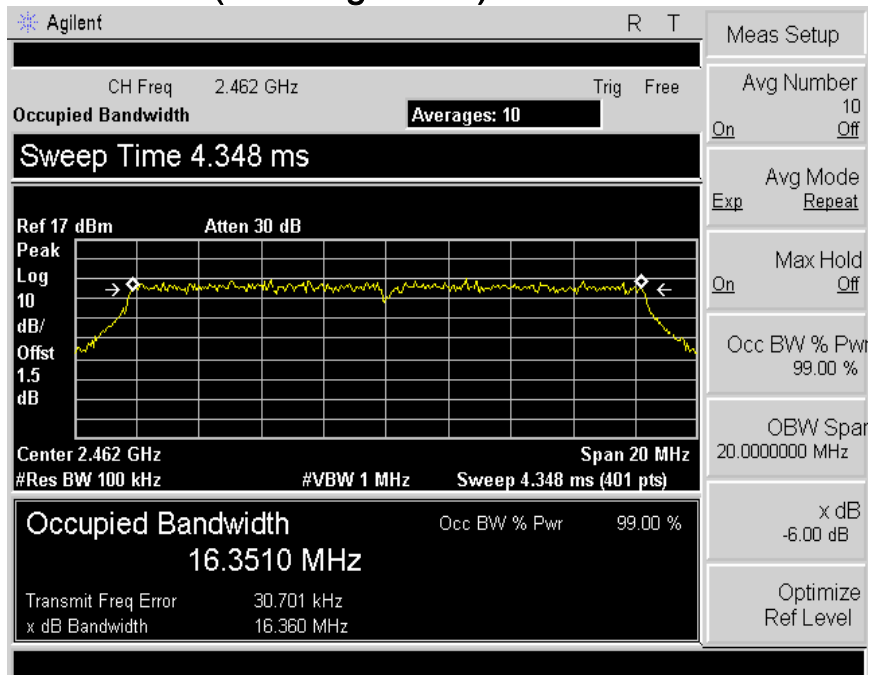
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OFDM (802.11g-11ch)



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	Cal. Due Date
Power Meter	NRVS	849622/045	2010-02-11
Power Sensor	NRV-251	325948/013	2010-02-11
RF Cable:	Length: 6cm	-	
-Spectrum Analyzer <=> EUT	Loss: 1.5 dB	-	

6.2 Measurement results

EUT	Portable Data Collection Terminal	MODEL	MM3
MODE	CCK	ENVIRONMENTAL CONDITION	24 , 43%RH
INPUT POWER	3.7 Vdc		

CHANNEL	Channel Frequency (MHz)	Peak Power Output(dBm)		Limit[1W] (dBm)	PASS/FAIL
		(dBm)	(W)		
1	2412	13.2	0.021	30.0	PASS
6	2437	14.2	0.026	30.0	PASS
11	2462	14.2	0.026	30.0	PASS

(802.11g)

EUT	Portable Data Collection Terminal	MODEL	MM3
MODE	OFDM	ENVIRONMENTAL CONDITION	24 , 43%RH
INPUT POWER	3.7 Vdc		

CHANNEL	Channel Frequency (MHz)	Peak Power Output(dBm)		Limit[1W] (dBm)	PASS/FAIL
		(dBm)	(W)		
1	2412	8.8	0.008	30.0	PASS
6	2437	11.0	0.012	30.0	PASS
11	2462	10.8	0.012	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 density 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	Cal. Due Date
Spectrum Analyzer	E4407B	US42041281	2009-09-11
RF Cable	Length: 6cm	-	
- Spectrum Analyzer <=> EUT	Loss: 1.5dB	-	

7.3 Measurement results

EUT	Portable Data Collection	MODEL	MM3	
MODE	CCK	ENVIRONMENTAL CONDITION	23 , 43%RH	
INPUT POWER	3.7 Vdc			

CHANNEL	Channel Frequency (MHz)	RF Power Spectral Density (dBm)	Maximum Limit (dBm)	PASS/FAIL
1	2412	5.69	8.0	PASS
6	2437	6.69	8.0	PASS
11	2462	7.09	8.0	PASS

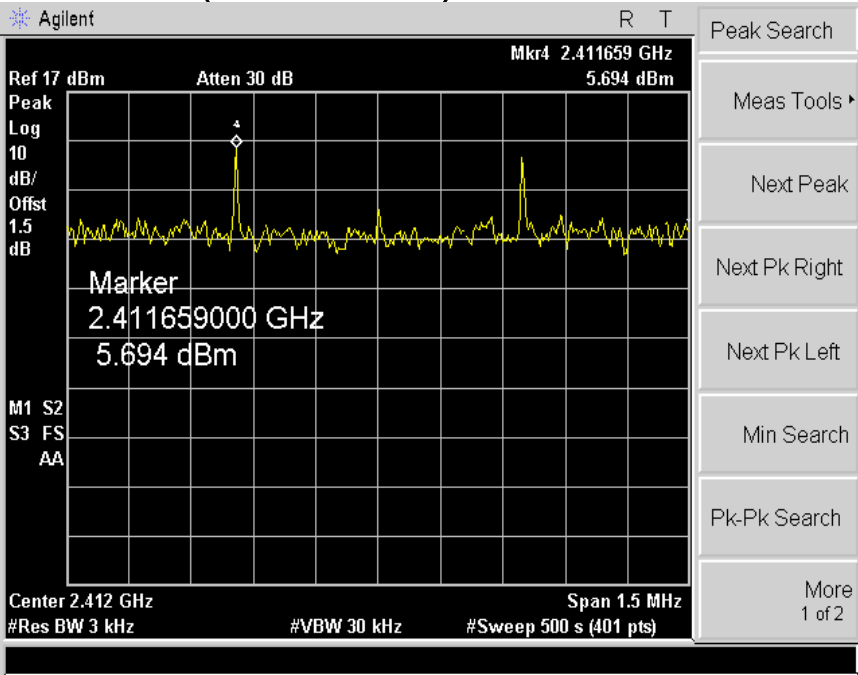
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EUT	Portable Data Collection Terminal	MODEL	MM3
MODE	OFDM	ENVIRONMENTAL CONDITION	23 , 43%RH
INPUT POWER	3.7 Vdc		

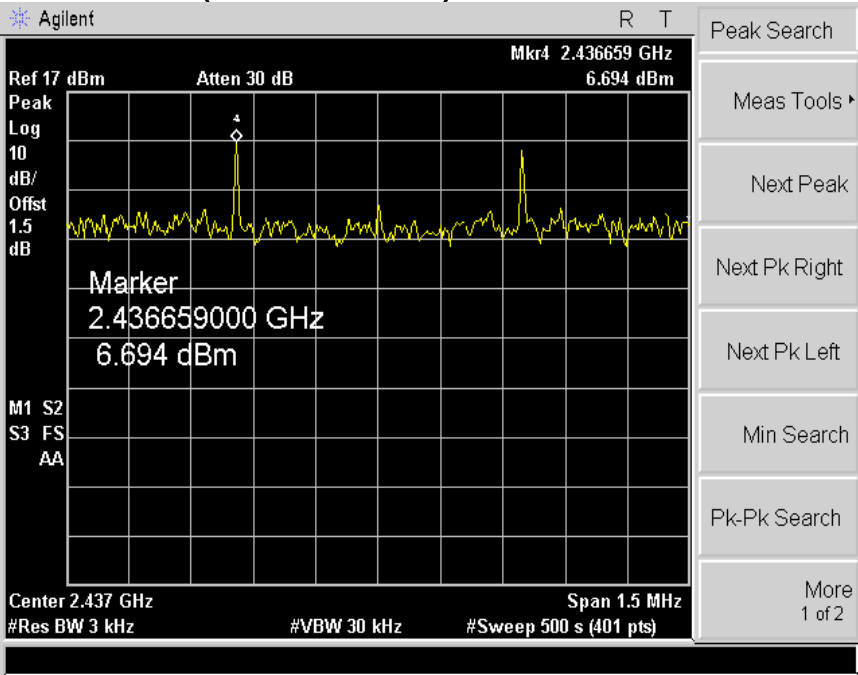
CHANNEL	Channel Frequency (MHz)	RF Power Spectral Density (dBm)	Maximum Limit (dBm)	PASS/FAIL
1	2412	-12.97	8.0	PASS
6	2437	-12.65	8.0	PASS
11	2462	-12.64	8.0	PASS

7.4 Trace data

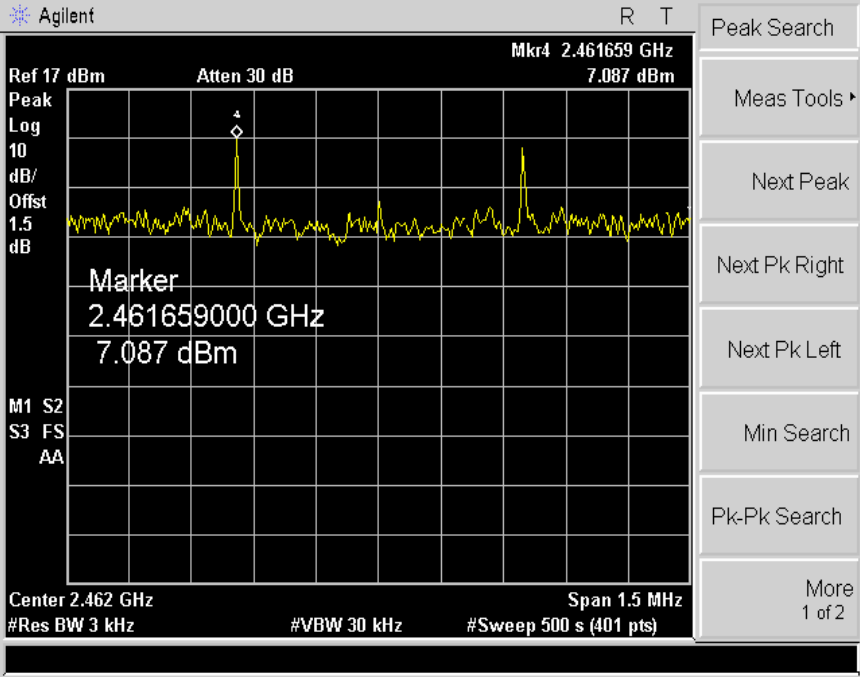
CCK (802.11b-1ch)



CCK (802.11b-6ch)

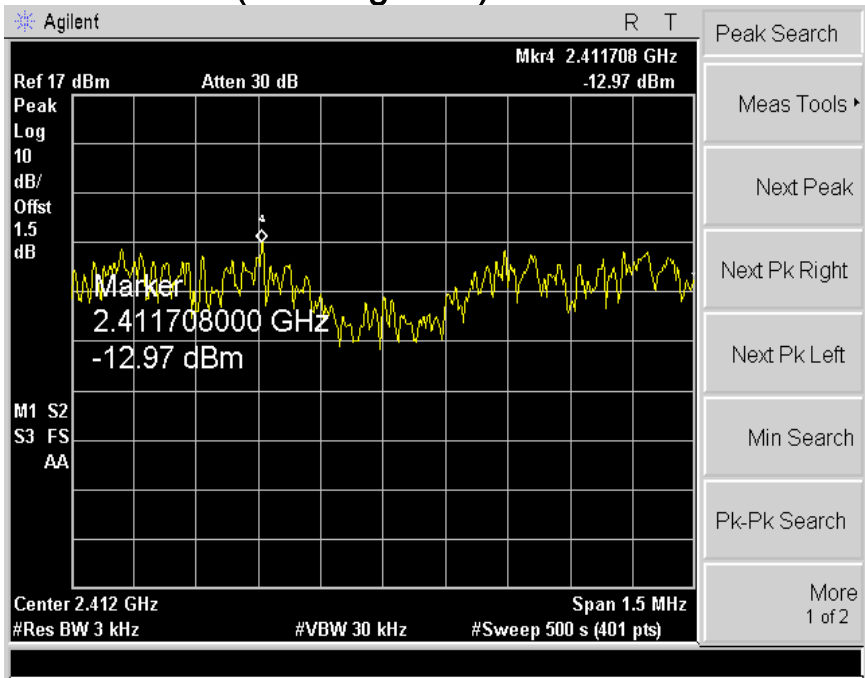


CCK (802.11b - 11ch)

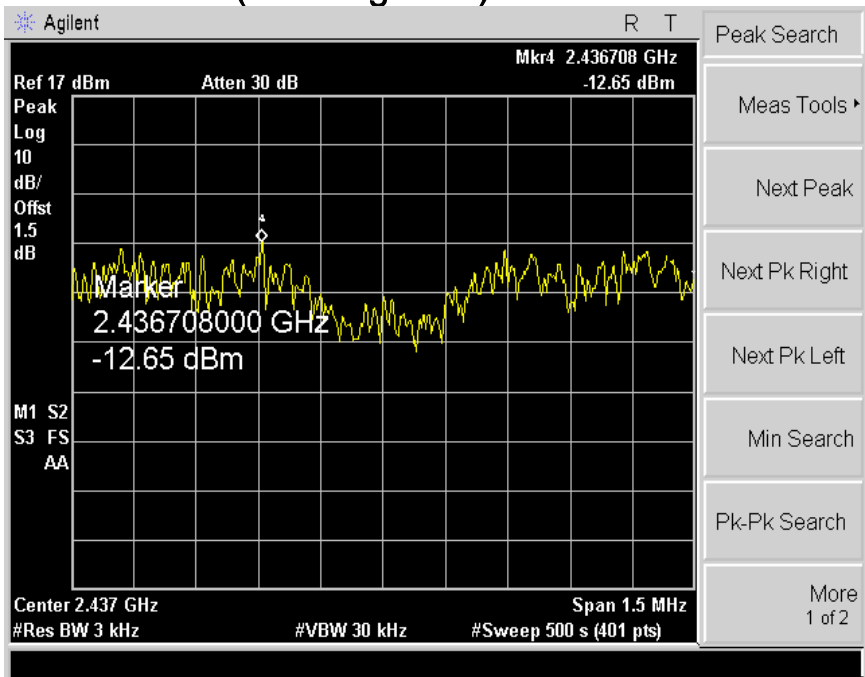


7.4 Trace data

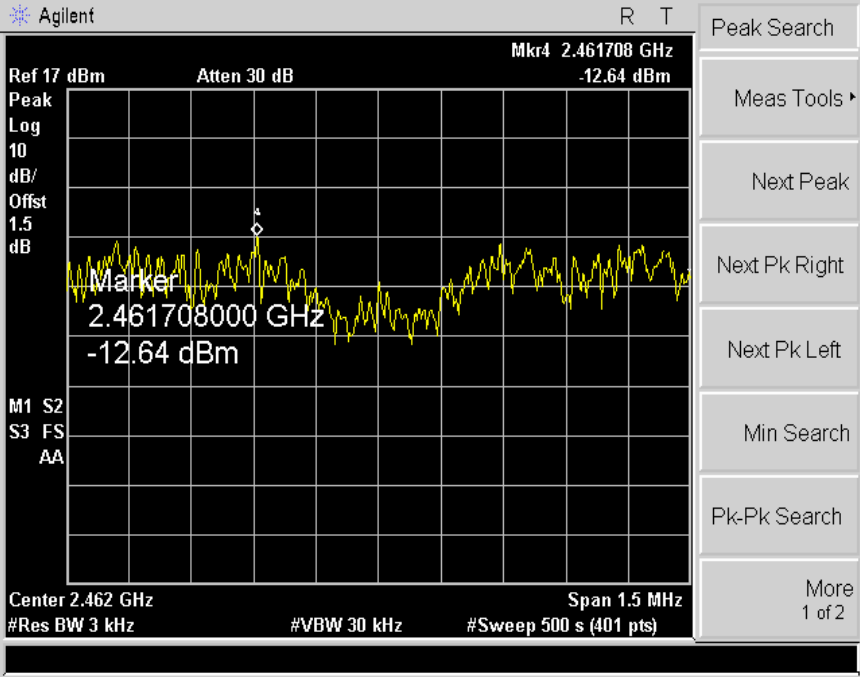
OFDM (802.11g - 1ch)



OFDM (802.11g - 6ch)



OFDM (802.11g-11ch)



8. band-edge and out of band emissions.

8.1 Test procedure

The radio frequency 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), 100KHz(11g)
- . VBW= 100KHz(11b), 100KHz(11g)
- . Span= suitable frequency span
- . Sweep= suitable duration based on the EUT specification.

Band Edge&Out of Emission Test Instruments

Description	Model	Serial Number	Cal. Due Date
Spectrum Analyzer	E4407B	US42041281	2009-09-11
RF Cable	Length: 6cm		-
-Spectrum Analyzer <=> EUT	Loss: 1.5dB		-

8.3 Measurement results of band-edge & out of emission

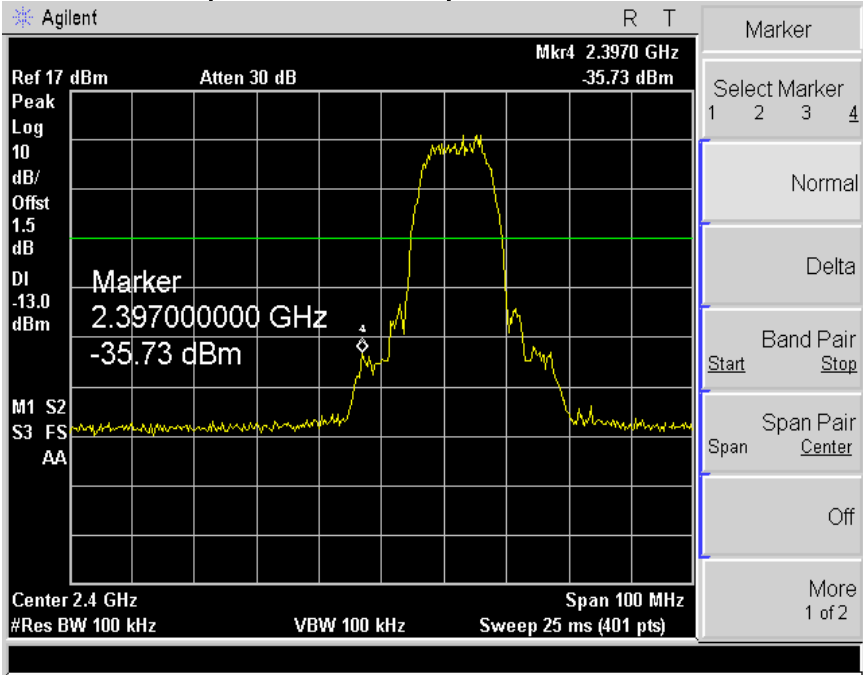
EUT	Portable Data Collection Terminal	MODEL	MM3
MODE	CCK	ENVIRONMENTAL CONDITION	23 , 43%RH
INPUT POWER	3.7 Vdc		

CHANNEL	Channel Frequency (MHz)	Measurement Frequency (MHz)	Peak Level at 20dB below(dBm)	Limit (MHz)
1	2412	2397.0	-35.73	Below 20dB from peak power level to band edge
11	2462	2484.8	-46.81	Below 20dB from peak power level to band edge

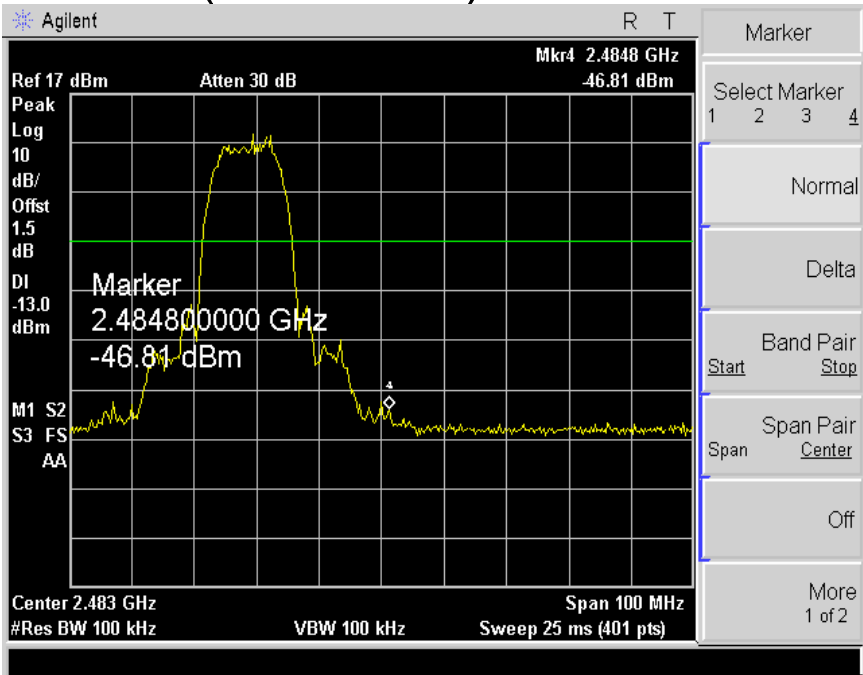
EUT	Portable Data Collection Terminal	MODEL	MM3
MODE	OFDM	ENVIRONMENTAL CONDITION	23 , 43%RH
INPUT POWER	3.7 Vdc		

CHANNEL	Channel Frequency (MHz)	Measurement Frequency (MHz)	Peak Level at 20dB below(dBm)	Limit (MHz)
1	2412	2397.0	-37.06	Below 20dB from peak power level to band edge
11	2462	2484.8	-44.02	Below 20dB from peak power level to band edge

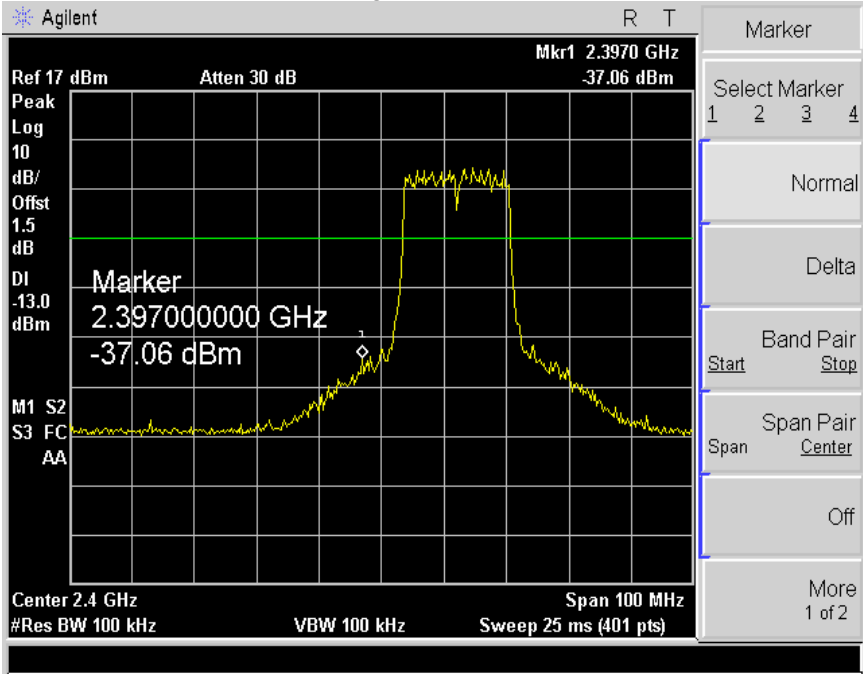
8.4 Trace data of band-edge & Out of Emission CCK (802.11b-1ch)



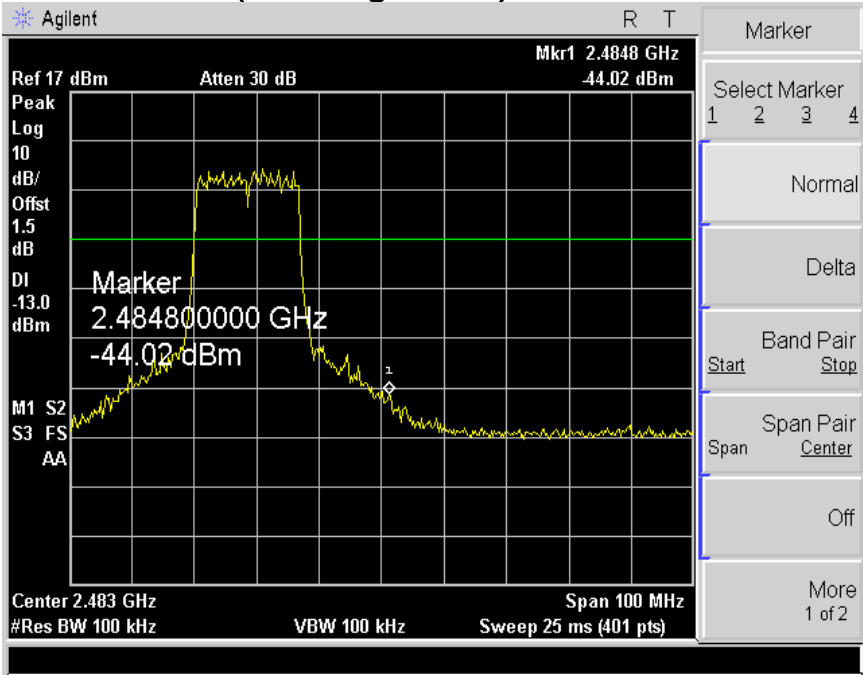
CCK (802.11b-11ch)



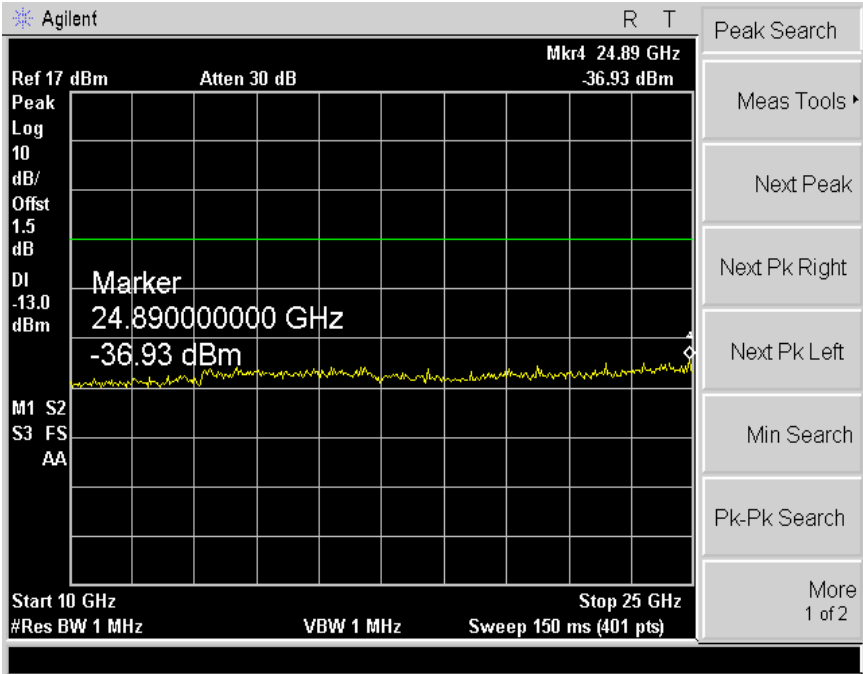
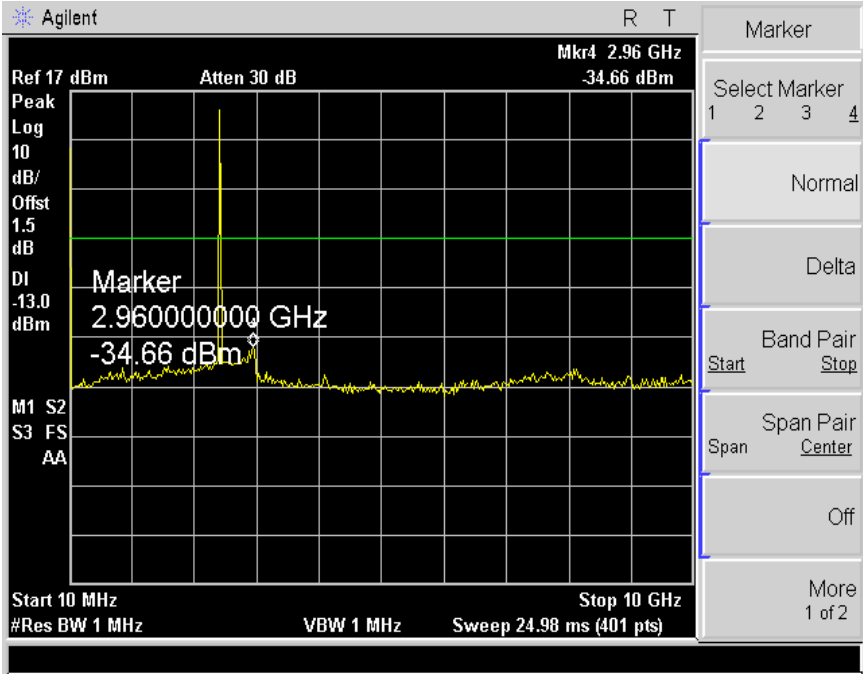
OFDM (802.11g - 1ch)



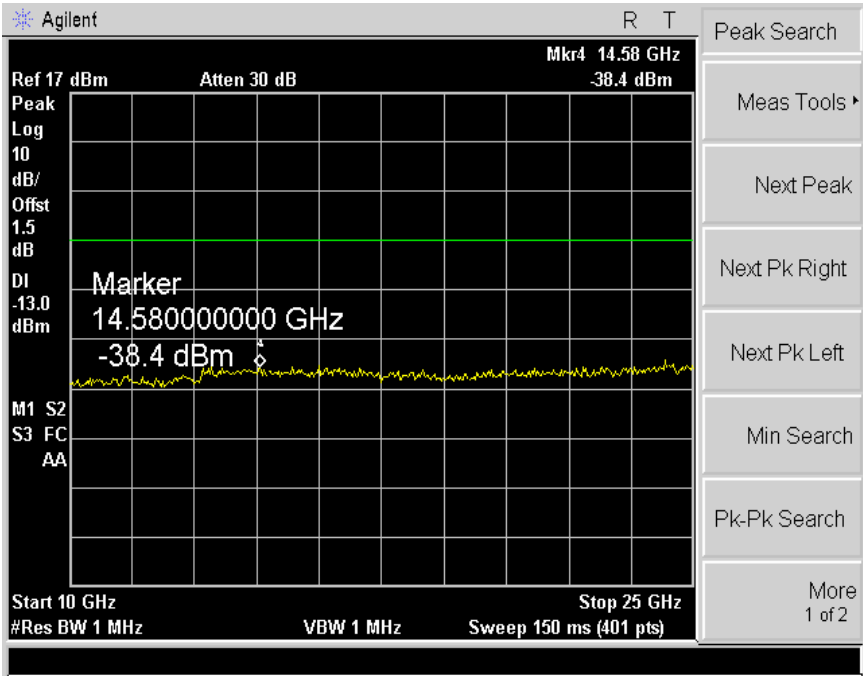
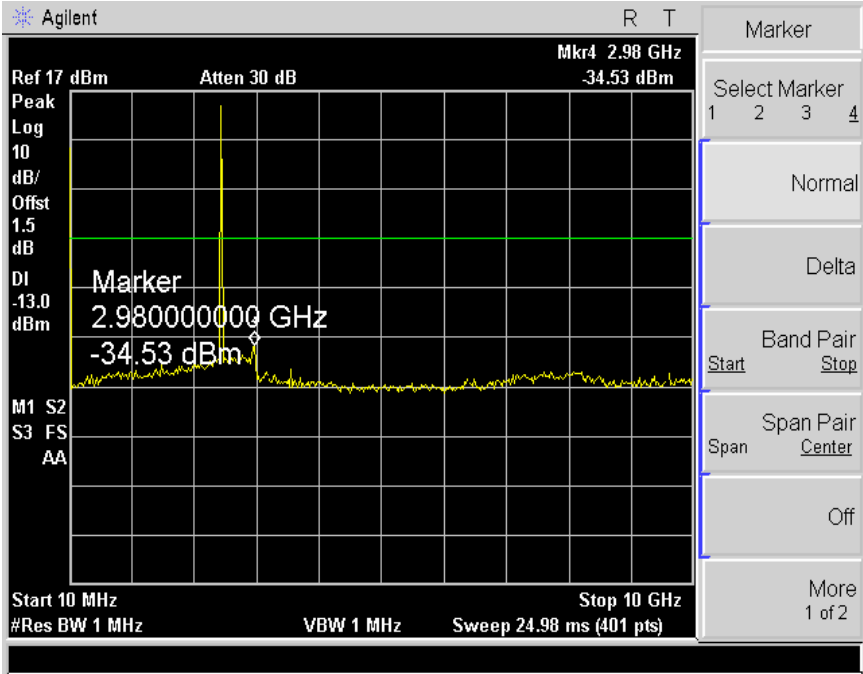
OFDM (802.11g - 11ch)



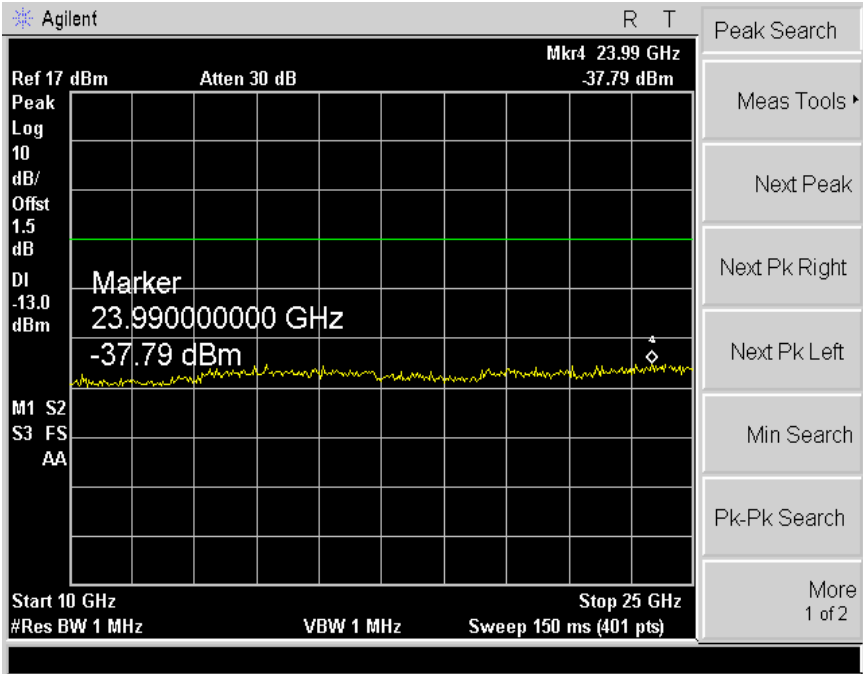
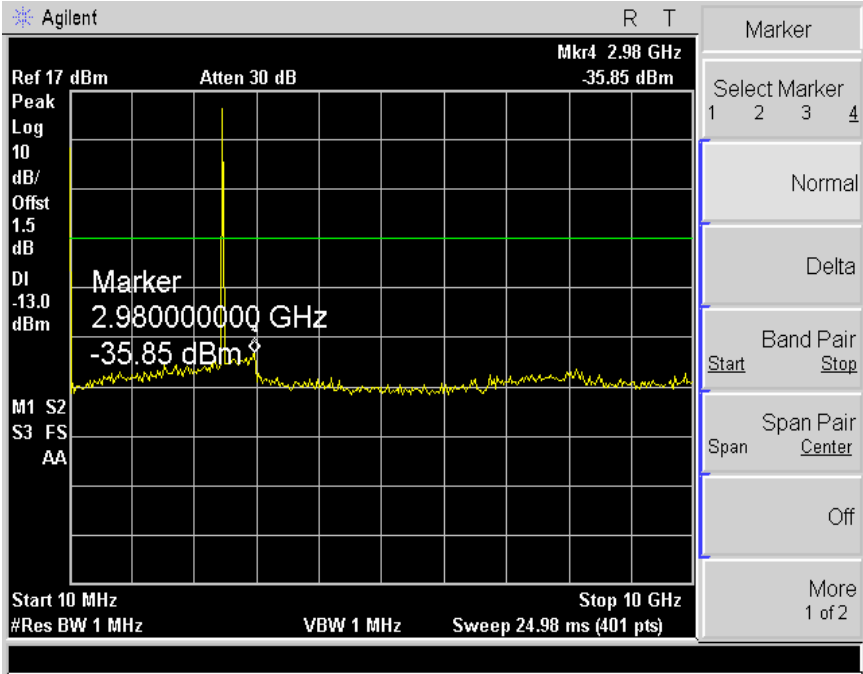
CCK (802.11b - 1ch)



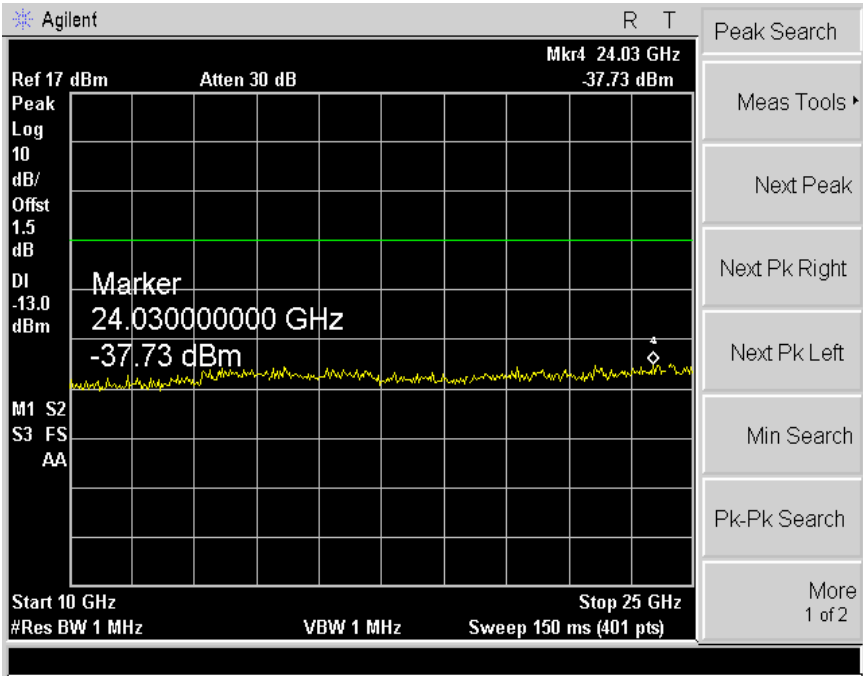
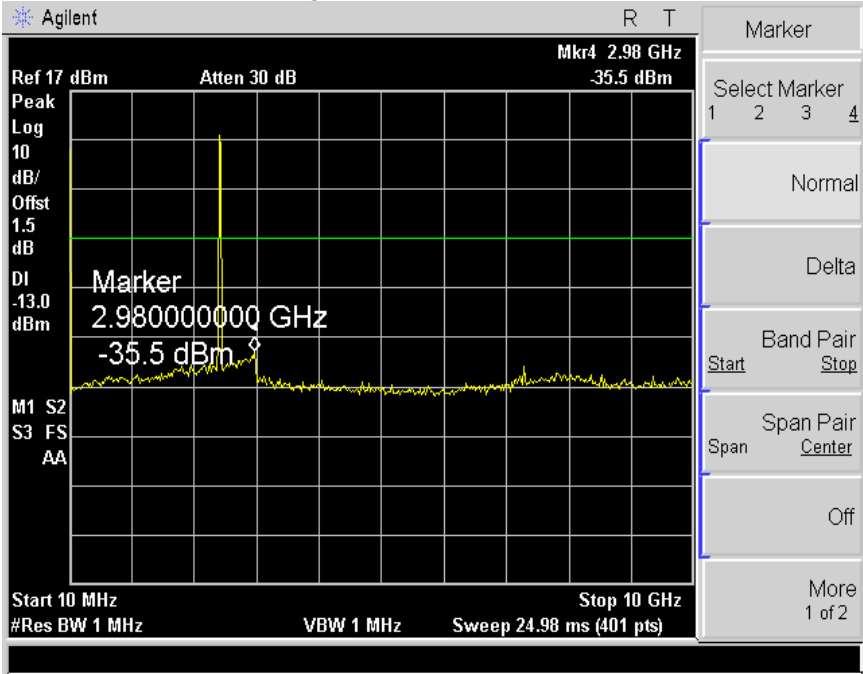
CCK (802.11b-6ch)



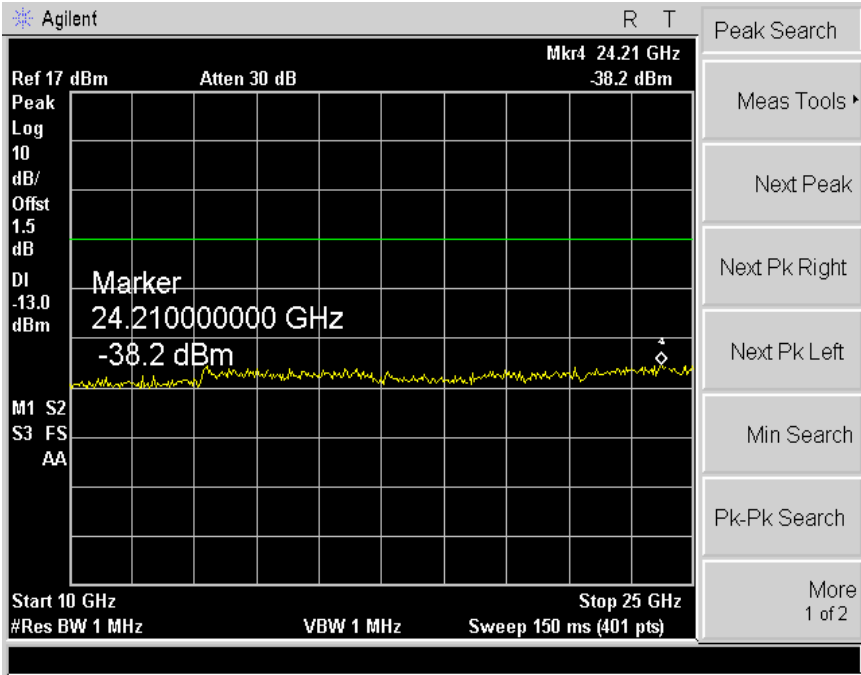
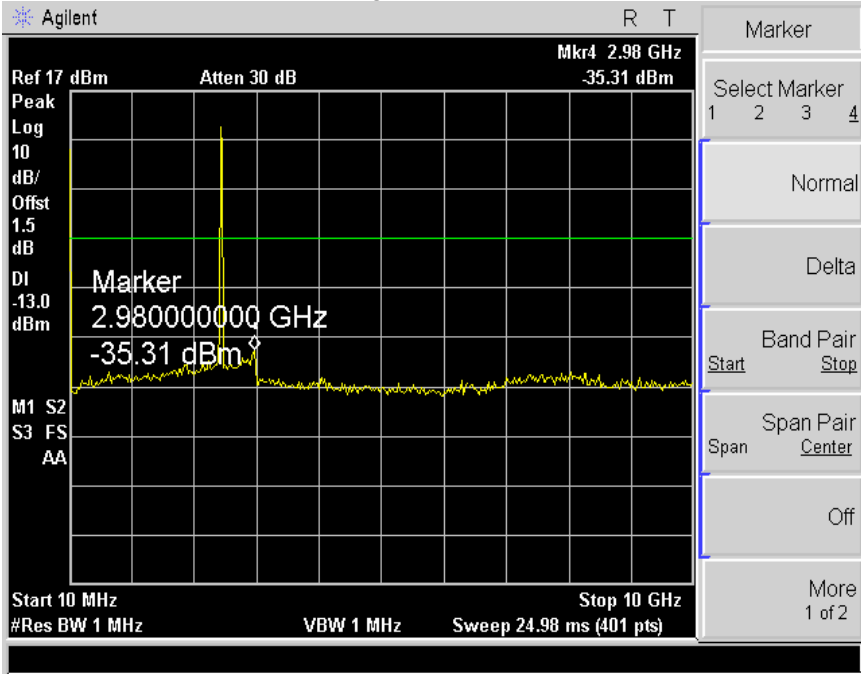
CCK (802.11b-11ch)



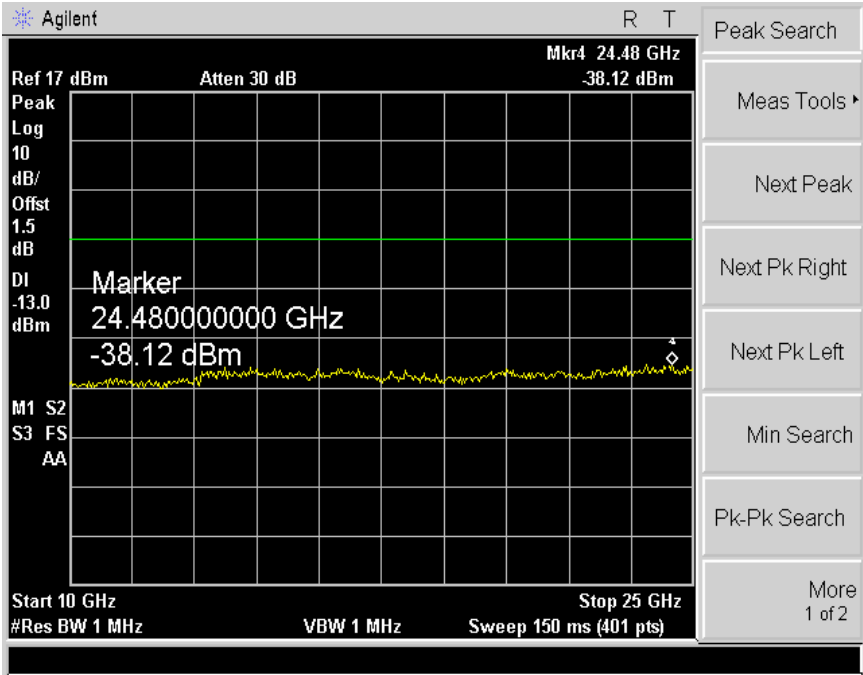
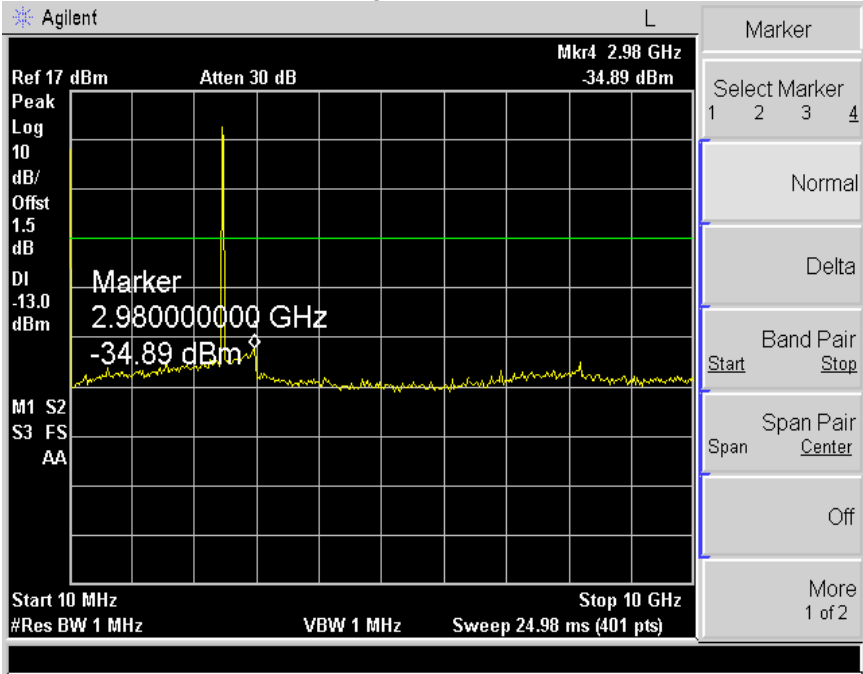
OFDM (802.11g - 1ch)



OFDM (802.11g-6ch)



OFDM (802.11g-11ch)



9.0 Measurement of radiated disturbance

Above 30 MHz Electric Field strength was measured in accordance with FCC Part 15 (2008) & ANSI C 63.4 (2003). The test setup was made according to FCC Part 15 (2008) & 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 setup.

9.1 Measurement equipments

Equipment Name	Type	Manufacturer	Serial No.	Next Calibration date
TEST Receive	ESVS10	Rohde & Schwarz	838562/002	2010. 1. 29
TEST Receive	ESVSI7	Rohde & Schwarz	100185	2009. 8. 27
Spectrum Analyzer	R3273	ADVANTEST	110600592	2010. 6. 04
LogBicon Antenna	VULB 9160	Schwarzbeck	3142	2010. 5. 13
Amplifier	8447F	HP	2805A02972	2010. 6. 24
PREAMPLIFIER	8449B	HP	3008A00581	2010. 3. 06
Horn Antenna	BBHA 9120 D	Schwarzbeck	352	2010. 6.17
Turn Table	2087	EMCO	2129	-
Antenna Mast	2070-01	EMCO	9702-203	-
ANT Mast Controller	2090	EMCO	1535	-
Turn Table Controller	2090	EMCO	1535	-

9.2 Environmental Condition

Test Place : Open site(3m)
 Temperature (°C) : 24
 Humidity (%) : 34 %

9.3 Test Data for wireless LAN

Test Date : 7-May-09

Measurement Distance : 3 m

Frequency (MHz)	Reading (dB μ V)	Position (V/H)	Height (m)	Correction Factor		Result Value		
				Ant Factor (dB)	Cable (dB)	Limit (dB μ V/m)	Result (dB μ V/m)	Margin (dB)
31.40	16.40	V	1.0	11.20	0.9	40.0	28.50	-11.50
66.31	15.20	V	1.0	10.46	1.3	40.0	26.91	-13.09
130.01	16.90	H	1.9	11.98	1.8	43.5	30.67	-12.83
166.24	14.50	H	1.6	12.22	2.1	43.5	28.86	-14.64
216.00	12.40	H	1.5	10.22	2.5	43.5	25.11	-18.39
233.14	20.50	V	1.0	10.82	2.6	46.0	33.94	-12.06
300.00	12.10	H	1.3	12.95	3.2	46.0	28.23	-17.77
384.60	9.60	H	1.0	14.79	3.9	46.0	28.29	-17.71
600.01	10.10	H	1.0	19.44	5.5	46.0	35.00	-11.00
824.50	5.40	H	1.0	22.40	7.0	46.0	34.83	-11.17
Remark	H : Horizontal, V : Vertical TEST MODE : 802.11b *Checked in all 3 axis and the maximum measured data were reported. *CL = Cable Loss-Amplifier Gain(In case of above1000Mhz) *CL = Cable Loss(In case of below1000Mhz) *The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120KHz for Quasi-peak detection at frequency below 1GHz. *The resolution bandwidth and video bandwidth of spectrum analyzer is 1MHz and 10Hz for average detection at frequency above 1GHz.							

9.3-1 Test Data for wireless LAN

Test Date : 7-May-09

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 (dB)
PEAK(RBW:1Mhz VBW:1MHz)								
2412	73.34	H	1.3	27.62	4.5	*OB	105.46	-
4824	46.54	H	1.1	31.30	-28.8	74.0	49.00	-25.00
2412	70.78	V	1.2	27.62	4.5	*OB	102.90	-
4824	48.17	V	1.2	31.30	-28.8	74.0	50.63	-23.37
AV(RBW:1Mhz VBW:10Hz)								
2412	52.52	H	1.3	27.62	4.5	*OB	84.64	-
4824	31.83	H	1.1	31.30	-28.8	54.0	34.29	-19.71
2412	50.96	V	1.2	27.62	4.5	*OB	83.08	-
4824	31.64	V	1.2	31.30	-28.8	54.0	34.10	-19.90
Remark	H : Horizontal, V : Vertical TEST MODE : 802.11b - CH1(2412MHz) *The TX signal isn't detected from 3th harmonics. *OB = Operating band *Checked in all 3 axis and the maximum measured data were reported. *CL = Cable Loss-Amplifier Gain(In case of above1000Mhz) *CL = Cable Loss(In case of below1000Mhz) *The resolution bandwidth and video bandwidth of spectrum analyzer is 1MHz and 10Hz for average detection at frequency above 1GHz.							

9.3-2 Test Data for wireless LAN

Test Date : 7-May-09

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 (dB)
PEAK(RBW:1Mhz VBW:1MHz)								
2437	76.97	H	1.2	27.61	4.5	*OB	109.08	-
4874	46.97	H	1.3	31.37	-28.7	74.0	49.65	-24.35
2437	74.14	V	1.1	27.61	4.5	*OB	106.25	-
4874	47.10	V	1.1	31.37	-28.7	74.0	49.78	-24.22
AV(RBW:1Mhz VBW:10Hz)								
2437	60.17	H	1.2	27.61	4.5	*OB	92.28	-
4874	32.39	H	1.3	31.37	-28.7	54.0	35.07	-18.93
2437	59.74	V	1.1	27.61	4.5	*OB	91.85	-
4874	32.84	V	1.1	31.37	-28.7	54.0	35.52	-18.48
Remark	H : Horizontal, V : Vertical TEST MODE : 802.11b - CH6(2437MHz) *The TX signal isn't detected from 3th harmonics. *OB = Operating band *Checked in all 3 axis and the maximum measured data were reported. *CL = Cable Loss-Amplifier Gain(In case of above1000Mhz) *CL = Cable Loss(In case of below1000Mhz) *The resolution bandwidth and video bandwidth of spectrum analyzer is 1MHz and 10Hz for average detection at frequency above 1GHz.							

9.3-3 Test Data for wireless LAN

Test Date : 7-May-09

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 (dB)
PEAK(RBW:1Mhz VBW:1MHz)								
2462	78.50	H	1.2	27.60	4.5	*OB	110.60	-
4924	49.17	H	1.2	31.44	-28.6	74.0	52.03	-21.97
2462	78.51	V	1.1	27.60	4.5	*OB	110.61	-
4924	48.96	V	1.4	31.44	-28.6	74.0	51.82	-22.18
AV(RBW:1Mhz VBW:10Hz)								
2462	66.67	H	1.2	27.60	4.5	*OB	98.77	-
4924	33.53	H	1.2	31.44	-28.6	54.0	36.39	-17.61
2462	68.50	V	1.1	27.60	4.5	*OB	100.60	-
4924	33.96	V	1.4	31.44	-28.6	54.0	36.82	-17.18
Remark	H : Horizontal, V : Vertical TEST MODE : 802.11b - CH11(2462MHz) *The TX signal isn't detected from 3th harmonics. *OB = Operating band *Checked in all 3 axis and the maximum measured data were reported. *CL = Cable Loss -Amplifier Gain(In case of above1000Mhz) *CL = Cable Loss(In case of below1000Mhz) *The resolution bandwidth and video bandwidth of spectrum analyzer is 1MHz and 10Hz for average detection at frequency above 1GHz.							

9.4 Measurement of radiated disturbance

Above 30 MHz Electric Field strength was measured in accordance with FCC Part 15 (2008) & ANSI C 63.4 (2003). The test setup was made according to FCC Part 15 (2008) & 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 setup.

9.5 Measurement equipments

Equipment Name	Type	Manufacturer	Serial No.	Next Calibration date
TEST Receive	ESVS10	Rohde & Schwarz	838562/002	2010. 1. 29
TEST Receive	ESVSI7	Rohde & Schwarz	100185	2009.08. 27
Spectrum Analyzer	R3273	ADVANTEST	110600592	2009. 6. 09
LogBicon Antenna	VULB 9160	Schwarzbeck	3142	2010. 5. 13
Amplifier	8447F	HP	2805A02972	2009. 6. 26
PREAMPLIFIER	8449B	HP	3008A00581	2010. 3. 06
Horn Antenna	BBHA 9120 D	Schwarzbeck	469	2009. 6. 13
Turn Table	2087	EMCO	2129	-
Antenna Mast	2070-01	EMCO	9702-203	-
ANT Mast Controller	2090	EMCO	1535	-
Turn Table Controller	2090	EMCO	1535	-

9.6 Environmental Condition

Test Place : Open site(3m)
 Temperature (°C) : 25
 Humidity (%) : 36 %

9.7 Test Data for wireless LAN

Test Date : 7-May-09

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 (dB)
31.40	16.20	V	1.0	11.20	0.9	40.0	28.30	-11.70
66.37	14.90	V	1.0	10.45	1.3	40.0	26.60	-13.40
130.01	14.90	H	2.0	11.98	1.8	43.5	28.67	-14.83
166.25	14.20	H	1.6	12.22	2.1	43.5	28.56	-14.94
216.00	12.20	H	1.4	10.22	2.5	43.5	24.91	-18.59
220.46	16.70	V	1.0	10.38	2.5	43.5	29.61	-13.89
233.14	20.10	V	1.0	10.82	2.6	46.0	33.54	-12.46
300.01	12.20	H	1.0	12.95	3.2	46.0	28.33	-17.67
364.46	10.40	H	1.2	14.33	3.7	46.0	28.46	-17.54
600.01	11.10	H	1.0	19.44	5.5	46.0	36.00	-10.00
824.60	5.20	H	1.0	22.40	7.0	46.0	34.63	-11.37
Remark	H : Horizontal, V : Vertical TEST MODE : 802.11g *Checked in all 3 axis and the maximum measured data were reported. *CL = Cable Loss-Amplifier Gain(In case of above1000Mhz) *CL = Cable Loss(In case of below1000Mhz) *The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120KHz for Quasi-peak detection at frequency below 1GHz. *The resolution bandwidth and video bandwidth of spectrum analyzer is 1MHz and 10Hz for average detection at frequency above 1GHz.							

9.7 -1 Test Data for wireless LAN

Test Date : 7-May-09

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 (dB)
PEAK(RBW:1Mhz VBW:1MHz)								
2412	73.08	H	1.1	27.62	4.5	*OB	105.20	-
4824	46.17	H	1.2	31.30	-28.8	74.0	48.63	-25.37
2412	70.50	V	1.2	27.62	4.5	*OB	102.62	-
4824	48.64	V	1.1	31.30	-28.8	74.0	51.10	-22.90
AV(RBW:1Mhz VBW:10Hz)								
2412	38.65	H	1.1	27.62	4.5	*OB	70.77	-
4824	31.33	H	1.2	31.30	-28.8	54.0	33.79	-20.21
2412	36.85	V	1.2	27.62	4.5	*OB	68.97	-
4824	31.35	V	1.1	31.30	-28.8	54.0	33.81	-20.19
Remark	H : Horizontal, V : Vertical TEST MODE : 802.11g - CH1(2412MHz) *The TX signal isn't detected from 3th harmonics. *OB = Operating band *Checked in all 3 axis and the maximum measured data were reported. *CL = Cable Loss-Amplifier Gain(In case of above1000Mhz) *CL = Cable Loss(In case of below1000Mhz) *The resolution bandwidth and video bandwidth of spectrum analyzer is 1MHz and 10Hz for average detection at frequency above 1GHz.							

9.7-2 Test Data for wireless LAN

Test Date : 6-May-09

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 (dB)
PEAK(RBW:1Mhz VBW:1MHz)								
2437	72.46	H	1.3	27.61	4.5	*OB	104.57	-
4874	47.17	H	1.2	31.37	-28.7	74.0	49.85	-24.15
2437	71.62	V	1.2	27.61	4.5	*OB	103.73	-
4874	47.17	V	1.0	31.37	-28.7	74.0	49.85	-24.15
AV(RBW:1Mhz VBW:10Hz)								
2437	38.17	H	1.3	27.61	4.5	*OB	70.28	-
4874	32.36	H	1.2	31.37	-28.7	54.0	35.04	-18.96
2437	36.97	V	1.2	27.61	4.5	*OB	69.08	-
4874	32.61	V	1.0	31.37	-28.7	54.0	35.29	-18.71
Remark	H : Horizontal, V : Vertical TEST MODE : 802.11g - CH6(2437MHz) *The TX signal isn't detected from 3th harmonics. *OB = Operating band *Checked in all 3 axis and the maximum measured data were reported. *CL = Cable Loss-Amplifier Gain(In case of above1000Mhz) *CL = Cable Loss(In case of below1000Mhz) *The resolution bandwidth and video bandwidth of spectrum analyzer is 1MHz and 10Hz for average detection at frequency above 1GHz.							

9.7 - 3 Test Data for wireless LAN

Test Date : 6-May-09

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 (dB)
PEAK(RBW:1Mhz VBW:1MHz)								
2462	72.25	H	1.1	27.60	4.5	*OB	104.35	-
4924	49.27	H	1.2	31.44	-28.6	74.0	52.13	-21.87
2462	72.64	V	1.2	27.60	4.5	*OB	104.74	-
4924	49.18	V	1.1	31.44	-28.6	74.0	52.04	-21.96
AV(RBW:1Mhz VBW:10Hz)								
2462	37.56	H	1.1	27.60	4.5	*OB	69.66	-
4924	33.61	H	1.2	31.44	-28.6	54.0	36.47	-17.53
2462	37.27	V	1.2	27.60	4.5	*OB	69.37	-
4924	34.00	V	1.1	31.44	-28.6	54.0	36.86	-17.14
Remark	H : Horizontal, V : Vertical TEST MODE : 802.11g - CH11(2462MHz) *The TX signal isn't detected from 3th harmonics. *OB = Operating band *Checked in all 3 axis and the maximum measured data were reported. *CL = Cable Loss-Amplifier Gain(In case of above1000Mhz) *CL = Cable Loss(In case of below1000Mhz) *The resolution bandwidth and video bandwidth of spectrum analyzer is 1MHz and 10Hz for average detection at frequency above 1GHz.							

9.8 Measurement of radiated disturbance

Above 30 MHz Electric Field strength was measured in accordance with FCC Part 15 (2008) & ANSI C 63.4 (2003). The test setup was made according to FCC Part 15 (2008) & 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 setup.

9.9 Measurement equipments

Equipment Name	Type	Manufacturer	Serial No.	Next Calibration date
TEST Receive	ESVS10	Rohde & Schwarz	838562/002	2010. 1. 29
TEST Receive	ESVSI7	Rohde & Schwarz	100185	2009. 8. 27
Spectrum Analyzer	R3273	ADVANTEST	110600592	2010. 6.04
LogBicon Antenna	VULB 9160	Schwarzbeck	3142	2010. 5. 13
Amplifier	8447F	HP	2805A02972	2010. 6.24
PREAMPLIFIER	8449B	HP	3008A00581	2010. 3. 06
Horn Antenna	BBHA 9120 D	Schwarzbeck	352	2010. 6.17
Turn Table	2087	EMCO	2129	-
Antenna Mast	2070-01	EMCO	9702-203	-
ANT Mast Controller	2090	EMCO	1535	-
Turn Table Controller	2090	EMCO	1535	-

9.10 Environmental Condition

Test Place : Open site(3m)
 Temperature (°C) : 25
 Humidity (%) : 34 %

9.11 Test Data for wireless LAN

Test Date : 7-May-09

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 (dB)
30.94	17.40	V	1.0	11.22	0.9	40.0	29.51	-10.49
66.20	16.20	V	1.0	10.48	1.3	40.0	27.93	-12.07
130.00	17.20	H	1.8	11.98	1.8	43.5	30.97	-12.54
166.14	14.40	V	1.0	12.23	2.1	43.5	28.77	-14.73
216.00	16.20	V	1.0	10.22	2.5	43.5	28.91	-14.59
233.04	21.90	V	1.0	10.81	2.6	46.0	35.34	-10.66
284.01	14.30	H	1.0	12.45	3.1	46.0	29.85	-16.15
384.60	10.20	H	1.0	14.79	3.9	46.0	28.89	-17.11
533.14	11.20	H	1.0	17.84	5.1	46.0	34.11	-11.89
824.60	6.00	H	1.0	22.40	7.0	46.0	35.43	-10.57
Remark	H : Horizontal, V : Vertical TEST MODE : 802.11a- ch 157 *Checked in all 3 axis and the maximum measured data were reported. *CL = Cable Loss-Amplifier Gain(In case of above1000Mhz) *CL = Cable Loss(In case of below1000Mhz) *The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120KHz for Quasi-peak detection at frequency below 1GHz. *The resolution bandwidth and video bandwidth of spectrum analyzer is 1MHz and 10Hz for average detection at frequency above 1GHz.							

9.11 - 1 Test Data for wireless LAN

Test Date : 7-May-09

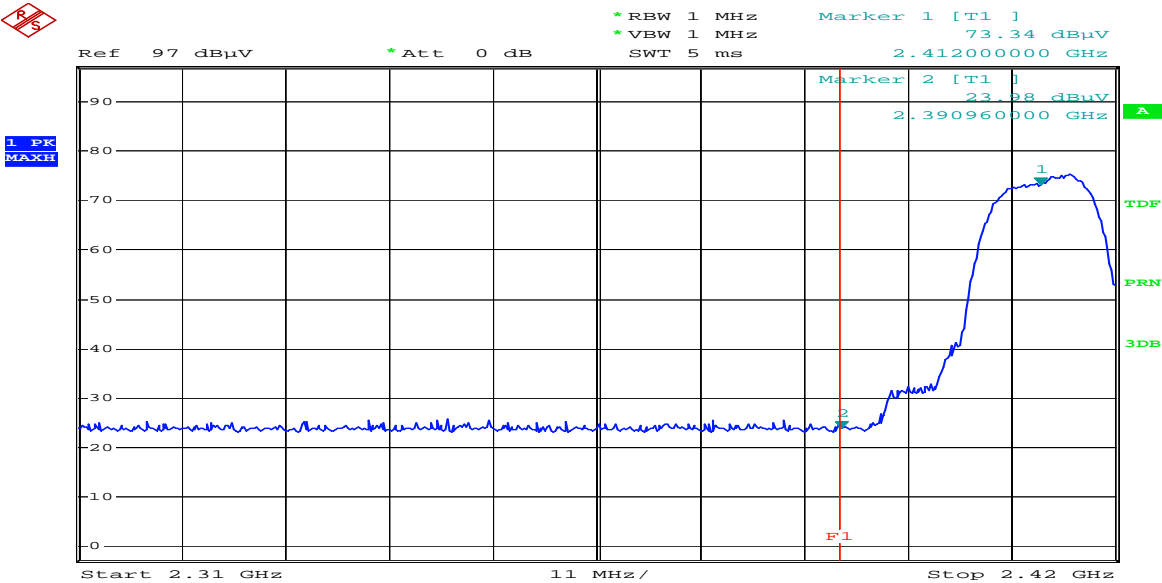
Measurement Distance : 3 m

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 (dB)
PEAK(RBW:1Mhz VBW:1MHz) - CH 149								
5745	60.15	H	1.1	32.30	7.2	*OB	99.63	-
5745	55.65	V	1.2	32.30	7.2	*OB	95.13	-
AV(RBW:1Mhz VBW:10Hz) - CH 149								
5745	47.20	H	1.1	32.30	7.2	*OB	86.68	-
5745	44.74	V	1.2	32.30	7.2	*OB	84.22	-
PEAK(RBW:1Mhz VBW:1MHz) - CH 157								
5785	59.28	H	1.2	32.37	7.5	*OB	99.13	-
5785	54.17	V	1.1	32.37	7.5	*OB	94.02	-
AV(RBW:1Mhz VBW:10Hz) - CH 157								
5785	42.12	H	1.2	32.37	7.5	*OB	81.97	-
5785	37.70	V	1.1	32.37	7.5	*OB	77.55	-
PEAK(RBW:1Mhz VBW:1MHz) - CH 165								
5825	57.98	H	1.2	32.45	7.7	*OB	98.13	-
5825	55.03	V	1.0	32.45	7.7	*OB	95.18	-
AV(RBW:1Mhz VBW:10Hz) - CH 165								
5825	42.05	H	1.2	32.45	7.7	*OB	82.20	-
5825	39.63	V	1.0	32.45	7.7	*OB	79.78	-
Remark	H : Horizontal, V : Vertical TEST MODE : 802.11a - CH157 *OB = Operating band *Checked in all 3 axis and the maximum measured data were reported. *CL = Cable Loss- Amplifier Gain(In case of above 1GHz) *Spurious emission above 1GHz was tested by quietek testing Lab.							

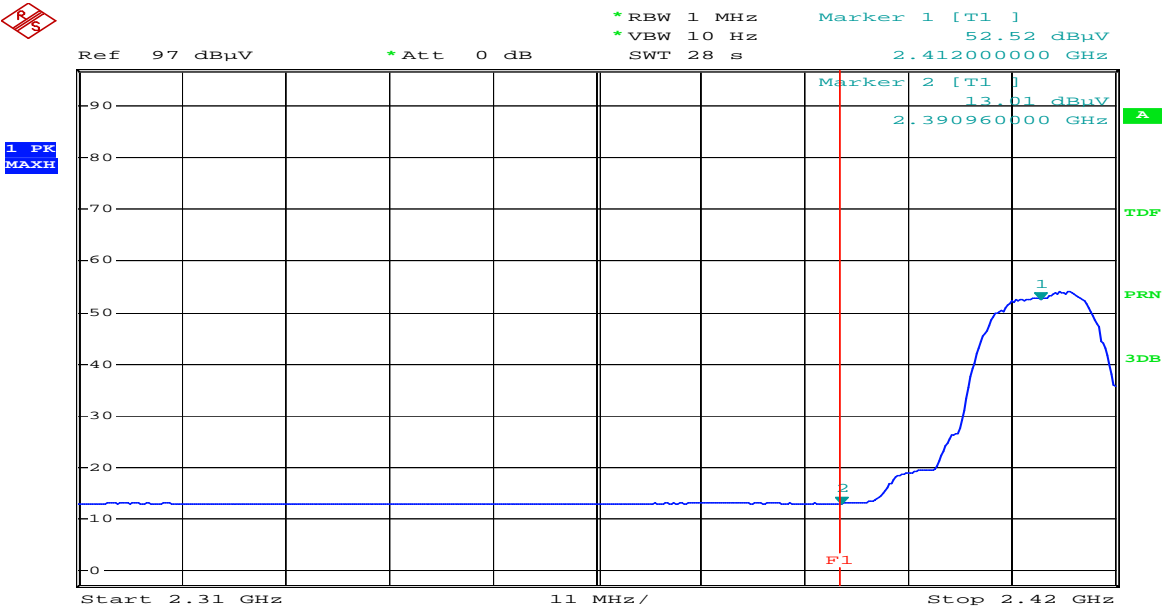
9.12 Restricted Band Edges for 802.11b

Band Edges(CH Low)

Detector mode:Peak Polarity:Horizontal



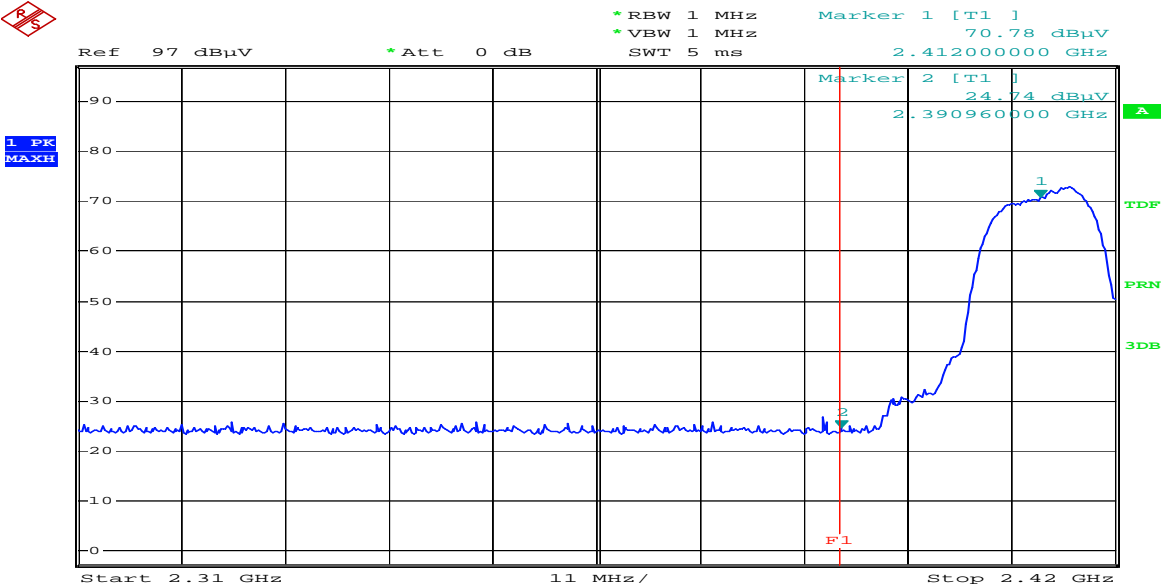
Detector mode:Average Polarity:Horizontal



Band Edges(CH Low)

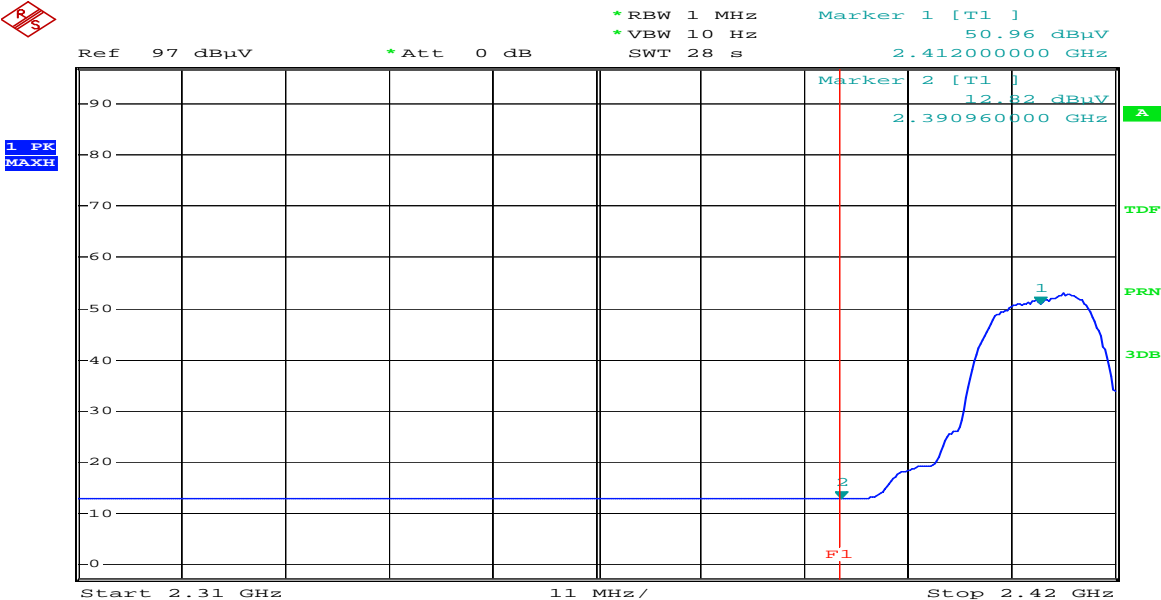
Detector mode:Peak

Polarity:Vertical



Detector mode:Average

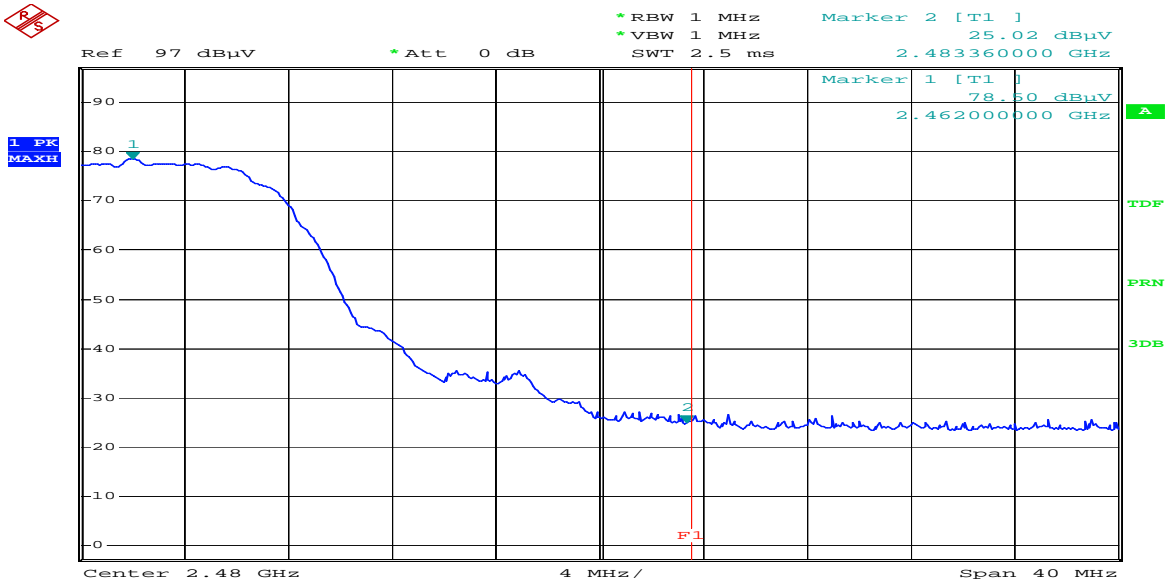
Polarity:Vertical



Band Edges(CH High)

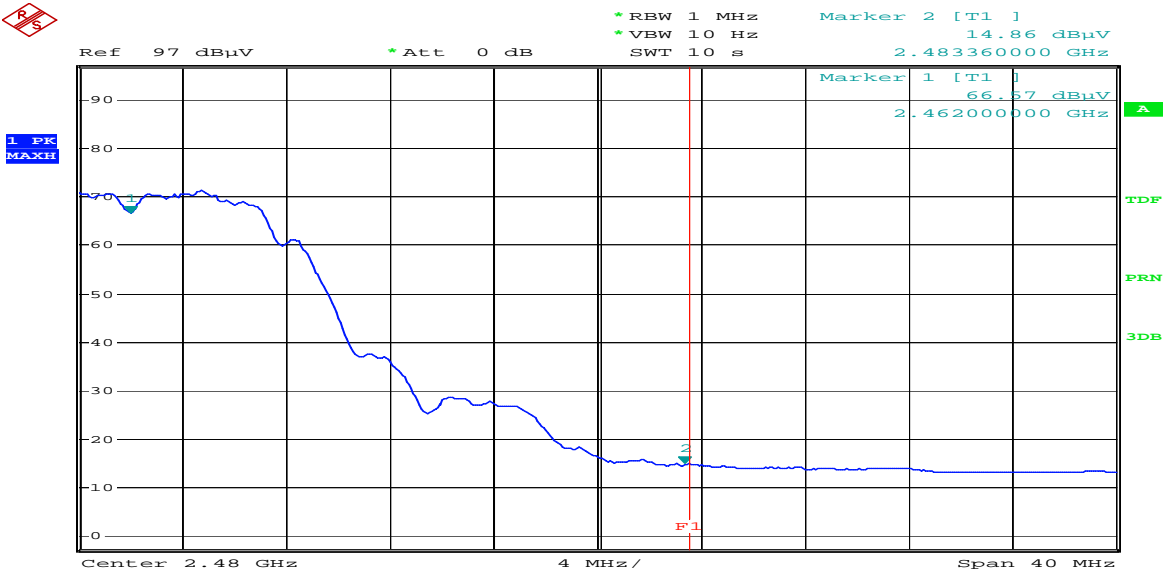
Detector mode:Peak

Polarity:Horizontal



Detector mode:Average

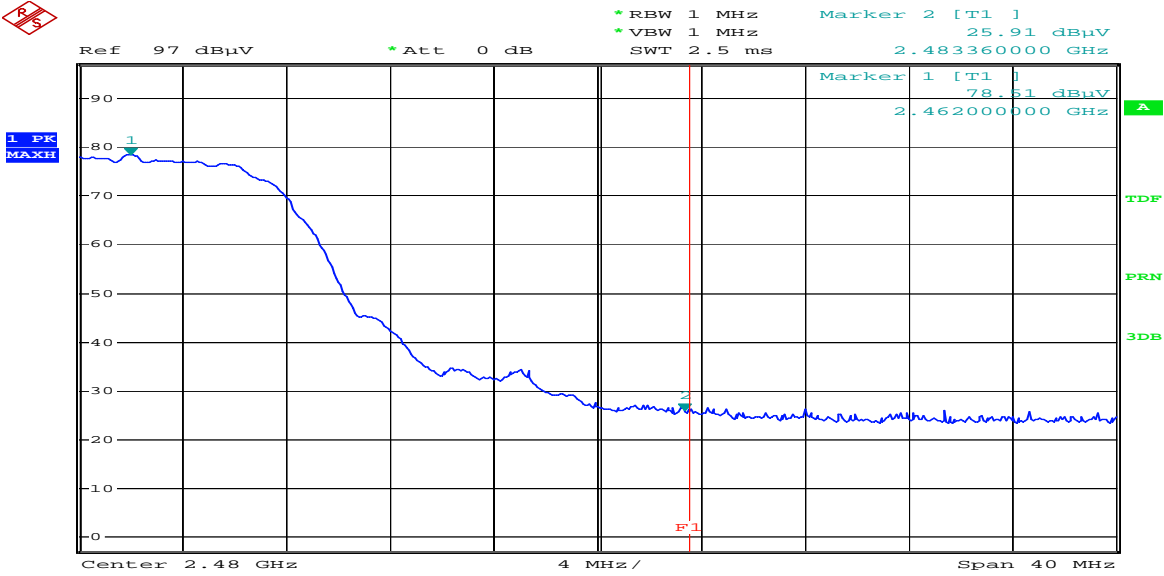
Polarity:Horizontal



Band Edges(CH High)

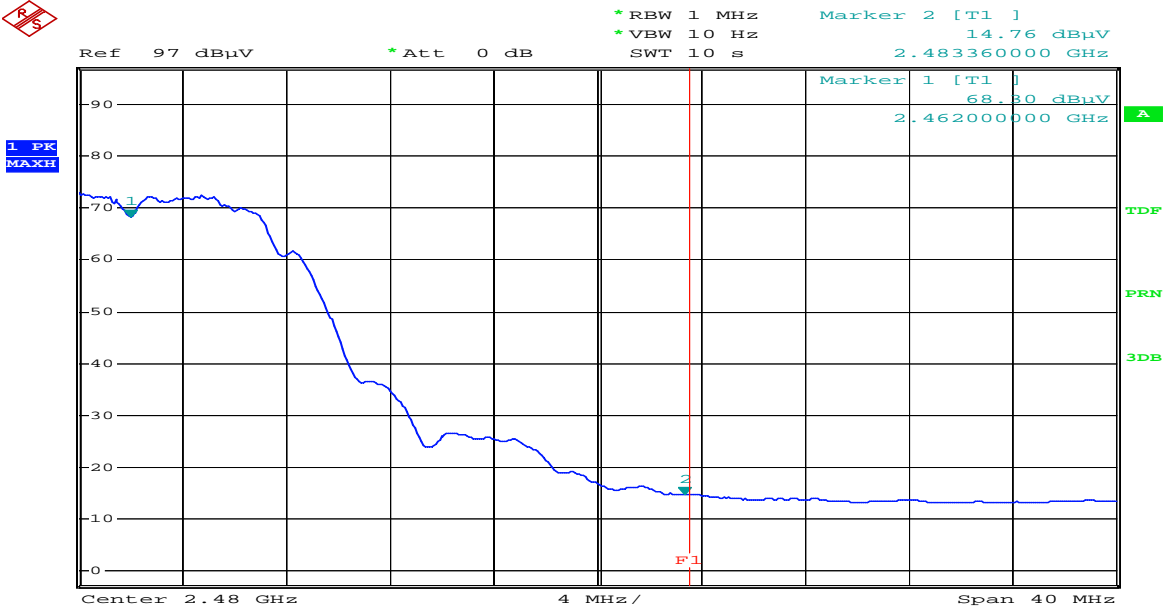
Detector mode:Peak

Polarity:Vertical



Detector mode:Average

Polarity:Vertical

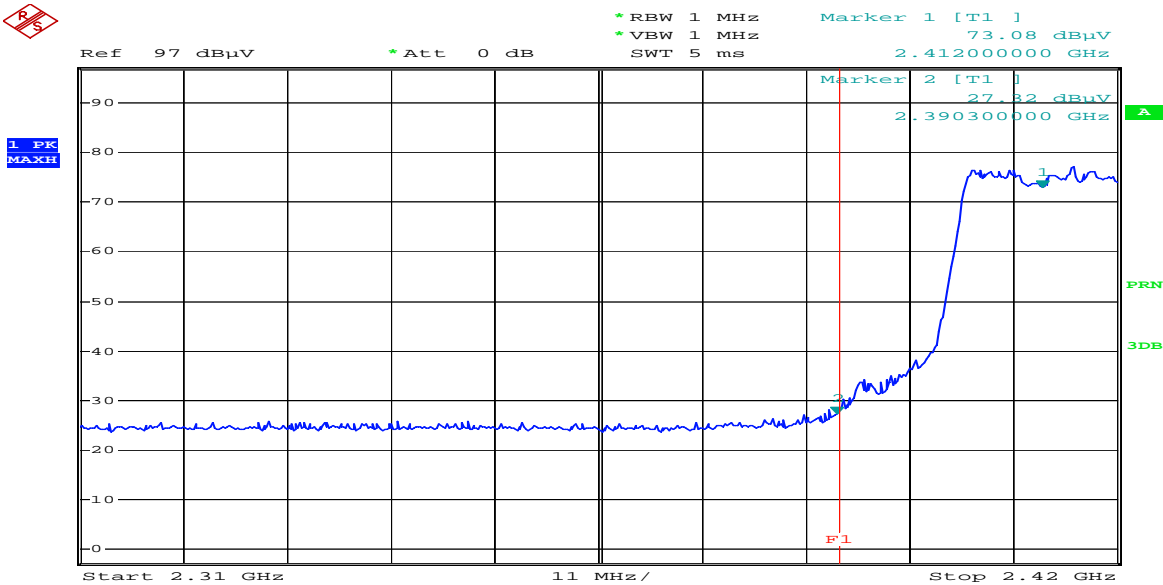


9.12-1 Restricted Band Edges for 802.11g

Band Edges(CH Low)

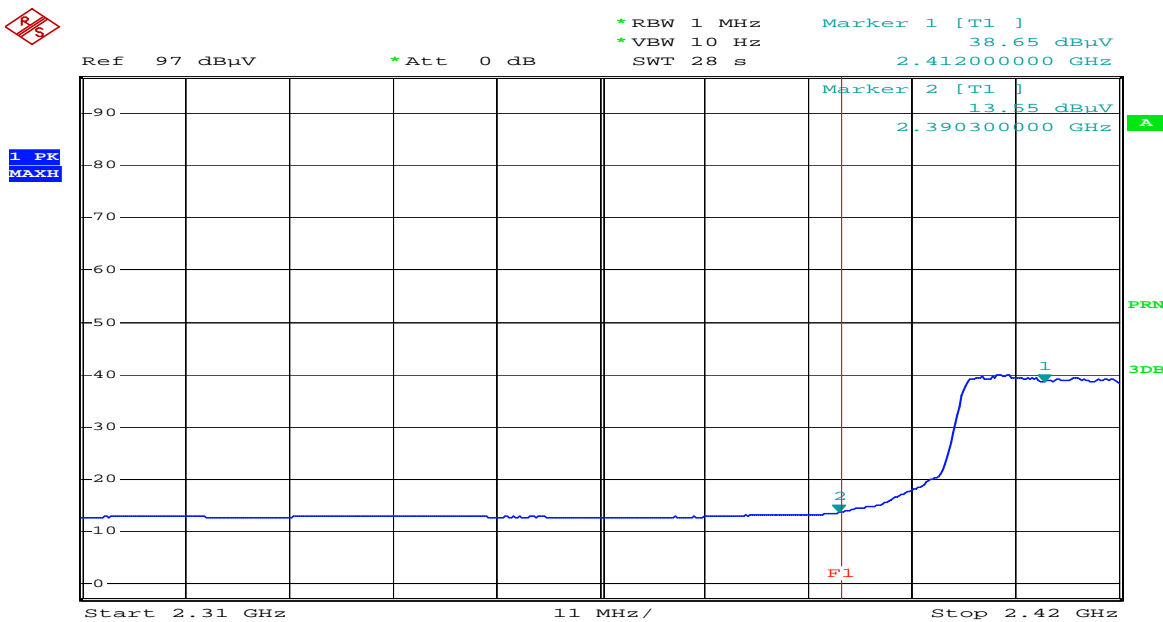
Detector mode:Peak

Polarity:Horizontal



Detector mode:Average

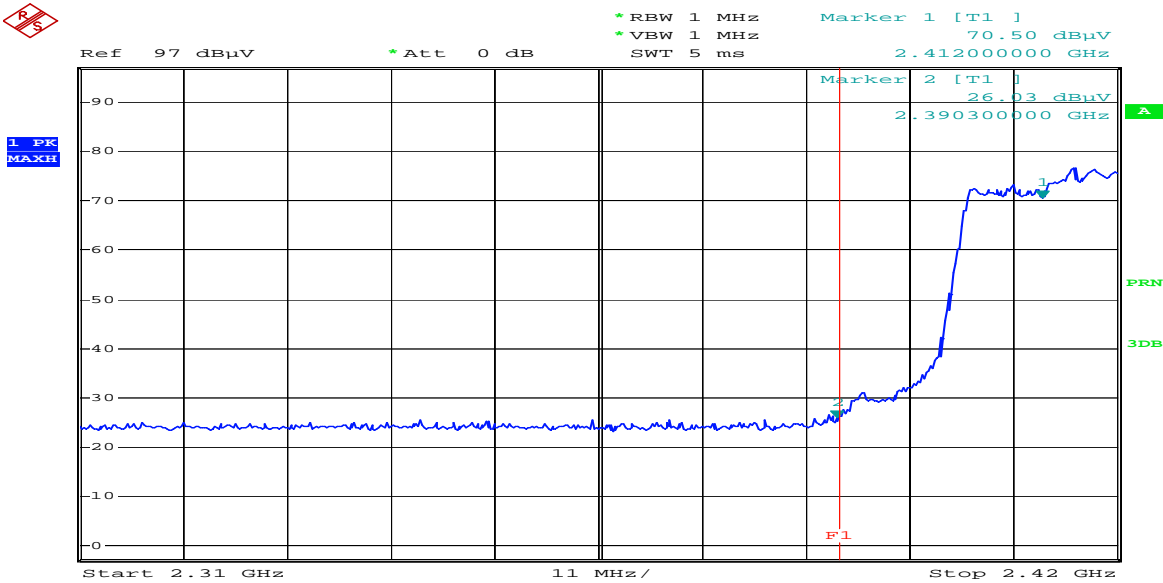
Polarity:Horizontal



Band Edges(CH Low)

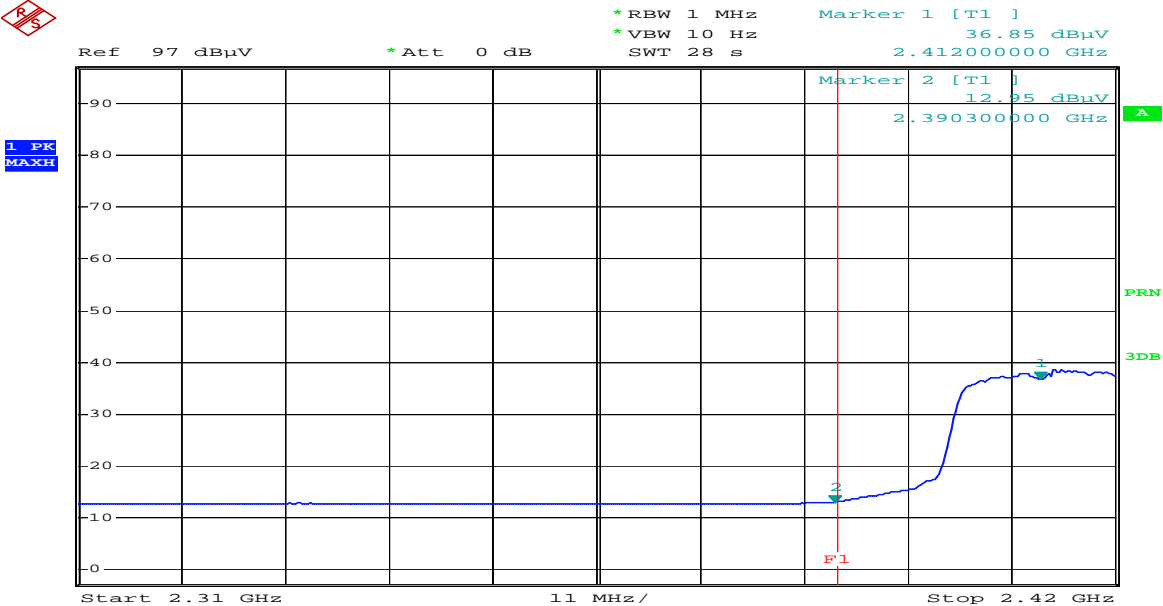
Detector mode:Peak

Polarity:Vertical



Detector mode:Average

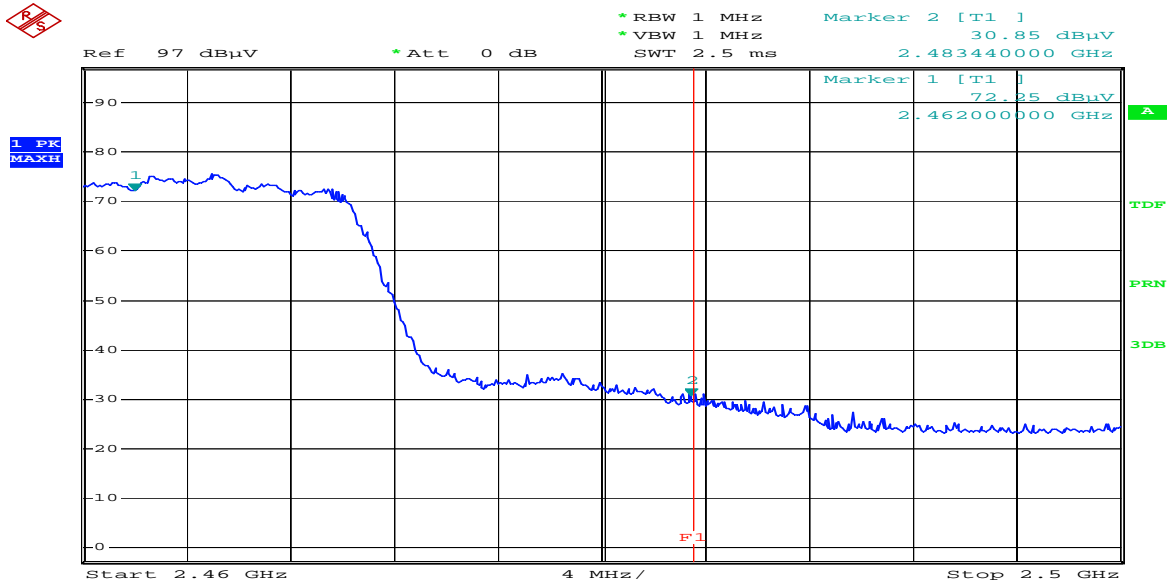
Polarity:Vertical



Band Edges(CH High)

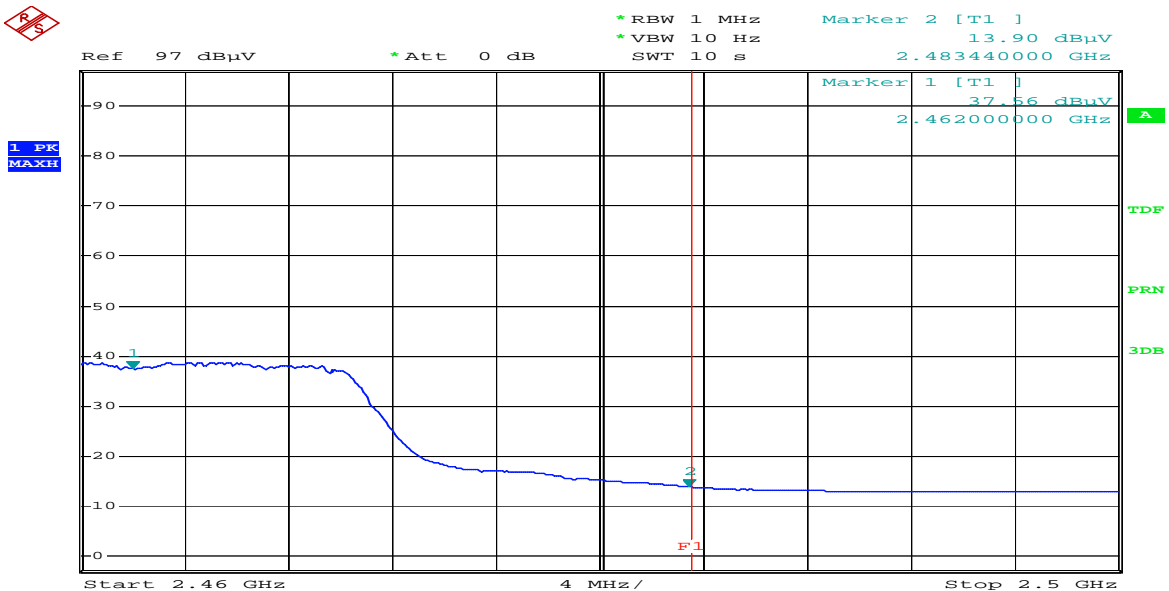
Detector mode:Peak

Polarity:Horizontal



Detector mode:Average

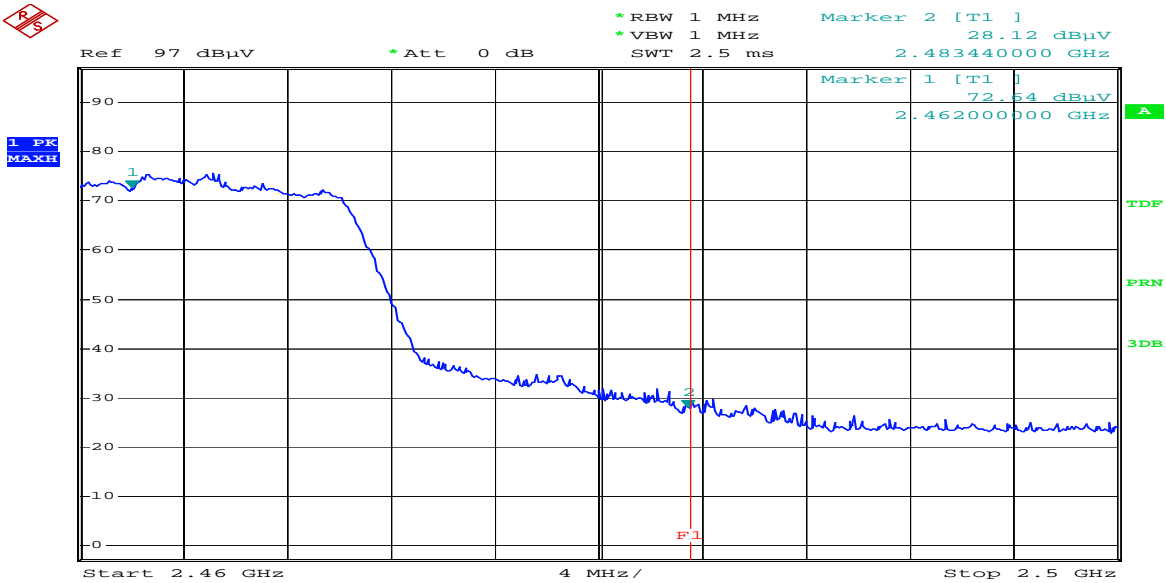
Polarity:Horizontal



Band Edges(CH High)

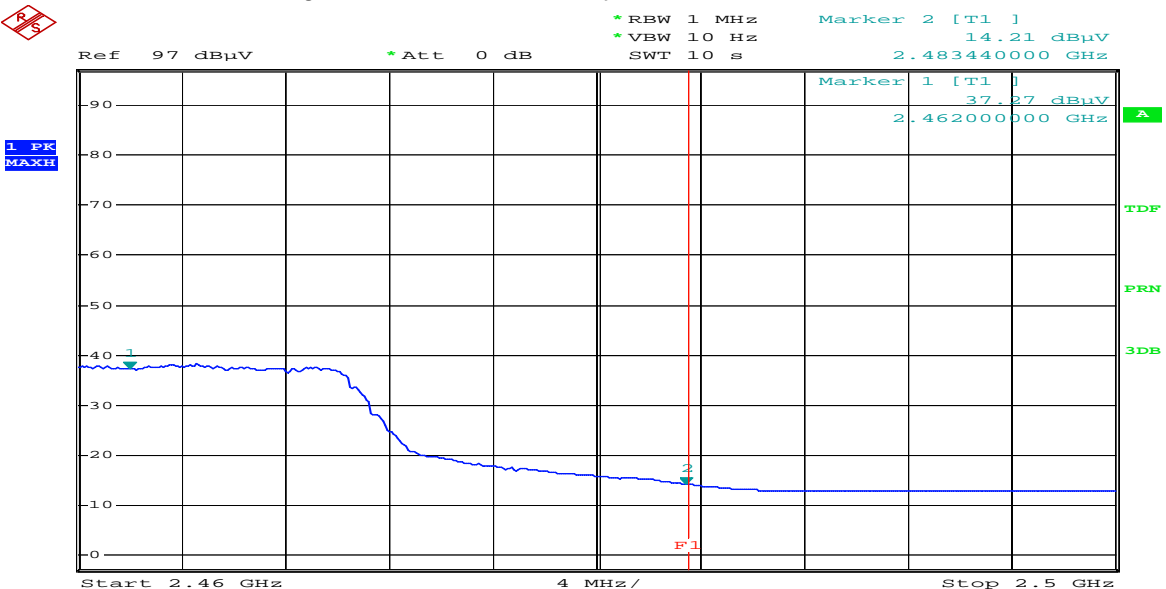
Detector mode:Peak

Polarity:Vertical



Detector mode:Average

Polarity:Vertical

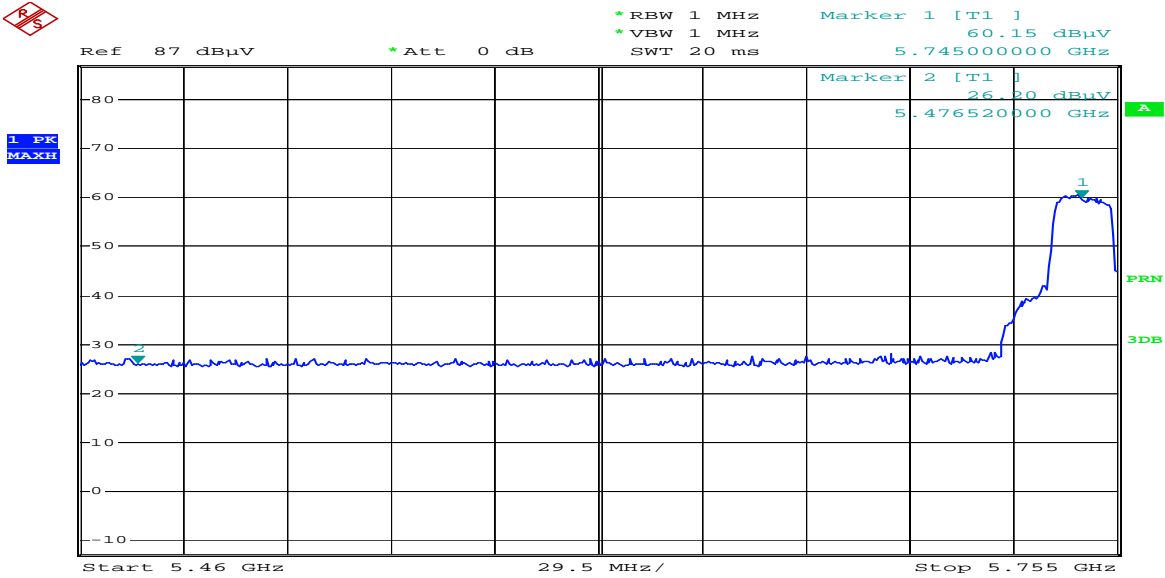


9.12-2 Restricted Band Edges for 802.11a

Band Edges(CH Low)

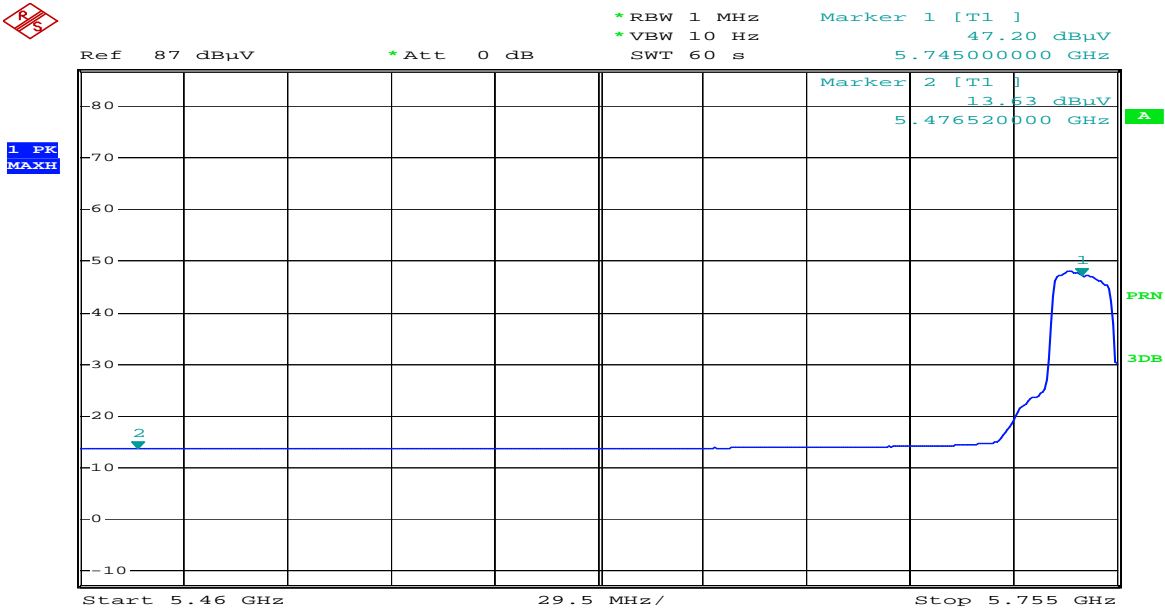
Detector mode:Peak

Polarity:Horizontal



Detector mode:Average

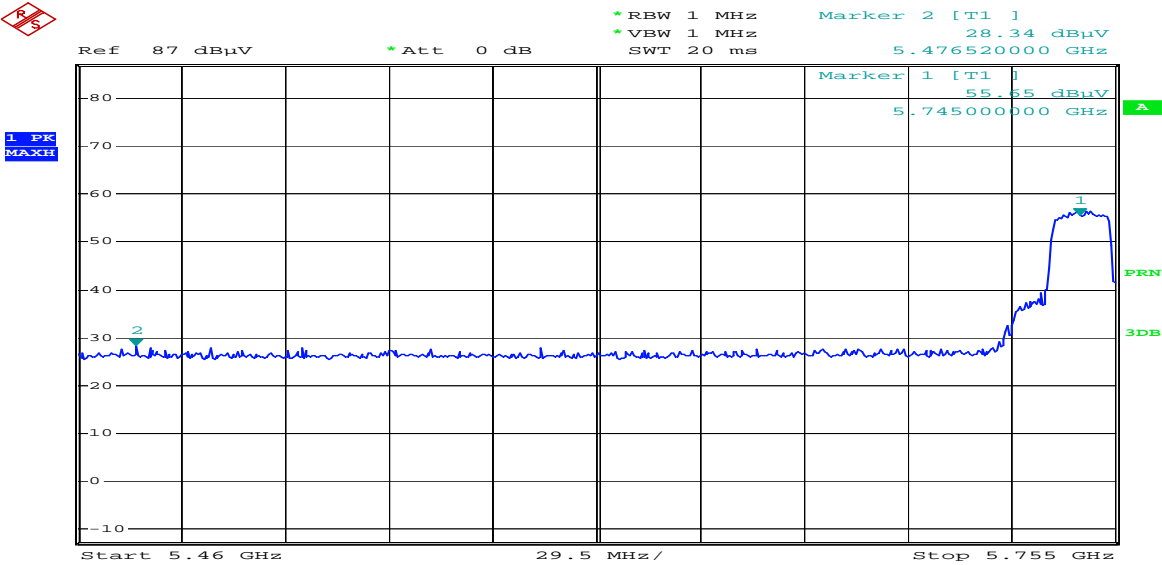
Polarity:Horizontal



Band Edges(CH Low)

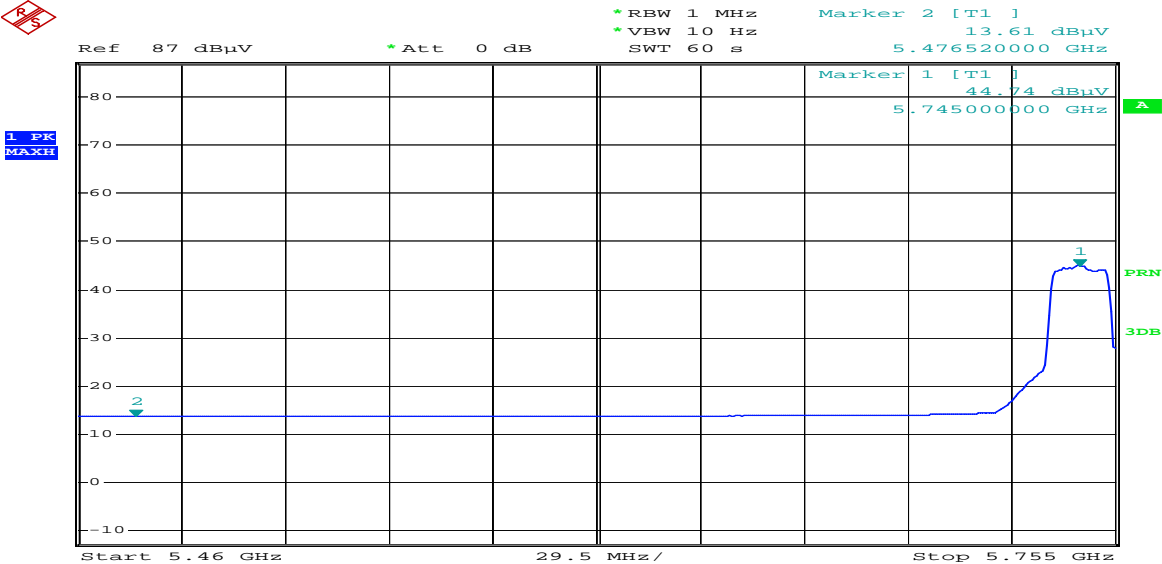
Detector mode:Peak

Polarity:Vertical



Detector mode:Average

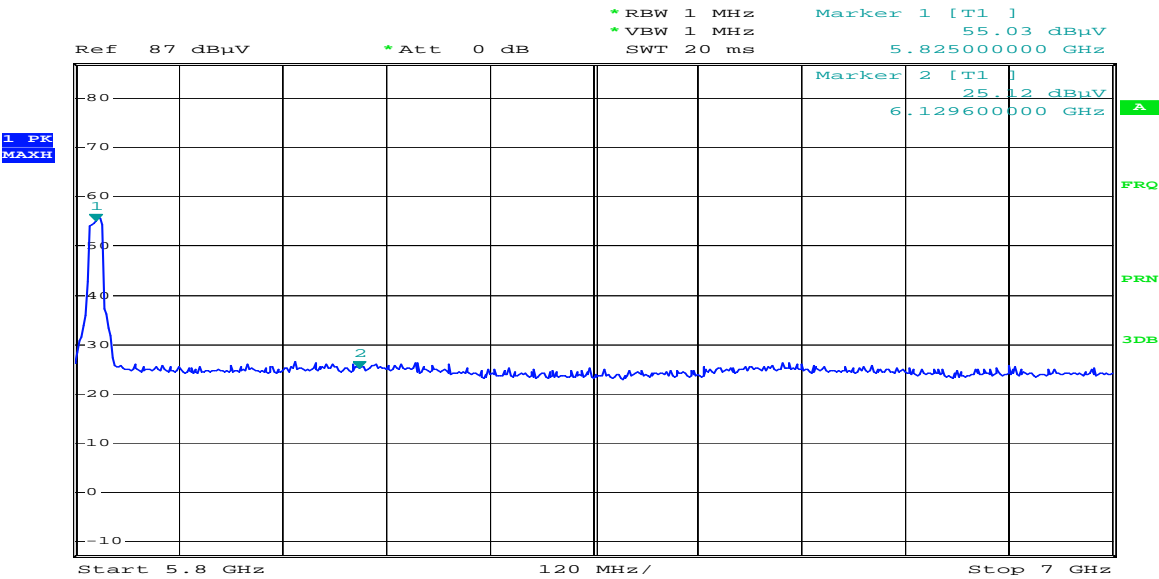
Polarity:Vertical



Band Edges(CH High)

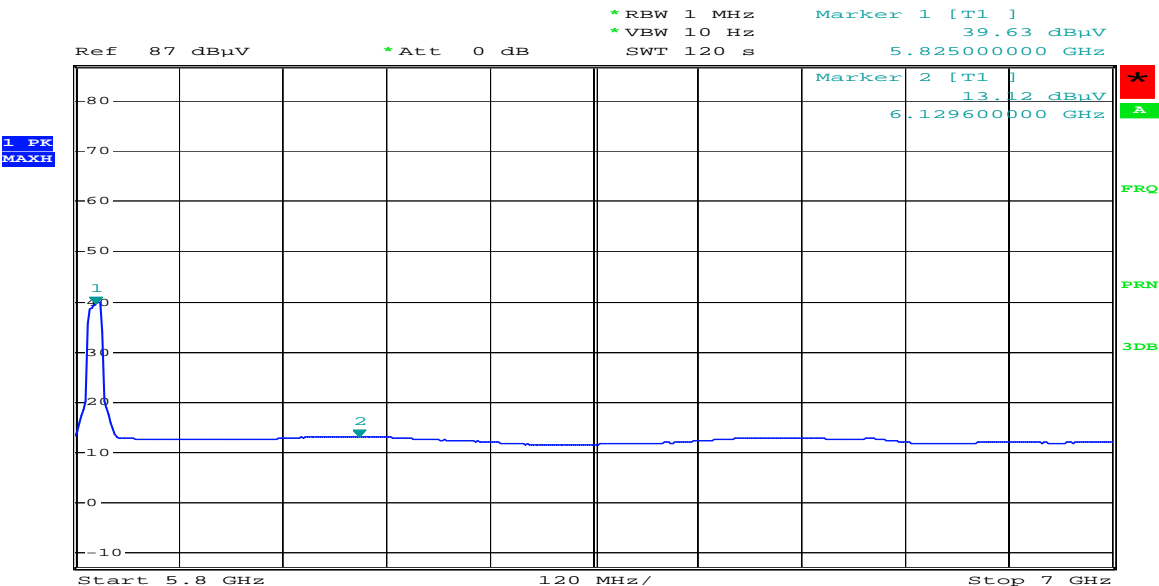
Detector mode:Peak

Polarity:Vertical



Detector mode:Average

Polarity:Vertical



10. 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 (2008) & ANSI C 63.4 (2003). The test setup was made according to FCC Part 15 (2008) & 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.

10.1 Measurement equipments

Equipment Name	Type	Manufacturer	Serial No.	Next Calibration date
LISN	ESH3-Z5	Schwarzbeck	838979/010	2010. 2. 21
LISN	NNLA8120A	Schwarzbeck	8120161	2010. 2. 21
TEST Receiver	ESPI7	Rohde & Schwarz	100185	2009. 8. 27
Pulse Limiter	ESH3Z2	Rohde & Schwarz	NONE	-

10.2 Environmental Condition

Test Place : Shield Room

Temperature (°C) : 20

Humidity (%) : 41 %

10.3 Test Data for wireless LAN

Test Date : 7 - May - 09

Frequency (MHz)	Correction Factor		Line (H/N)	Quasi-peak Value			Average Value		
	Lisn (dB)	Cable (dB)		Limit (dB μ V)	Reading (dB μ V)	Result (dB μ V)	Limit (dB μ V)	Reading (dB μ V)	Result (dB)
0.20	0.09	0.2	H	63.78	41.26	41.58	53.78	31.76	32.08
0.26	0.09	0.2	H	61.37	34.92	35.24	51.37	28.90	29.22
0.33	0.09	0.2	H	59.53	32.08	32.42	49.53	28.50	28.84
0.39	0.09	0.3	H	58.04	31.82	32.20	48.04	29.95	30.33
0.46	0.10	0.3	N	56.75	32.11	32.54	46.75	30.43	30.86
0.52	0.10	0.4	N	56.00	32.54	33.00	46.00	31.23	31.69
0.59	0.10	0.4	H	56.00	35.98	36.45	46.00	35.07	35.54
0.65	0.11	0.4	N	56.00	35.42	35.91	46.00	34.11	34.60
0.78	0.11	0.4	H	56.00	32.35	32.86	46.00	31.30	31.81
0.92	0.11	0.5	N	56.00	32.99	33.56	46.00	32.26	32.83
0.98	0.11	0.5	N	56.00	32.61	33.22	46.00	31.34	31.95
19.45	0.78	1.1	H	60.00	30.61	32.50	50.00	27.21	29.10
25.90	0.88	1.3	N	60.00	28.77	30.97	50.00	22.30	24.50
28.59	0.85	1.4	H	60.00	32.85	35.12	50.00	26.68	28.95
28.65	0.85	1.4	N	60.00	30.22	32.50	50.00	24.20	26.48
Remark	H : Hot Line, N : Neutral Line TEST MODE : 802.11b - CH 6(2437MHz)								

10.4 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 (2008) & ANSI C 63.4 (2003). The test setup was made according to FCC Part 15 (2008) & ANSI C 63.4 (2003) in a shielded. The EUT was placed on a non-conductive table at least 80 above the ground plane. 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.

10.5 Measurement equipments

Equipment Name	Type	Manufacturer	Serial No.	Next Calibration date
LISN	ESH3-Z5	Schwarzbeck	838979/010	2010. 2. 21
LISN	NNLA8120A	Schwarzbeck	8120161	2010. 2. 21
TEST Receiver	ESPI7	Rohde & Schwarz	100185	2009. 8. 27
Pulse Limiter	ESH3Z2	Rohde & Schwarz	NONE	-

10.6 Environmental Condition

Test Place : Shield Room

Temperature (°C) : 20

Humidity (%) : 41 %

10.7 Test Data for wireless LAN

Test Date : 7 - May - 09

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 (dB)
0.20	0.09	0.2	N	63.74	40.61	40.93	53.74	32.25	32.57
0.26	0.09	0.2	H	61.40	33.92	34.24	51.40	28.56	28.88
0.33	0.09	0.2	N	59.53	30.51	30.85	49.53	26.24	26.58
0.39	0.09	0.3	H	58.04	30.94	31.32	48.04	28.93	29.31
0.46	0.10	0.3	N	56.73	31.84	32.27	46.73	30.12	30.55
0.52	0.10	0.4	N	56.00	32.05	32.51	46.00	31.60	32.06
0.59	0.10	0.4	H	56.00	36.62	37.09	46.00	35.24	35.71
0.65	0.11	0.4	N	56.00	35.50	35.99	46.00	34.28	34.77
0.72	0.11	0.4	H	56.00	31.91	32.41	46.00	30.86	31.36
0.91	0.11	0.5	N	56.00	32.70	33.27	46.00	32.36	32.93
1.11	0.11	0.5	N	56.00	32.29	32.90	46.00	30.67	31.28
25.91	0.88	1.3	N	60.00	29.18	31.38	50.00	22.47	24.67
25.98	0.88	1.3	H	60.00	29.62	31.83	50.00	23.57	25.78
27.93	0.85	1.4	H	60.00	31.95	34.21	50.00	25.30	27.56
28.59	0.85	1.4	N	60.00	30.23	32.50	50.00	24.22	26.49
Remark	H : Hot Line, N : Neutral Line TEST MODE : 802.11g - CH 6 (2437MHz)								

10.8 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 (2008) & ANSI C 63.4 (2003). The test setup was made according to FCC Part 15 (2008) & 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.

10.9 Measurement equipments

Equipment Name	Type	Manufacturer	Serial No.	Next Calibration date
LISN	ESH3-Z5	Schwarzbeck	838979/010	2010. 2. 21
LISN	NNLA8120A	Schwarzbeck	8120161	2010. 2. 21
TEST Receiver	ESPI7	Rohde & Schwarz	100185	2009. 8. 27
Pulse Limiter	ESH3Z2	Rohde & Schwarz	NONE	-

10.10 Environmental Condition

Test Place : Shield Room

Temperature (°C) : 20

Humidity (%) : 42 %

10.11 Test Data for wireless LAN

Test Date : 7 - May - 09

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 (dB)
0.20	0.09	0.2	N	63.82	40.14	40.46	53.82	31.71	32.03
0.26	0.09	0.2	H	61.43	33.74	34.06	51.43	29.26	29.58
0.33	0.09	0.2	H	59.55	31.81	32.15	49.55	28.91	29.25
0.39	0.09	0.3	H	58.04	31.72	32.10	48.04	29.94	30.32
0.46	0.10	0.3	N	56.77	32.57	33.00	46.77	31.22	31.65
0.59	0.10	0.4	H	56.00	36.66	37.13	46.00	35.64	36.11
0.65	0.11	0.4	N	56.00	35.73	36.22	46.00	34.41	34.90
0.78	0.11	0.4	N	56.00	32.11	32.62	46.00	30.99	31.50
0.85	0.11	0.4	N	56.00	32.97	33.51	46.00	32.00	32.54
0.98	0.11	0.5	H	56.00	32.06	32.67	46.00	30.72	31.33
1.17	0.12	0.5	N	56.00	32.40	33.01	46.00	30.91	31.52
19.46	0.78	1.1	H	60.00	29.79	31.68	50.00	27.28	29.17
26.04	0.88	1.3	H	60.00	29.82	32.03	50.00	26.17	28.38
28.79	0.84	1.4	N	60.00	30.38	32.66	50.00	24.63	26.91
28.90	0.84	1.4	H	60.00	31.50	33.78	50.00	25.91	28.19
Remark	H : Hot Line, N : Neutral Line TEST MODE : 802.11a								

11. Photographs of test setup

11.1. Setup for Radiated Test : 30 ~ 1000 MHz

[Front]



[Rear]



11.2. Setup for Conducted Test : 0.15 ~ 30 MHz

[Front]



[Rear]



11.3. Photographs of EUT

[Front]



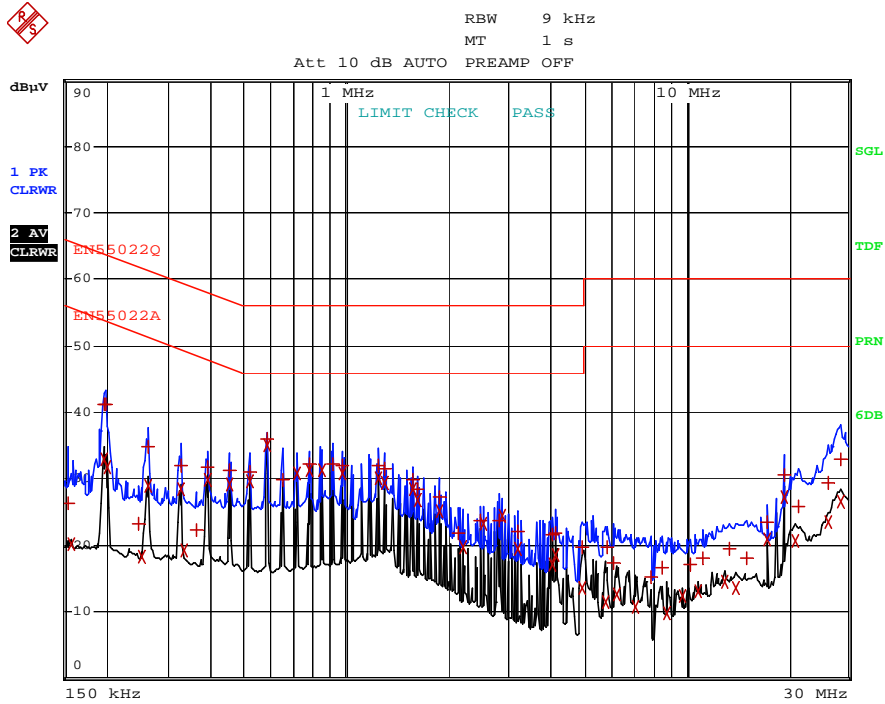
[Rear]



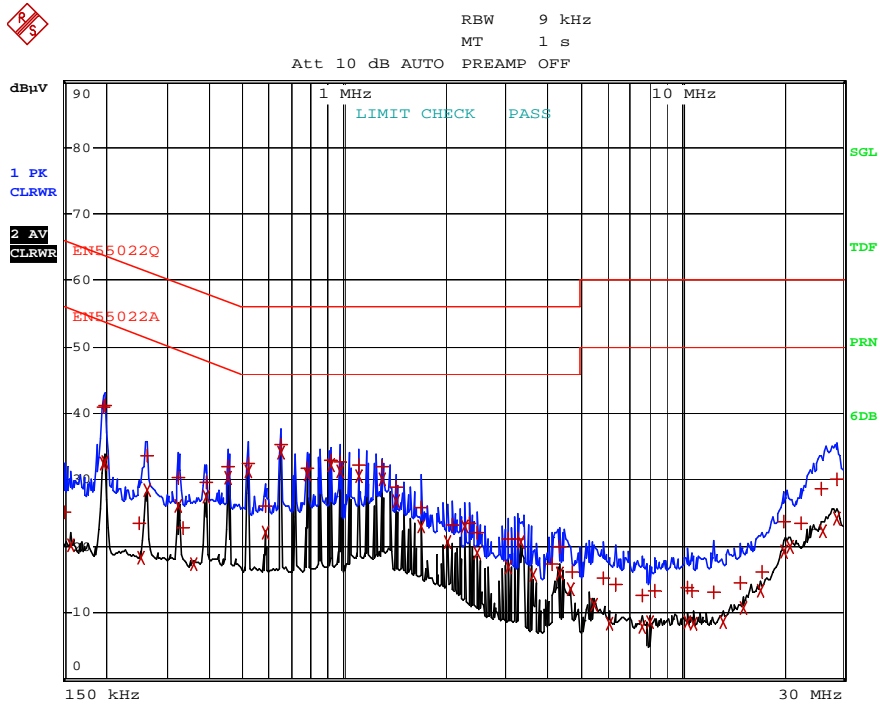
Appendix 1. Spectral diagram for Wireless LAN

802.11b - CH 6

*HOT



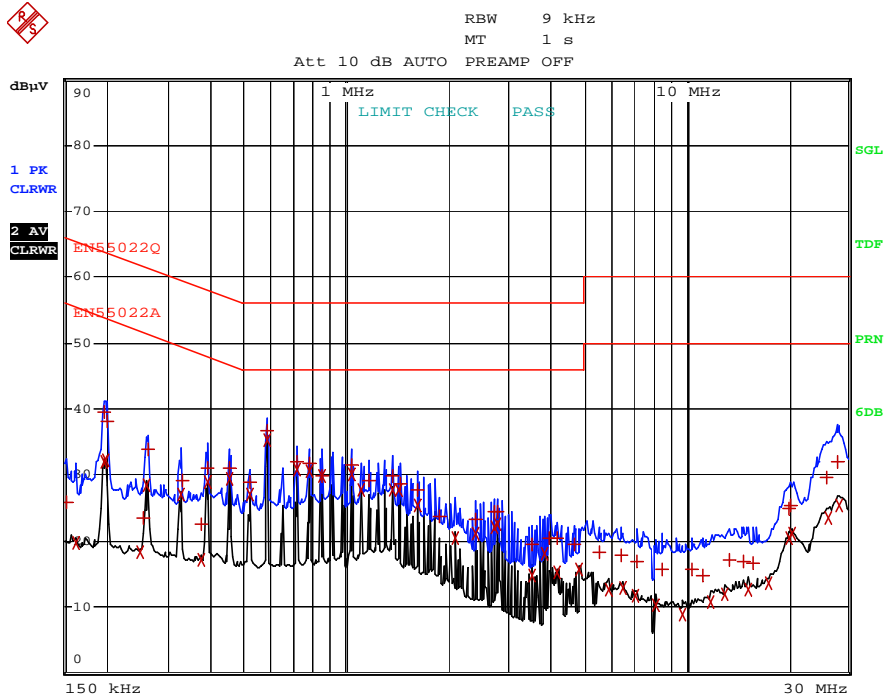
*NEUTRAL



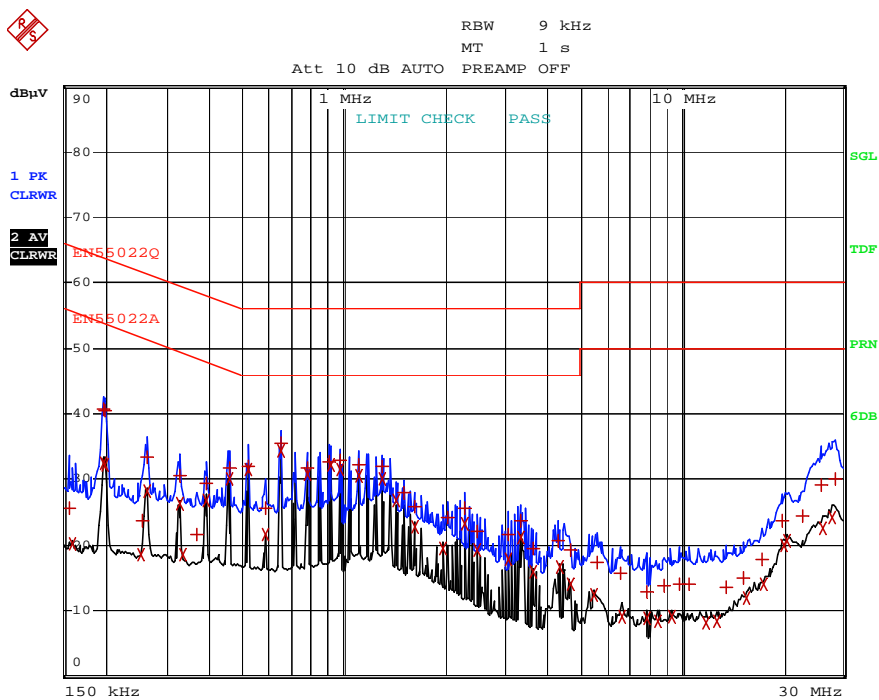
Appendix 1. Spectral diagram for Wireless LAN

802.11g - CH 6

*HOT



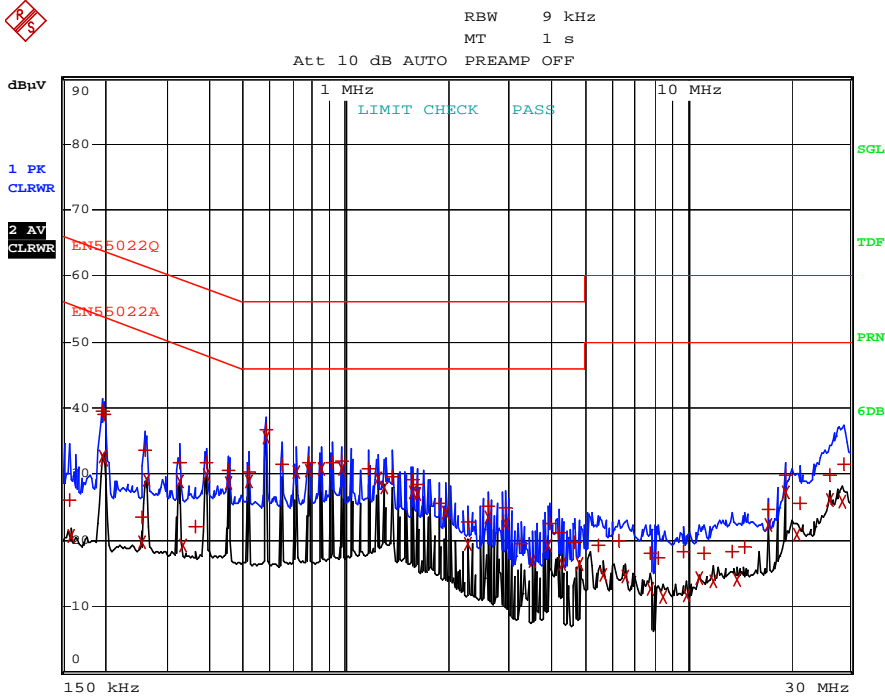
*NEUTRAL



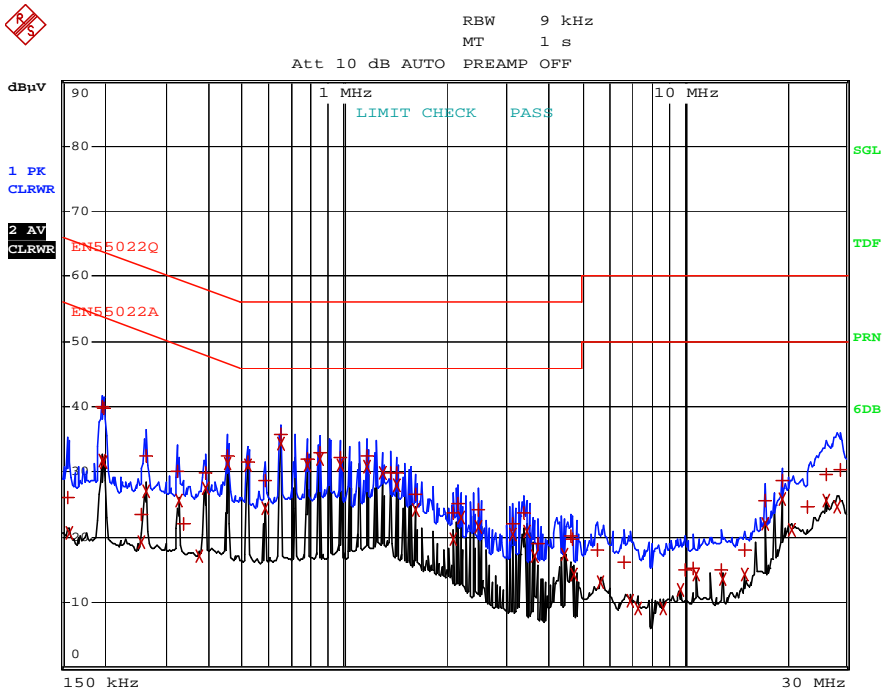
Appendix 1. Spectral diagram for Wireless LAN

802.11a - CH 157

*HOT



*NEUTRAL



Appendix 2. Antenna Requirement

1. Antenna Requirement

1.1 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

1.2 Antenna Connected Construction

The antenna types used in this product are Intergrated Sandwich antenna . The maximum Gain of 2GHz antenna is -0.53dBi and The maximum Gain of 5GHz antenna is -0.13dBi