

# **FCC Test Report**

## Report No: FCS202104052W02

## Issued for

Applicant:	AWOW Technology(shenzhen)Co.,Ltd.			
Address:	A602-603, Jinfulai Building, Dabao Road, Xinan Street, Baoan District, Shenzhen, Guangdong			
Product Name:	AiBook 1001			
Brand Name:	AWOW			
Model Name:	AiBook 1001			
Series Model:	N/A			
FCC ID:	2AZK9-1001			
Add: Room 105 Floor B Hi-Te	7: Flux Compliance Service Laboratory Bao hao Technology Building 1 NO.15 Gong ye West Road ch Industrial, Song shan lake Dongguan 1:769-27280901 http://www.FCS-lab.com			



#### TEST RESULT CERTIFICATION

Applicant's Name:	AWOW Technology (shenzhen) Co.,Ltd.	
Address:	A602-603, Jinfulai Building, Dabao Road, Xinan Street, District, Shenzhen, Guangdong	Baoan
Manufacture's Name:	AWOW Technology (shenzhen) Co.,Ltd.	
Address:	A602-603, Jinfulai Building, Dabao Road, Xinan Street, District, Shenzhen, Guangdong	Baoan
Product Description		
Product Name:	AiBook 1001	
Brand Name	AWOW	
Model Name	AiBook 1001	
Series Model	N/A	

Test Standards..... FCC Rules and Regulations Part 15 Subpart C, Section 249

#### Test Procedure.....: ANSI C63.10-2013

This device described above has been tested by Flux Compliance Service Laboratory, the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.

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Date of Test.....

Date (s) of performance of tests. : 19 Apr, 2021 ~ 28 Apr, 2021

Date of Issue..... 28 Apr, 2021

Test Result..... Pass

Tested by

Scott shen :

(Scott Shen)

Reviewed by

Dukelin

(Duke Qian)

Approved by

(Kait Chen)

Flux Compliance Service Laboratory

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#### **Revision History**

Rev.	Issue Date	Effect Page	Contents
00	28 Apr, 2021	All	Initial Issue

Flux Compliance Service Laboratory Room 105 Floor Bao hao Technology Building 1 NO.15 Gong ye West Road Hi-Tech Industrial, Song shan lake Dongguan Tel: 769-27280901 Fax:769-27280901 http://www.FCS-lab.com

#### 1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards: KDB 558074 D01 15.247 Meas Guidance v05r02

FCC Part 15.247,Subpart C				
Standard Section	Test Item	Judgment	Remark	
FCC 15.247 (a) (2)	6dB Bandwidth	PASS		
FCC 15.247 (b) (3)	Conducted Output Power	PASS		
FCC 15.247 (e)	Power Spectral Density	PASS		
FCC 15.247 (d)	Band-edge and Spurious Emissions (Conducted)	PASS		
FCC 15.247 (d)	Dedicted Sourieus Emissions			
FCC 15.209	Radiated Spurious Emissions	PASS		
FCC 15.205				
FCC 15.247 (d)	Dedicted Dand Edge Compliance			
FCC 15.209	Radiated Band Edge Compliance	PASS		
FCC 15.205				
FCC 15.207	Power Line Conducted Emission	PASS		
FCC 15.203	Antenna requirement	PASS		
15.205	Restricted Band Edge Emission PASS			

NOTE:

(1)" N/A" denotes test is not applicable in this Test Report

(2) All tests are according to ANSI C63.10-2013



#### **1.1 TEST FACTORY**

Company Name:	Flux Compliance Service Laboratory	
Address:	Room 105 Floor Bao hao Technology Building 1 NO.15 Gong ye West Road Hi-Tech Industrial, Song shan lake Dongguan	
Telephone:	+86-769-27280901	
Fax:	+86-769-27280901	
FCC Test Firm Regist Designation number: A2LA accreditation nu		

#### **1.2 MEASUREMENT UNCERTAINTY**

The reported uncertainty of measurement  $\mathbf{y} \pm \mathbf{U}$ , where expended uncertainty  $\mathbf{U}$  is based on a standard uncertainty multiplied by a coverage factor of **k=2**, providing a level of confidence of approximately **95** %.

No.	Item	Uncertainty
1	RF output power, conducted	±0.71dB
2	Unwanted Emissions, conducted	±2.988 dB
3	Conducted Emission (9KHz-150KHz)	±4.13 dB
4	Conducted Emission (150KHz-30MHz)	±4.74 dB
5	All emissions,radiated(<1G) 30MHz-1000MHz	±5.2 dB
6	All emissions, radiated 1GHz -18GHz	±4.66 dB
7	All emissions,radiated 18GHz -40GHz	±4.31 dB



### 2. GENERAL INFORMATION

## 2.1 GENERAL DESCRIPTION OF THE EUT

Product Name	AiBook 1001
Trade Name	AWOW
Model Name	AiBook 1001
Series Model	N/A
Model Difference	N/A
Channel List	Please refer to the Note 2.
	IEEE 802.11b: 2412MHz-2462MHz
Operation frequency	IEEE 802.11g: 2412MHz-2462MHz
	IEEE 802.11n HT20: 2412MHz-2462MHz
	IEEE 802.11n HT40: 2422MHz-2452MHz
	IEEE 802.11b: DSSS (CCK, QPSK, BPSK)
Modulation:	IEEE 802.11g: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n HT20, HT40: OFDM (64QAM, 16QAM, QPSK, BPSK)
	IEEE 802.11b: 1, 2, 5.5, 11 Mbps
Transmitter rate:	IEEE 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps
	IEEE 802.11n HT20: up to 150 Mbps, HT40: up to 300Mbps
Power supply	DC 5V,2A
Battery	DC 3.8V
Hardware version number	V1.0
Software version number	V1.0
Connecting I/O Port(s)	Please refer to the User's Manual

Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.



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2.

Channel List					
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
01	2412	05	2432	09	2452
02	2417	06	2437	10	2457
03	2422	07	2442	11	2462
04	2427	08	2447		

#### 3. Table for Filed Antenna

Table			-			
Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	NOTE
1	NA	GHIU	PIFA Antenna	N/A	1.0	Antenna

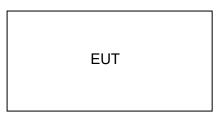


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#### 2.2 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

During testing channel & power controlling software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product.

Block diagram of EUT configuration for test



Test software: the FCC tool The test softeware was used to control EUT work in continuous TX mode, and select test channel, Wireless mode as below table

Mode	Setting Tx Power	data rate (Mbps) (see Note)	Channel	Frequency (MHz)
	8	1	LCH: CH1	2412
IEEE 802.11b	8	1	MCH: CH6	2437
	8	1	HCH: CH11	2462
IEEE 802.11g	20	6	LCH: CH1	2412
	20	6	MCH: CH6	2437
	20	6	HCH: CH11	2462
	20	MCS 8	LCH: CH1	2412
IEEE 802.11n HT20	20	MCS 8	MCH: CH6	2437
	20	MCS 8	HCH: CH11	2462
	20	MCS 8	LCH: CH3	2422
IEEE 802.11n HT40	20	MCS 8	MCH: CH6	2437
	20	MCS 8	HCH: CH9	2452

Note:

(1) According exploratory test, EUT will have maximum output power in those data rate, so those data rate were used for all test,

(2) During the test, the dutycycle>98%, the test voltage was tuned from 85% to 115% of the

Nominal rate supply votage, and found that the worst case was the nominal rated supply condition, So the report just shows that condition's data



#### 2.3 DESCRIPTION OF NECESSARY ACCESSORIES AND SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

#### Necessary accessories

Item	Equipment	Mfr/Brand	Model/Type No.	Serial No.	Note

#### Support units

Item	Equipment	Mfr/Brand	Model/Type No.	Serial No.	Note

Note:

- (1) The support equipment was authorized by Declaration of Confirmation.
- (2) For detachable type I/O cable should be specified the length in cm in  $^{\mathbb{F}}$  Length  $_{\mathbb{F}}$  column.
- (3) "YES" is means "shielded" "with core"; "NO" is means "unshielded" "without core".



#### 2.4 EQUIPMENTS LIST

#### Radiation Test equipment

Kind of Equipment	Manufacturer	Type No.	Company No.	Last calibration	Calibrated until
EMI Test Receiver	R&S	ESRP 3	FCS-E001	2020. 06.26	2021. 06.25
Signal Analyzer	R&S	FSV40-N	FCS-E012	2020.06.05	2021.06.04
Active loop Antenna	ZHINAN	ZN30900C	FCS-E013	2020.08.09	2021.08.10
Bilog Antenna	SCHWARZBECK	VULB 9168	FCS-E002	2020.08.26	2021.08.25
Horn Antenna	SCHWARZBECK	BBHA 9120D	FCS-E003	2020.08.26	2021.08.25
SHF-EHF Horn Antenna (18G-40GHz)	A-INFO	LB-180400-KF	FCS-E018	2020.06.26	2021.06.25
Pre-Amplifier(0.1M-3G Hz)	EMCI	EM330N	FCS-E004	2020.06.26	2021.06.25
Pre-Amplifier (1G-18GHz)	N/A	TSAMP-0518SE	FCS-E014	2020.06.03	2021.06.02
Pre-Amplifier (18G-40GHz)	TERA-MW	TRLA-0400	FCS-E019	2020.08.08	2021.08.07
Temperature & Humidity	HTC-1	victor	FCS-E005	2020.08.26	2021.08.25

#### **Conduction Test equipment**

Kind of Equipment	Manufacturer	Type No.	Company No.	Last calibration	Calibrated until
EMI Test Receiver	R&S	ESPI	FCS-E020	2020.06.03	2021.06.02
LISN	R&S	ENV216	FCS-E007	2020.08.08	2021.08.07
LISN	ETS	3810/2NM	FCS-E009	2020.06.03	2021.06.02
Temperature & Humidity	HTC-1	victor	FCS-E008	2020.08.08	2021.08.07

#### **RF** Connected Test

Kind of Equipment	Manufacturer	Type No.	Company No.	Last calibration	Calibrated until
MXA SIGNAL Analyzer	Keysight	N9020A	FCS-E015	2020.06.03	2021.06.02
Spectrum Analyzer	Agilent	E4447A	MY50180039	2020.08.08	2021.08.07
Spectrum Analyzer	R&S	FSV-40	101499	2020.08.26	2021.08.25
Power Sensor	Agilent	UX2021XA	FCS-E021	2020.06.03	2021.06.02



#### 3.6DB BANDWIDTH

#### 3.1 Limit

For direct sequence systems, the minimum 6dB bandwidth shall be at least 500 kHz

#### 3.2 Test Procedure

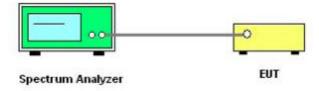
(1) Connect EUT's antenna output to spectrum analyzer by RF cable.

(2) Set the spectrum analyzer as follows

RBW:	100kHz
VBW:	300kHz
Detector Mode:	Peak
Sweep time:	auto
Trace mode	Max hold

(3) Allow the trace to stabilize, measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission

#### 3.3 Test setup





#### 3.4 Test results

TestMode	Channel (MHz)	6dB Bandwidth (MHz)	Limit [MHz]	Verdict
802.11b	2412MHz	10.105	0.5	Pass
802.11b	2437MHz	10.109	0.5	Pass
802.11b	2462MHz	10.107	0.5	Pass
802.11g	2412MHz	15.137	0.5	Pass
802.11g	2437MHz	16.021	0.5	Pass
802.11g	2462MHz	15.182	0.5	Pass
802.11n 20	2412MHz	15.366	0.5	Pass
802.11n 20	2437MHz	13.855	0.5	Pass
802.11n 20	2462MHz	15.114	0.5	Pass
802.11n 40	2422MHz	35.148	0.5	Pass
802.11n 40	2437MHz	35.146	0.5	Pass
802.11n 40	2452MHz	35.192	0.5	Pass

### 3.5 Original Test Data

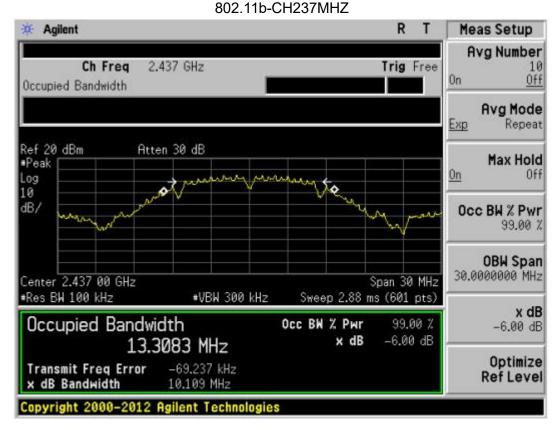


802.11b-CH2412MHZ

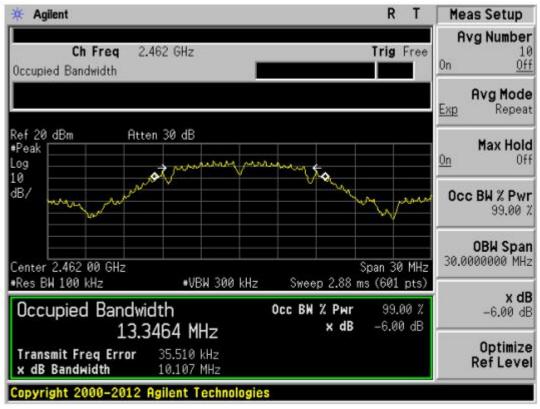


#### 000 441 01100714

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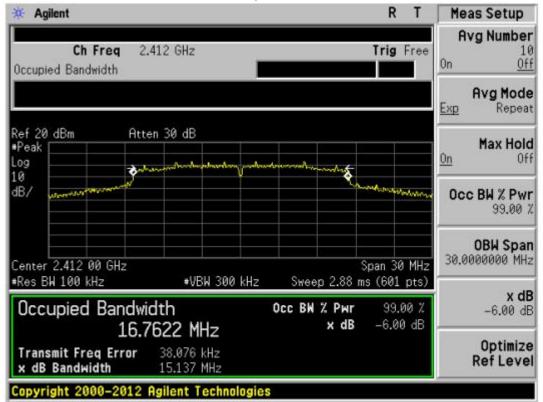
#### 802.11b-CH2462MHZ



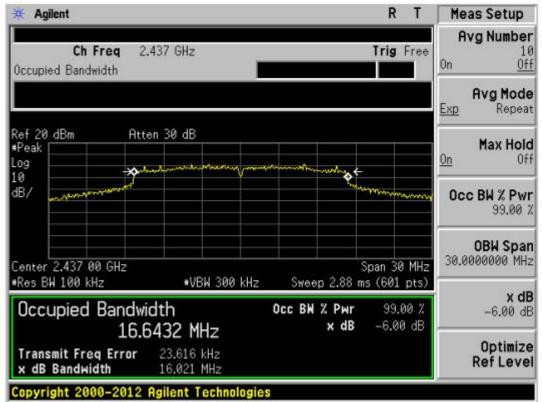
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#### 802.11g H2412MHZ



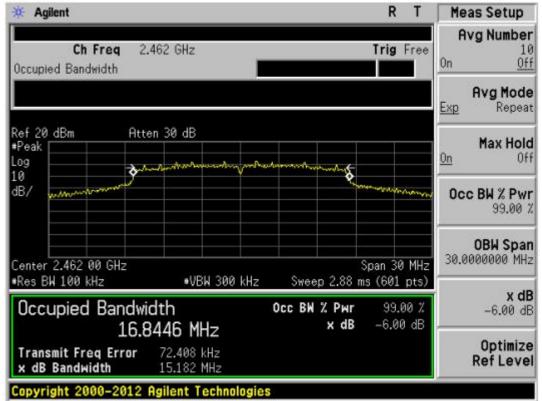
#### 802.11g CH2437MHZ



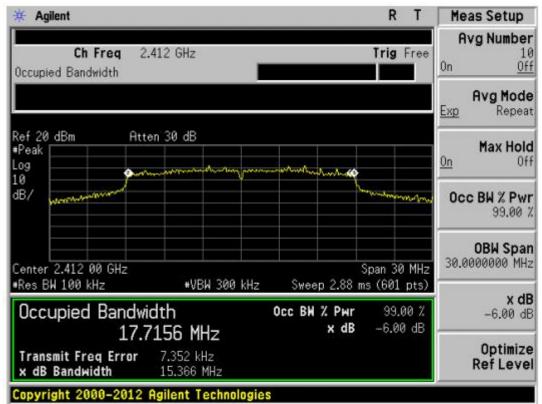


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#### 802.11g CH2462MHZ



#### 802.11n 20-2412MHz



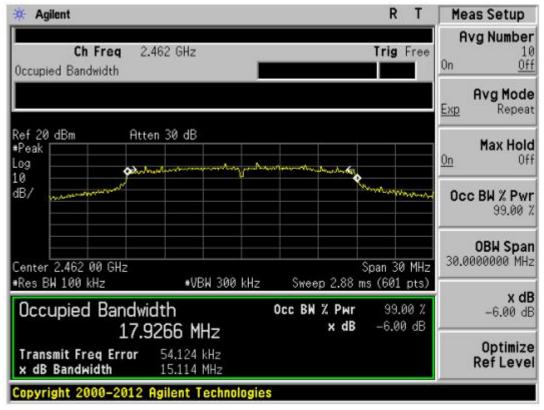


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#### 802.11n 20-2437MHz

券 Agilent	R T Meas Se	etup
Ch Freq 2.437 GHz Occupied Bandwidth	Trig Free On	umber 10 <u>Off</u>
		<b>Mode</b> Repeat
Ref 20 dBm Atten 30 dB	Mai	x Hold
Peak Log 10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	unhadenmentunhundet	Off
dB/	Occ BW	<b>% Pwr</b> 99.00 %
0 407 00 CU-	20,00000	I Span 00 MHz
Center 2.437 00 GHz #Res BW 100 kHz #VBW 300 k	span so minz	
Occupied Bandwidth 17.7429 MHz		<b>x dB</b> 6.00 dB
Transmit Freq Error 8.498 kHz × dB Bandwidth 13.855 MHz		timize Level
Copyright 2000-2012 Agilent Technolo	gies	

#### 802.11n 20-2462MHz



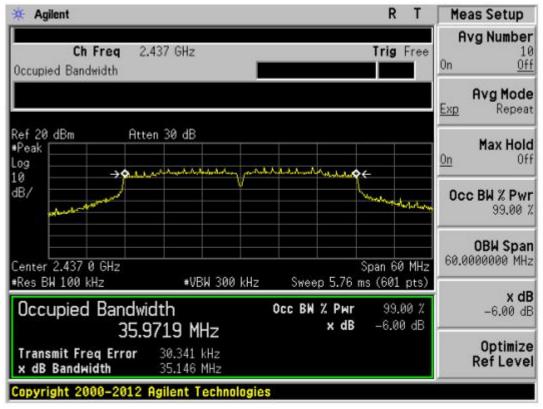


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#### 802.11n 40-2422MHz

* Agilent R	T Meas Setup
Ch Freq 2.422 GHz Trig Occupied Bandwidth	Free 0n 0ff
	Avg Mode Exp Repeat
Ref 20 dBm Atten 30 dB	Max Hold
Peak Log 10 → ♠	On Off
AB/	Occ BW % Pwr
ally always and a second and a	99.00 2
	OBW Spar
Center 2.422 0 GHz Span 60	
*Res BW 100 kHz	
Occupied Bandwidth Осс ВИ Х Риг 99.0 35.9491 MHz × dB -6.00	00 % -6.00 dE
Transmit Freq Error 4.179 kHz × dB Bandwidth 35.148 MHz	Optimize Ref Leve
Copyright 2000-2012 Agilent Technologies	

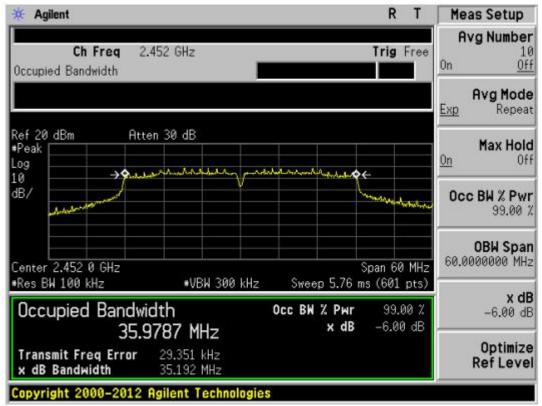
#### 802.11n 40-2437MHz





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#### 802.11n 40-2452MHz





#### **4 CONDUCTED OUTPUT POWER**

#### 4.1 limit

For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. If transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

#### 4.2 test procedure

- a. Connect each EUT's antenna output to power sensor by RF cable and attenuator
- b. Measure the PK output power of each antenna port by power sensor.

#### 4.3 TEST SETUP



#### 4.5 test results

TestMode	Channel (MHz)	Result (dBm)	Limit (dBm)	Verdict
802.11b	2412MHz	6.75	30	Pass
802.11b	2437MHz	6.69	30	Pass
802.11b	2462MHz	6.71	30	Pass
802.11g	2412MHz	5.61	30	Pass
802.11g	2437MHz	6.49	30	Pass
802.11g	2462MHz	5.70	30	Pass
802.11n 20	2412MHz	5.53	30	Pass
802.11n 20	2437MHz	6.12	30	Pass
802.11n 20	2462MHz	5.37	30	Pass
802.11n 40	2422MHz	4.07	30	Pass
802.11n 40	2437MHz	4.93	30	Pass
802.11n 40	2452MHz	4.10	30	Pass



#### 5. POWER SPECTRAL DENSITY

#### 5.1 LIMIT

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8dBm in any 3 kHz band during any time interval of continuous transmission.

#### 5.2 TEST PROCEDURE

(1) Connect EUT's antenna output to spectrum analyzer by RF cable.

(2) Set the spectrum analyzer as follows:

Center frequency	DTS Channel center frequency
RBW:	3 kHz ≤ RBW ≤ 100 kHz
VBW:	≥ 3RBW
Span	1.5 times the DTS bandwidth
Detector Mode:	Pake
Sweep time:	auto
Trace mode	Max hold

(3) Allow the trace to stabilize, use the peak marker function to determine the maximum amplitude level within the RBW

(4) If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

#### 5.3 TEST SETUP



Spectrum Analyzer

EUT



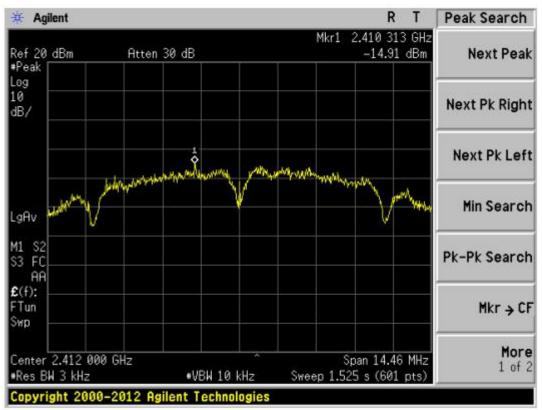
### 5.4 TEST RESULTS

TestMode	Channel (MHz)	Result (dBm/3KHz)	Limit (dBm/3KHz)	Verdict
802.11b	2412MHz	-14.91	8	Pass
802.11b	2437MHz	-13.82	8	Pass
802.11b	2462MHz	-15.58	8	Pass
802.11g	2412MHz	-19.40	8	Pass
802.11g	2437MHz	-19.35	8	Pass
802.11g	2462MHz	-20.02	8	Pass
802.11n 20	2412MHz	-20.50	8	Pass
802.11n 20	2437MHz	-19.62	8	Pass
802.11n 20	2462MHz	-20.18	8	Pass
802.11n 40	2422MHz	-22.90	8	Pass
802.11n 40	2437MHz	-23.56	8	Pass
802.11n 40	2452MHz	-23.34	8	Pass



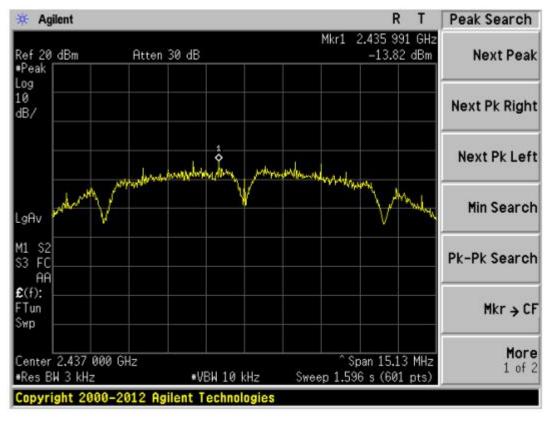


#### 5.5 original test data



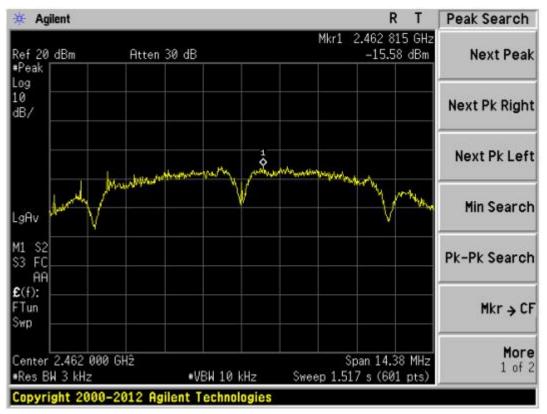
802.11b-2412MHz

#### 802.11b-2437MHz

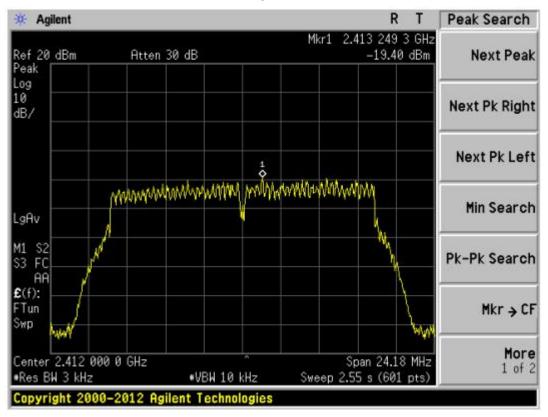




802.11b-2462MHz



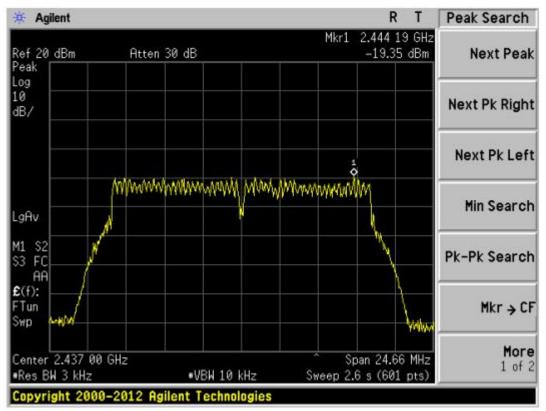
802.11g-2412MHz



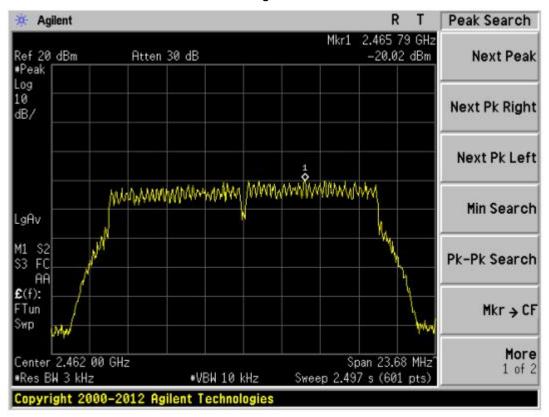


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802.11g-2437MHz



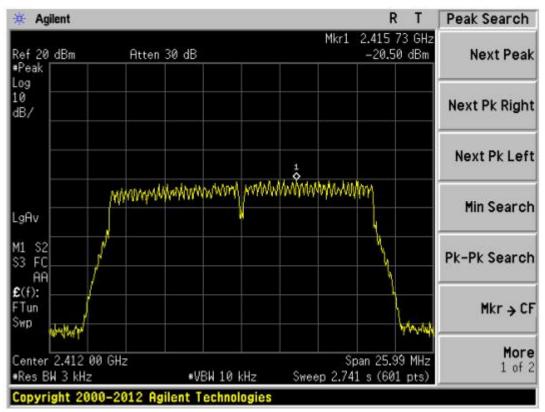
802.11g-2462MHz



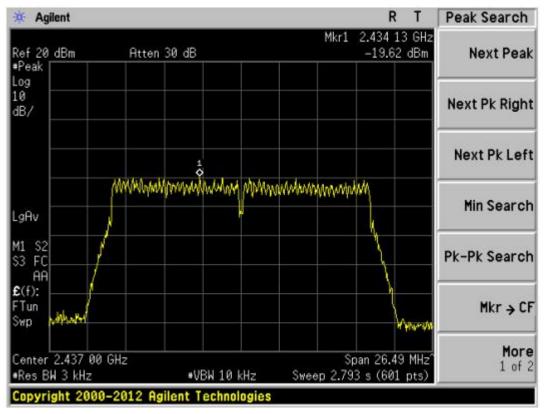


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802.11n 20-2412MHz



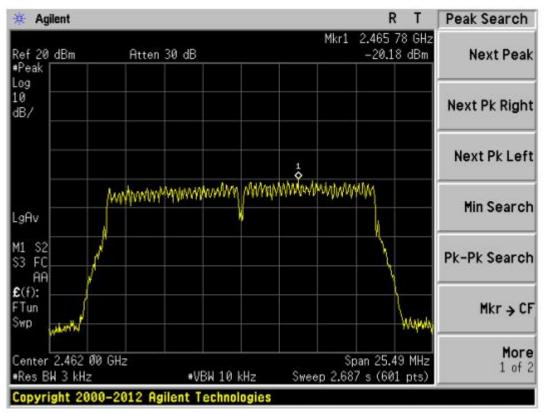
#### 802.11n 20-2437MHz



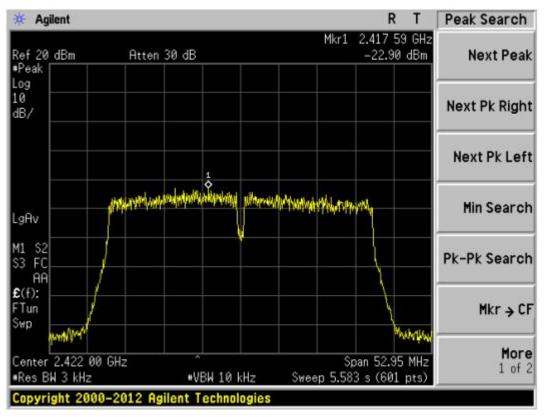


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802.11n 20-2462MHz



#### 802.11n 40-2422MHz



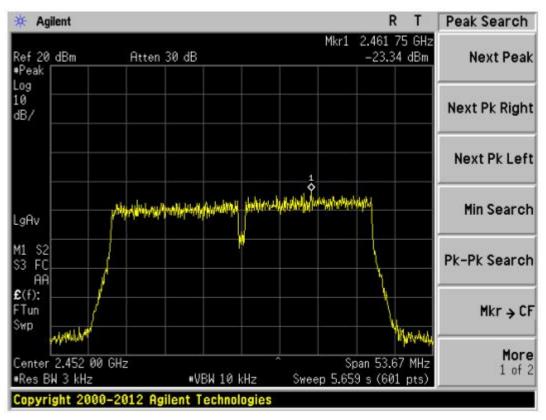


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🔆 Agilent R Т Peak Search Mkr1 2.420 09 GHz Ref 20 dBm Atten 30 dB -23.56 dBm Next Peak #Peak Log 10 Next Pk Right dB/ Next Pk Left A warmen and a state of the sta Kowa Manda Angeland an kan da Min Search LgAv M1 S2 S3 FC Pk-Pk Search AA £(f): FTun Mkr → CF Swp MAR No. Min. More Center 2.437 00 GHz Span 54.24 MHz 1 of 2 \*Res BW 3 kHz +VBW 10 kHz Sweep 5.719 s (601 pts) Copyright 2000-2012 Agilent Technologies

#### 802.11n 40-2437MHz

#### 802.11n 40-2452MHz





6. Band edge and spurious(conducted)

#### 6.1 LIMIT

In any 100kHz bandwidth outside the frequency bands in which the spread spectrum intentional radiator in operating, the radio frequency power that is produced by the intentional radiator shall be at least 30dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power.

#### 6.2 TEST PROCEDURE

(1) Connect EUT's antenna output to spectrum analyzer by RF cable.

(2) Establish a reference level by using the following procedure:

Center frequency	DTS Channel center
	frequency
RBW:	100kHz
VBW:	300kHz
Span	1.5times the DTS bandwidth
Detector Mode:	Peak
Sweep time:	auto
Trace mode	Max hold

(3) Establish Allow the trace to stabilize, use the peak marker function to determine the maximum peak

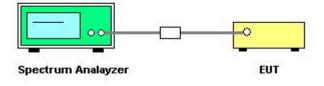
power level to establish the reference level.

(4) Set the spectrum analyzer as follows:

RBW:	100kHz
VBW:	300kHz
Span	Encompass frequency range to be
	measured
Number of measurement points	≥span/RBW
Detector Mode:	Peak
Sweep time:	auto
Trace mode	Max hold

(5) Allow the trace to stabilize, use the peak marker function to determine the maximum amplitude of all unwanted emissions outside of the authorized frequency band

#### 6.3 TEST SETUP

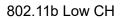


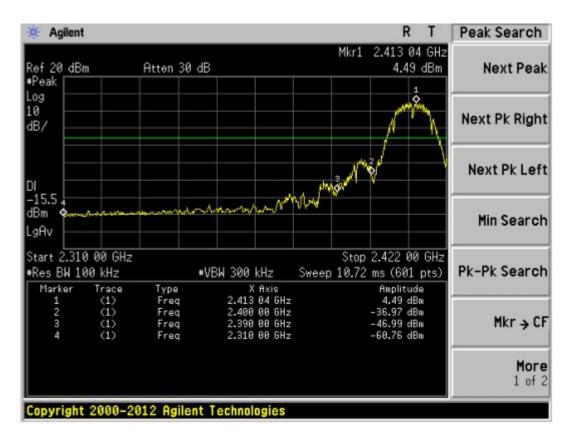


#### 6.5 TEST RESULTS

Eut set mode	CH or Frequency Result					
802.11b	CH1	Pass				
	CH11	Pass				
802.11g	CH1	Pass				
	CH11	Pass				
802.11n 20	CH1	Pass				
	CH11	Pass				
802.11n 40	CH3	Pass				
	CH9	Pass				

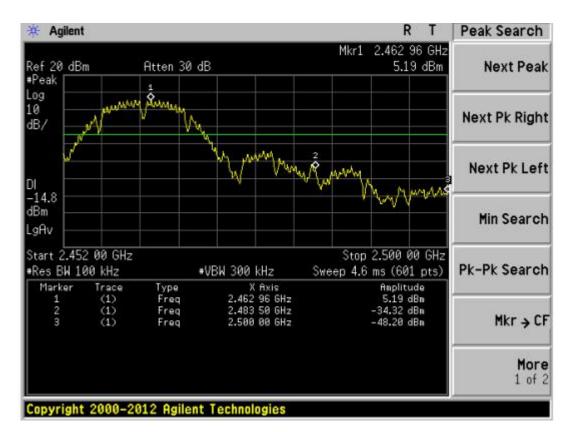
#### 6.5 Original test data



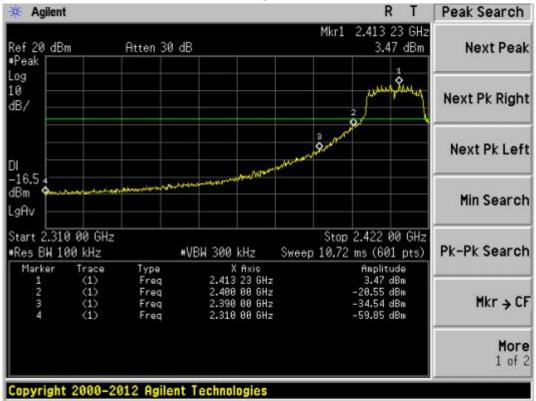




#### 802.11b High CH

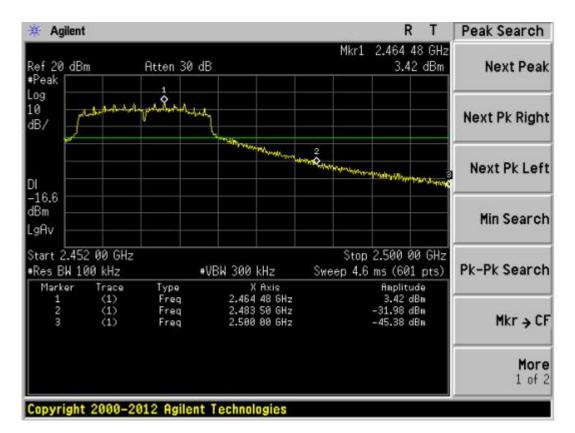


#### 802.11g low CH

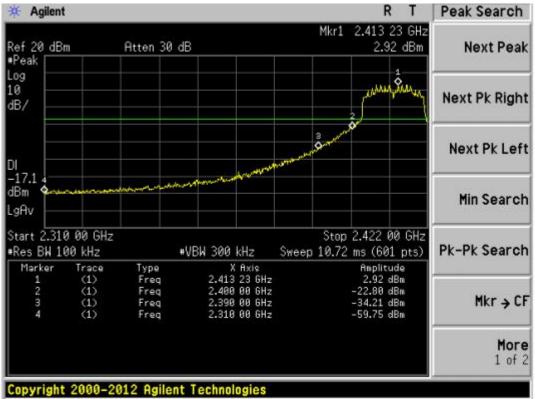




#### 802.11g high CH



#### 802.11n20 Low CH



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#### 802.11n20 High CH Peak Search 💥 Agilent R т Mkr1 2.466 96 GHz 3.15 dBm Ref 20 dBm Atten 30 dB Next Peak #Peak Log Ŷ 10 And Next Pk Right dB/ Apr. Int. Pare 20 malim Next Pk Left American DI -16.9 dBm Min Search LgAv Start 2.452 00 GHz Stop 2.500 00 GHz **Pk-Pk Search** Res BW 100 kHz +VBW 300 kHz Sweep 4.6 ms (601 pts) Type Freq Marker Trace X Axis Amplitude 2.466 96 GHz 2.483 50 GHz 3.15 dBm -29.32 dBm (1)1 Freq Mkr > CF 3 Freq 2.500 00 GHz -43.24 dBm More 1 of 2 Copyright 2000-2012 Agilent Technologies

#### 802.11n40 Low CH



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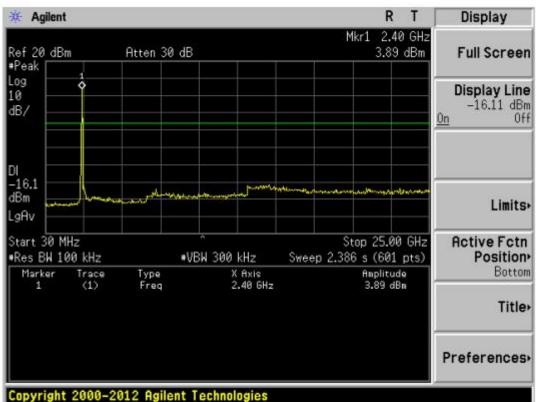


		802.	.11n40	High (	СН				
						F	1	Γ	Peak Search
n	Atten 30 d	В			Mkr1				Next Peak
wern	mayna	un tr	un						Next Pk Right
			~~	nunderse.	in Ply	-	Press.	1.3	Next Pk Left
									Min Search
2 00 GHz 30 kHz				Sweep		ms (60	1 pt		Pk-Pk Search
(1) (1) (1)	Type Freq Freq Freq	2.463	8 28 GHz 8 50 GHz			-1.43 -33.50	dBn dBn		Mkr → CF
									More 1 of 2
	n 2 00 GHz 2 00 kHz Trace (1) (1)	n Atten 30 d Atten 30 d Atte	n Atten 30 dB	n Atten 30 dB Atten 40 dB Att	n Atten 30 dB	Mkr1 n Atten 30 dB Mkr1 Atten 30 dB Atten 40 dB Atte	Mkr1 2.463   n Atten 30 dB -1.4   1 1 -1.4   1 1 -1.4   1 1 -1.4   1 1 -1.4   1 1 -1.4   1 1 -1.4   1 1 1   1 1 1   1 1 1   2 00 GHz Stop 2.500   30 kHz +VBW 300 kHz Sweep 6.52 ms (60   Trace Type X Axis Anplit   (1) Freq 2.463 28 GHz -1.43   (1) Freq 2.483 50 GHz -33.50	R 1 Mkr1 2.463 28 6 n Atten 30 dB -1.43 dE -1.43 dE	R T   Mkr1 2.463 28 GHz   n Atten 30 dB -1.43 dBm   1 1 -1.43 dBm   1 2 -1.43 dBm   2 -1.43 dBm -1.43 dBm   1 2 -1.43 dBm -1.43 dBm   1 2 -1.43 dBm -1.43 dBm   2 0 GHz -1.43 <t< td=""></t<>

Flux Compliance Service Laboratory Room 105 Floor Bao hao Technology Building 1 NO.15 Gong ye West Road Hi-Tech Industrial, Song shan lake Dongguan Tel: 769-27280901 Fax:769-27280901 http://www.FCS-lab.com

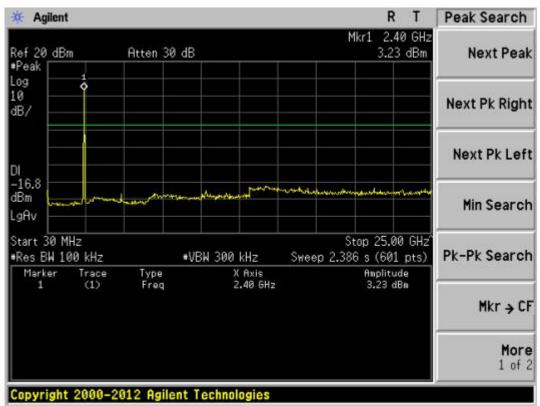


Spurious emissions (802.11b)



802.11b low CH, 2412MHZ 30MHZ-25GHZ

#### 802.11b Middle CH, 2437MHz 30MHZ-25GHZ





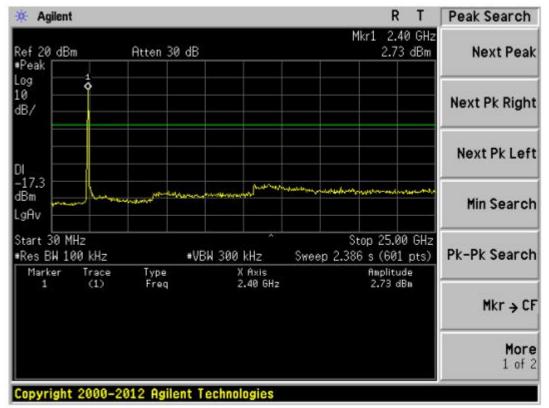
#### Peak Search 来 Agilent R Т Mkr1 2.44 GHz 3.85 dBm Atten 30 dB Next Peak Ref 20 dBm #Peak Log Ó 10 Next Pk Right dB/ Next Pk Left DI -16.1 dBm Min Search LgAv Start 30 MHz Stop 25.00 GHz Pk-Pk Search \*Res BW 100 kHz VBW 300 kHz Sweep 2.386 s (601 pts) Trace (1) Type Freq X Axis 2.44 GHz Amplitude 3.85 dBm Marker Mkr → CF More 1 of 2 Copyright 2000-2012 Agilent Technologies

# 802.11b High CH, 2462MHz 30MHZ-25GHZ

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(802.11g)

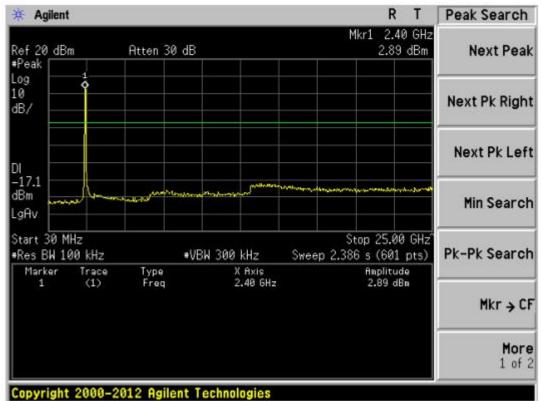
# 802.11g Low CH, 2412MHz 30MHz-25GHZ



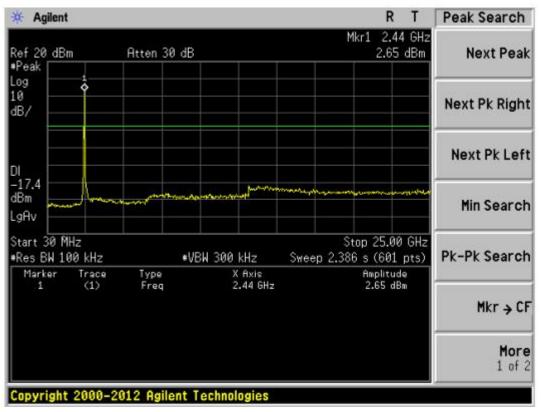
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# 802.11g Middle CH, 2437MHz 30MHz-25GHZ



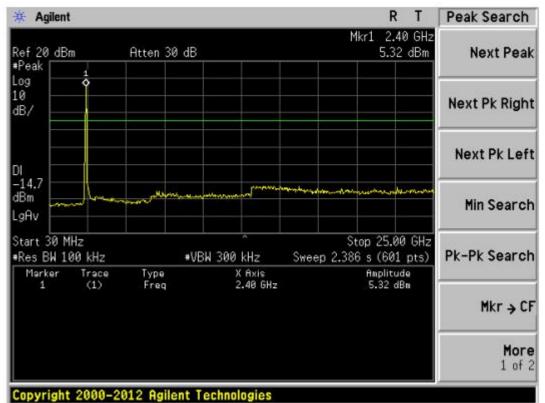
802.11g High CH, 2462MHz 30MHZ-25GHZ



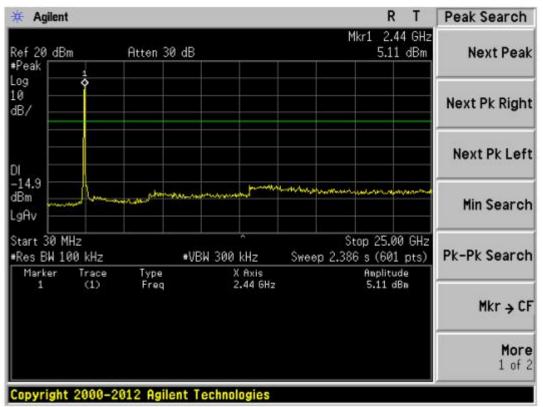
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# 802.11n 20 Low CH, 2412MHz 30MHZ-25GHZ



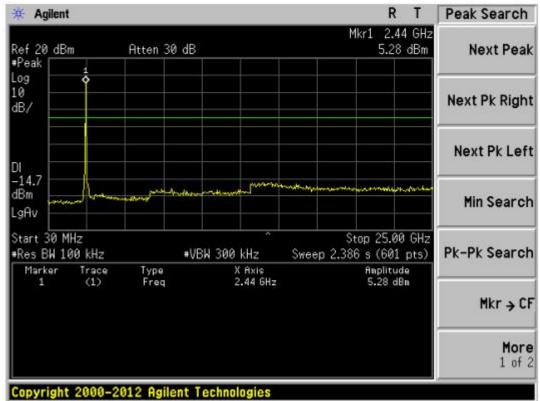
## 802.11n 20 Middle CH, 2437MHz 30MHZ-25GHZ



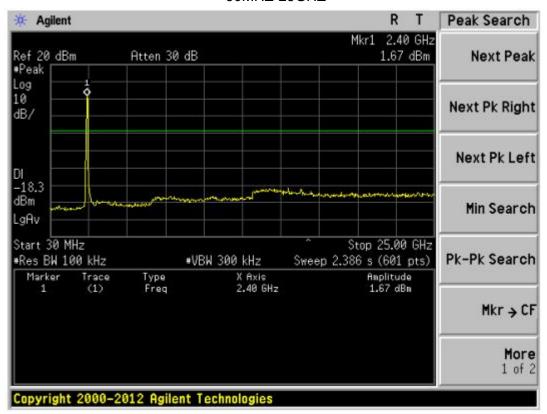
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# 802.11n 20 High CH, 2462MHz 30MHZ-25GHZ



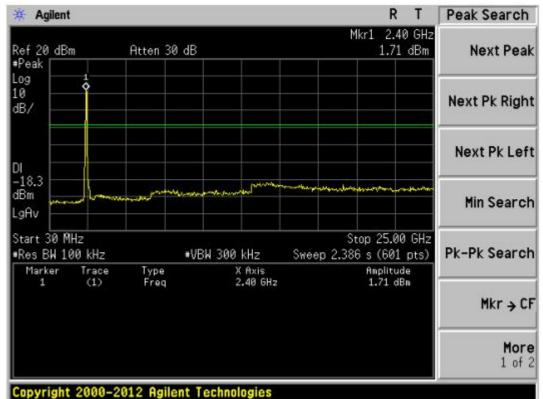
# 802.11n 40 Low CH, 2422MHz 30MHZ-25GHZ



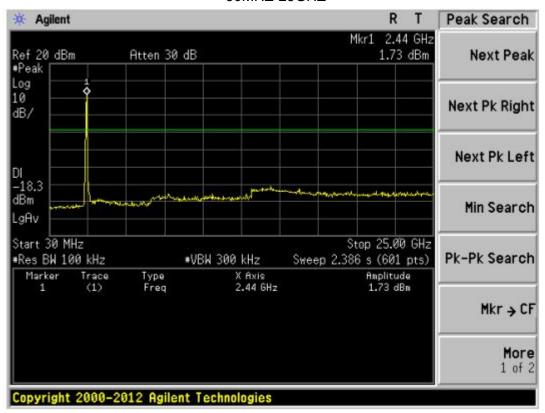
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# 802.11n 40 Middle CH, 2437MHz 30MHZ-25GHZ



# 802.11n 40 High CH, 2452MHz 30MHZ-25GHZ





# 7 RADIATED EMISSION MEASUREMENT

### 7.1 RADIATED EMISSION LIMITS

In any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the Restricted band specified on Part15.205(a)&209(a) limit in the table and according to ANSI C63.10-2013 below has to be followed

LIMITS OF RADIATED EMISSION MEASUREMENT (0.009MHz - 1000MHz)

Frequencies	Field Strength	Measurement Distance		
(MHz)	(micorvolts/meter)	(meters)		
0.009~0.490	2400/F(KHz)	300		
0.490~1.705	0.490~1.705 24000/F(KHz) 30			
1.705~30.0	30	30		
30~88	100	3		
88~216	150	3		
216~960	200	3		
Above 960	500	3		

LIMITS OF RADIATED EMISSION MEASUREMENT (1GHz-25 GHz)

FREQUENCY (MHz)	(dBuV/m) (at 3M)			
	PEAK	AVERAGE		
Above 1000	74	54		

Notes:

(1) The limit for radiated test was performed according to FCC PART 15C.

- (2) The tighter limit applies at the band edges.
- (3) Emission level (dBuV/m)=20log Emission level (uV/m).

### For Radiated Emission

Spectrum Parameter	Setting			
Attenuation	Auto			
Detector	Peak/AV			
Start Frequency	1000 MHz(Peak/AV)			
Stop Frequency	10th carrier hamonic(Peak/AV)			
RB / VB (emission in restricted				
band)	PK=1MHz / 1MHz, AV=1 MHz /10 Hz			

### For Band edge

Spectrum Parameter	Setting			
Detector	Peak/AV			
	Lower Band Edge: 2300 to 2403 MHz			
Start/Stop Frequency	Upper Band Edge: 2479 to 2500 MHz			
RB / VB (emission in restricted band)	PK=1MHz / 1MHz, AV=1 MHz / 10 Hz			



Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~90kHz / RB 200Hz for PK & AV
Start ~ Stop Frequency	90kHz~110kHz / RB 200Hz for QP
Start ~ Stop Frequency	110kHz~490kHz / RB 200Hz for PK & AV
Start ~ Stop Frequency	490kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP

### 7.2 TEST PROCEDURE

- a. The measuring distance of at 3 m shall be used for measurements at frequency 0.009MHz up to 1GHz,and above 1GHz.
- b. The EUT was placed on the top of a rotating table 0.8 meters (above 1GHz is 1.5 m) above the ground at a 3 meter anechoic chamber test site. The table was rotated 360 degrees to determine the position of the highest radiation.
- c. The height of the equipment shall be 0.8 m(above 1GHz is 1.5 m); the height of the test antenna shall vary between 1 m to 4 m. horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then QuasiPeak detector mode re-measured.
- e. If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
- f. For the actual test configuration, please refer to the related Item –EUT Test Photos. Note:

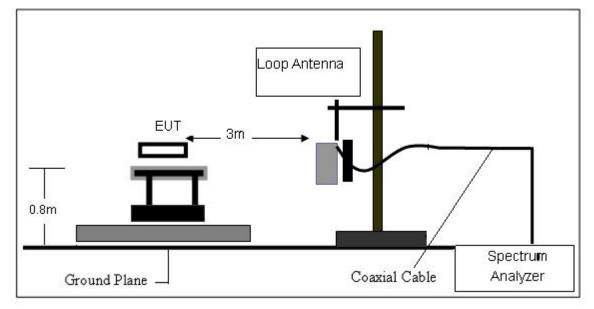
Both horizontal and vertical antenna polarities were tested

and performed pretest to three orthogonal axis. The worst case emissions were reported

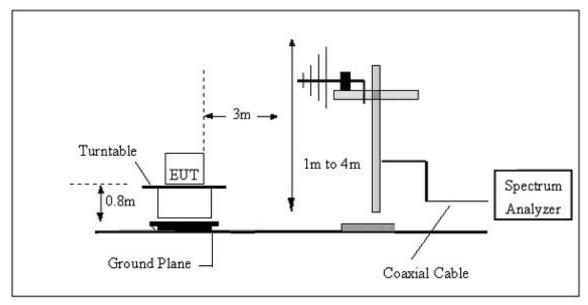


## 7.3 TESTSETUP

# (A) Radiated Emission Test-Up Frequency Below 30MHz

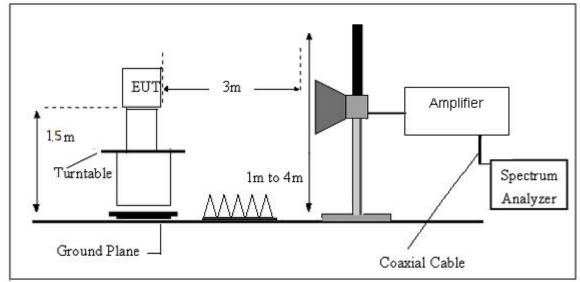


### (B) Radiated Emission Test-Up Frequency 30MHz~1GHz











## 7.4. TEST RESULTS

(9KHz-30MHz)

Temperature:	<b>22.7℃</b>	Relative Humidity:	61%
Test Voltage:	DC 5V	Test Mode:	802.11b

Freq.	Reading	Limit	Margin	State	
(MHz)	(dBuV/m)	(dBuV/m)	(dB)	P/F	Test Result
					PASS
					PASS

Note:

The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

Distance extrapolation factor =40 log (specific distance/test distance)(dB);

Limit line = specific limits (dBuv) + distance extrapolation factor.



(30MHz-1000MHz)

Temperature:	24.7°C	Relative Humidity:	61%			
Test Voltage:	DC 5V	Phase:	Horizontal			
Test Mode:	802.11b(worst)	I				
30.0 dBuV/m			Limit1: — Margin: —			
40						
With many the	mary and mary marked and the second	warman the state and the second state of the s	hand many man sala and man and man			

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/	(dBuV/m)	(dBuV/m)	(dB)	
			m)				
1	33.2112	30.80	-15.50	15.30	40.00	-24.70	QP
2	49.3594	30.70	-18.58	12.12	40.00	-27.88	QP
3	90.8554	30.53	-18.52	12.01	43.50	-31.49	QP
4	157.0074	30.74	-17.78	12.96	43.50	-30.54	QP
5	267.5455	30.39	-17.00	13.39	46.00	-32.61	QP
6	451.1350	30.96	-16.08	14.88	46.00	-31.12	QP

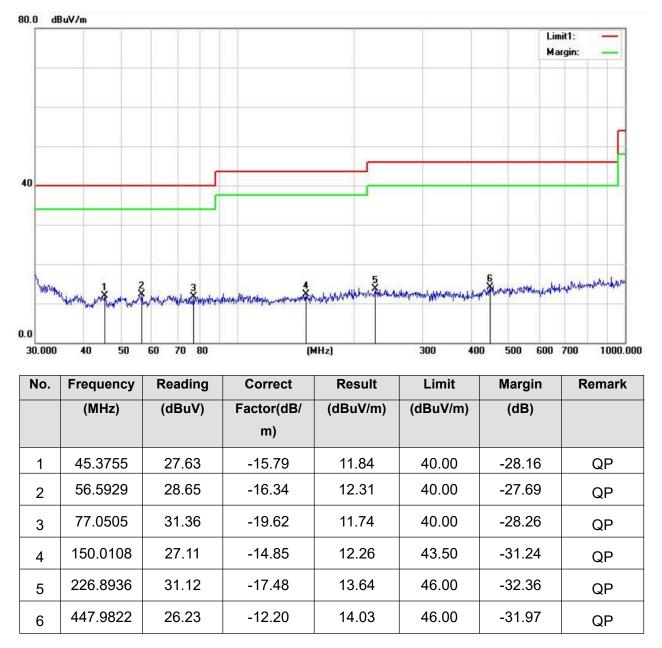
Note: 1. Margin = Result (Result = Reading + Factor )–Limit

2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.

3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.



Temperature:	22.7°C	Relative Humidity:	61%
Test Voltage:	DC 5V	Phase:	Vertical
Test Mode:	ON		



Note: 1. Margin = Result (Result = Reading + Factor )-Limit

2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.

3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.



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# (1GHz~25GHz) Restricted band and Spurious emission Requirements

Peak value:			002	. TD(vvorst)				
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4824.00	40.17	31.79	8.62	32.10	48.48	74.00	-25.52	Vertical
7236.00	34.14	36.19	11.68	31.97	50.04	74.00	-23.96	Vertical
9648.00	32.66	38.07	14.16	31.56	53.33	74.00	-20.67	Vertical
12060.00	*					74.00		Vertical
14472.00	*		č.			74.00		Vertical
16884.00	*					74.00		Vertical
4824.00	38.85	31.79	8.62	32.10	47.16	74.00	-26.84	Horizontal
7236.00	33.90	36.19	11.68	31.97	49.80	74.00	-24.20	Horizontal
9648.00	32.24	38.07	14.16	31.56	52.91	74.00	-21.09	Horizontal
12060.00	*					74.00		Horizontal
14472.00	*					74.00		Horizontal
16884.00	*					74.00		Horizontal
Average val	ue:							
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4824.00	29.26	31.79	8.62	32.10	37.57	54.00	-16.43	Vertical
7236.00	23.01	36.19	11.68	31.97	38.91	54.00	-15.09	Vertical
9648.00	23.00	38.07	14.16	31.56	43.67	54.00	-10.33	Vertical
12060.00	*					54.00		Vertical
14472.00	*					54.00		Vertical
16884.00	*					54.00		Vertical
4824.00	28.40	31.79	8.62	32.10	36.71	54.00	-17.29	Horizontal
7236.00	22.48	36.19	11.68	31.97	38.38	54.00	-15.62	Horizontal
9648.00	21.99	38.07	14.16	31.56	42.66	54.00	-11.34	Horizontal
12060.00	*					54.00		Horizontal
14472.00	*					54.00		Horizontal
16884.00	*					54.00		Horizontal

802.11b(Worst)-Low



Peak value:			802.1	1b(VVorst)-	vildale			
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4874.00	39.24	31.85	8.66	32.12	47.63	74.00	-26.37	Vertical
7311.00	34.22	36.37	11.71	31.91	50.39	74.00	<b>-</b> 23.61	Vertical
9748.00	33.68	38.27	14.25	31.56	54.64	74.00	-19.36	Vertical
12185.00	*					74.00		Vertical
14622.00	*		93 93			74.00		Vertical
17059.00	*					74.00		Vertical
4874.00	39.74	31.85	8.66	32.12	48.13	74.00	-25.87	Horizontal
7311.00	32.87	36.37	11.71	31.91	49.04	74.00	-24.96	Horizontal
9748.00	33.58	38.27	14.25	31.56	54.54	74.00	-19.46	Horizontal
12185.00	*					74.00		Horizontal
14622.00	*					74.00		Horizontal
17059.00	*					74.00		Horizontal
Average val								
Frequency (MHz)	Read Leve <b>l</b> (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4874.00	30.11	31.85	8.66	32.12	38.50	54.00	-15.50	Vertical
7311.00	22.54	36.37	11.71	31.91	38.71	54.00	-15.29	Vertical
9748.00	22.94	38.27	14.25	31.56	43.90	54.00	-10.10	Vertical
12185.00	*					54.00		Vertical
14622.00	*					54.00		Vertical
17059.00	*			2		54.00		Vertica
4874.00	29.86	31.85	8.66	32.12	38.25	54.00	-15.75	Horizontal
7311.00	21.96	36.37	11.71	31.91	38.13	54.00	-15.87	Horizontal
9748.00	23.29	38.27	14.25	31.56	44.25	54.00	-9.75	Horizontal
12185.00	*				9	54.00		Horizontal
14622.00	*					54.00		Horizontal
17059.00	*					54.00		Horizontal

### 802.11b(Worst)-Middle



# 802.11b(Worst)-High

Peak value:								
Frequency (MHz)	Read Leve <b>l</b> (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Leve <b>l</b> (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4924.00	44.70	31.90	8.70	32.15	53.15	74.00	-20.85	Vertical
7386.00	34.85	36.49	11.76	31.83	51.27	74.00	-22.73	Vertical
9848.00	36.95	38.62	14.31	31.77	58.11	74.00	-15.89	Vertical
12310.00	*					74.00		Vertical
14772.00	*				- 	74.00		Vertical
17234.00	*					74.00		Vertical
4924.00	44.03	31.90	8.70	32.15	52.48	74.00	-21.52	Horizontal
7386.00	33.76	36.49	11.76	31.83	50.18	74.00	-23.82	Horizontal
9848.00	33.12	38.62	14.31	31.77	54.28	74.00	-19.72	Horizontal
12310.00	*					74.00		Horizontal
14772.00	*					74.00		Horizontal
17234.00	*					74.00		Horizontal

### Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cab <b>l</b> e Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4924.00	35.63	31.90	8.70	32.15	44.08	54.00	-9.92	Vertical
7386.00	24.77	36.49	11.76	31.83	41.19	54.00	-12.81	Vertical
9848.00	25.45	38.62	14.31	31.77	46.61	54.00	-7.39	Vertical
12310.00	*					54.00		Vertical
14772.00	*					54.00		Vertical
17234.00	*					54.00		Vertical
4924.00	34.40	31.90	8.70	32.15	42.85	54.00	-11.15	Horizontal
7386.00	23.16	36.49	11.76	31.83	39.58	54.00	-14.42	Horizontal
9848.00	22.39	38.62	14.31	31.77	43.55	54.00	-10.45	Horizontal
12310.00	*					54.00		Horizontal
14772.00	*					54.00		Horizontal
17234.00	*					54.00		Horizontal

Remark:

1. Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor

2. *"\*", means this data is the too weak instrument of signal is unable to test.* 





### Radiated Band Edge data

Remark: All restriction band have been tested, and only the worst case is shown in report

802.11 b low CH

### Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2390.00	50.66	27.59	5.38	34.01	49.62	74.00	-24.38	Horizontal
2400.00	59.34	27.58	5.39	34.01	58.30	74.00	-15.70	Horizontal
2390.00	52.27	27.59	5.38	34.01	51.23	74.00	-22.77	Vertical
2400.00	60.87	27.58	5.39	34.01	59.83	74.00	-14.17	Vertical

### Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2390.00	37.71	27.59	5.38	34.01	36.67	54.00	-17.33	Horizontal
2400.00	45.89	27.58	5.39	34.01	44.85	54.00	-9.15	Horizontal
2390.00	39.45	27.59	5.38	34.01	38.41	54.00	<b>-</b> 15.59	Vertical
2400.00	46.94	27.58	5.39	34.01	45.90	54.00	-8.10	Vertical

### 802.11 b High CH

Peak value:

Frequency (MHz)	Read Leve <b>l</b> (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	50.89	27.53	5.47	33.92	49.97	74.00	-24.03	Horizontal
2500.00	47.04	27.55	5.49	29.93	50.15	74.00	-23.85	Horizontal
2483.50	52.95	27.53	5.47	33.92	52.03	74.00	-21.97	Vertical
2500.00	49.36	27.55	5.49	29.93	52.47	74.00	-21.53	Vertical

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	37.92	27.53	5.47	33.92	37.00	54.00	-17.00	Horizontal
2500.00	34.21	27.55	5.49	29.93	37.32	54.00	-16.68	Horizontal
2483.50	39.78	27.53	5.47	33.92	38.86	54.00	-15.14	Vertical
2500.00	36.05	27.55	5.49	29.93	39.16	54.00	-14.84	Vertical





# 802.11 g Low CH

Peak value:

Girl Belle van de in er het sektrol heade											
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization			
2390.00	50.21	27.59	5.38	34.01	49.17	74.00	-24.83	Horizontal			
2400.00	58.74	27.58	5.39	34.01	57.70	74.00	-16.30	Horizontal			
2390.00	51.79	27.59	5.38	34.01	50.75	74.00	-23.25	Vertical			
2400.00	60.15	27.58	5.39	34.01	59.11	74.00	-14.89	Vertical			

### Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2390.00	37.39	27.59	5.38	34.01	36.35	54.00	-17.65	Horizontal
2400.00	45.53	27.58	5.39	34.01	44.49	54.00	-9.51	Horizontal
2390.00	39.09	27.59	5.38	34.01	38.05	54.00	-15.95	Vertical
2400.00	46.54	27.58	5.39	34.01	45.50	54.00	-8.50	Vertical

# 802.11 g High CH

# Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	50.25	27.53	5.47	33.92	49.33	74.00	-24.67	Horizontal
2500.00	46.54	27.55	5.49	29.93	49.65	74.00	-24.35	Horizontal
2483.50	52.22	27.53	5.47	33.92	51.30	74.00	-22.70	Vertical
2500.00	48.78	27.55	5.49	29.93	51.89	74.00	-22.11	Vertical

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	37.53	27.53	5.47	33.92	36.61	54.00	-17.39	Horizontal
2500.00	33.91	27.55	5.49	29.93	37.02	54.00	-16.98	Horizontal
2483.50	39.35	27.53	5.47	33.92	38.43	54.00	-15.57	Vertical
2500.00	35.73	27.55	5.49	29.93	38.84	54.00	-15.16	Vertical



# Peak value:

802.11 N 20 Low CH

reak value	reak value.										
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization			
2390.00	50.18	27.59	5.38	34.01	49.14	74.00	-24.86	Horizontal			
2400.00	58.69	27.58	5.39	34.01	57.65	74.00	-16.35	Horizontal			
2390.00	51.75	27.59	5.38	34.01	50.71	74.00	-23.29	Vertical			
2400.00	60.09	27.58	5.39	34.01	59.05	74.00	-14.95	Vertical			
Average va	ue:										
Frequency (MHz)	Read Leve <b>l</b> (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization			
2390.00	37.36	27.59	5.38	34.01	36.32	54.00	-17.68	Horizontal			
2400.00	45.50	27.58	5.39	34.01	44.46	54.00	-9.54	Horizontal			
2390.00	39.06	27.59	5.38	34.01	38.02	54.00	-15.98	Vertical			
2400.00	46.51	27.58	5.39	34.01	45.47	54.00	-8.53	Vertical			

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## 802.11 N 20 High CH

### Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	50.20	27.53	5.47	33.92	49.28	74.00	-24.72	Horizontal
2500.00	46.50	27.55	5.49	29.93	49.61	74.00	-24.39	Horizontal
2483.50	52.16	27.53	5.47	33.92	51.24	74.00	-22.76	Vertical
2500.00	48.73	27.55	5.49	29.93	51.84	74.00	-22.16	Vertical

### Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	37.50	27.53	5.47	33.92	36.58	54.00	-17.42	Horizontal
2500.00	33.89	27.55	5.49	29.93	37.00	54.00	-17.00	Horizontal
2483.50	39.32	27.53	5.47	33.92	38.40	54.00	-15.60	Vertical
2500.00	35.71	27.55	5.49	29.93	38.82	54.00	-15.18	Vertical



# 802.11 N 40 Low CH

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2390.00	49.31	27.59	5.38	34.01	48.27	74.00	<b>-</b> 25.73	Horizontal
2400.00	57.54	27.58	5.39	34.01	56.50	74.00	-17.50	Horizontal
2390.00	50.83	27.59	5.38	34.01	49.79	74.00	-24.21	Vertical
2400.00	58.71	27.58	5.39	34.01	57.67	74.00	-16.33	Vertical

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### Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2390.00	36.75	27.59	5.38	34.01	35.71	54.00	-18.29	Horizontal
2400.00	44.79	27.58	5.39	34.01	43.75	54.00	-10.25	Horizontal
2390.00	38.38	27.59	5.38	34.01	37.34	54.00	-16.66	Vertical
2400.00	45.73	27.58	5.39	34.01	44.69	54.00	-9.31	Vertical

### 802.11 N 40 High CH

### Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	48.96	27.53	5.47	33.92	48.04	74.00	-25.96	Horizontal
2500.00	45.54	27.55	5.49	29.93	48.65	74.00	-25.35	Horizontal
2483.50	50.74	27.53	5.47	33.92	49.82	74.00	-24.18	Vertical
2500.00	47.61	27.55	5.49	29.93	50.72	74.00	-23.28	Vertical

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	36.76	27.53	5.47	33.92	35.84	54.00	-18.16	Horizontal
2500.00	33.30	27.55	5.49	29.93	36.41	54.00	-17.59	Horizontal
2483.50	38.49	27.53	5.47	33.92	37.57	54.00	-16.43	Vertical
2500.00	35.09	27.55	5.49	29.93	38.20	54.00	-15.80	Vertical

### Remark:

1. Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor

2. The emission levels of other frequencies are very lower than the limit and not show in test report.



### **8 CONDUCTED EMISSION TEST**

### 8.1.1 POWER LINE CONDUCTED EMISSION LIMITS

Operating frequency band. In case the emission fall within the restricted band specified on Part 207(a) limit in the table below has to be followed.

	Conducted Emiss	sionlimit (dBuV)
FREQUENCY (MHz)	Quasi-peak	Average
0.15 -0.5	66 - 56 *	56 - 46 *
0.50 -5.0	56.00	46.00
5.0 -30.0	60.00	50.00

Note:

(1) The tighter limit applies at the band edges.

(2) The limit of " \* " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

The following table is the setting of the receiver

Receiver Parameters	Setting		
Attenuation	10 dB		
Start Frequency	0.15 MHz		
Stop Frequency	30 MHz		
IF Bandwidth	9 kHz		



### 8.1.2 TEST PROCEDURE

- a. The EUT was 0.8 meters from the horizontal ground plane and 0.4 meters from the vertical ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- d. LISN at least 80 cm from nearest part of EUT chassis.
- e. For the actual test configuration, please refer to the related Item –EUT Test Photos.

# Vertical Reference Ground Plane EUT 40cm EUT 80cm N Horizontal Reference Ground Plane

### 8.1.3 TEST SETUP

Note: 1.Support units were connected to second LISN.

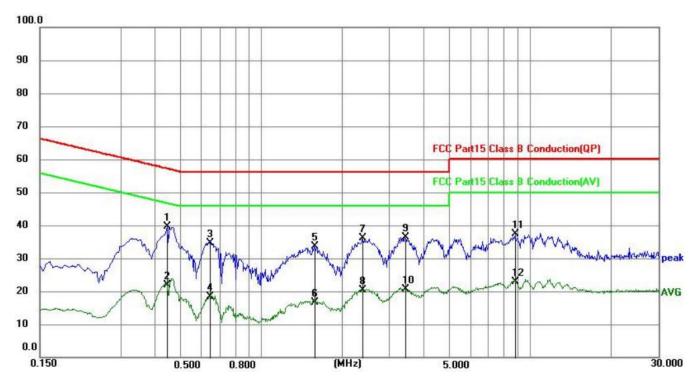
2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

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# 8.1.4 TEST RESULT

Temperature:	<b>22.1</b> ℃	Relative Humidity:	56%
Test Voltage:	DC 5V	Phase:	L
Test Mode:	802.11b(worst)		

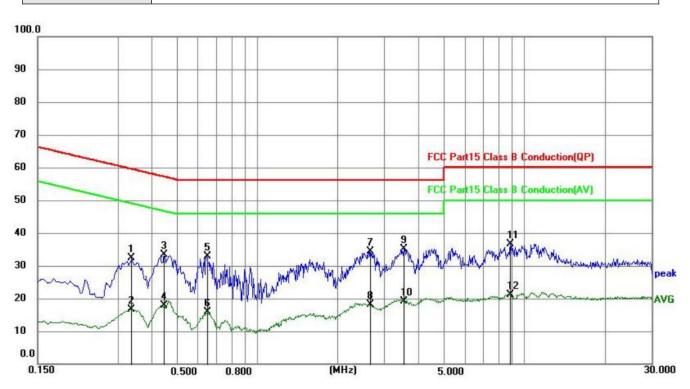


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	0.4470	29.68	9.85	39.53	56.93	17.40	QP
2	0.4470	12.11	9.85	21.96	46.93	24.97	AVG
3	0.6405	24.80	9.88	34.68	56.00	21.32	QP
4	0.6405	8.61	9.88	18.49	46.00	27.51	AVG
5	1.5765	20.86	12.81	33.67	56.00	22.33	QP
6	1.5765	3.78	12.81	16.59	46.00	29.41	AVG
7	2.3820	20.52	15.58	36.10	56.00	19.90	QP
8	2.3820	4.73	15.58	20.31	46.00	25.69	AVG
9	3.4215	19.17	17.31	36.48	56.00	19.52	QP
10	3.4215	3.25	17.31	20.56	46.00	25.44	AVG
11	8.7855	17.26	20.00	37.26	60.00	22.74	QP
12	8.7855	2.98	20.00	22.98	50.00	27.02	AVG





Temperature:	22.1 °C	Relative Humidity:	56%
Test Voltage:	120V/60HZ	Phase:	N
Test Mode:	802.11b(worst)		



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	0.3390	22.44	9.83	32.27	59.23	26.96	QP
2	0.3390	6.80	9.83	16.63	49.23	32.60	AVG
3	0.4470	23.55	9.85	33.40	56.93	23.53	QP
4	0.4470	8.10	9.85	17.95	46.93	28.98	AVG
5	0.6450	22.91	9.88	32.79	56.00	23.21	QP
6	0.6450	5.99	9.88	15.87	46.00	30.13	AVG
7	2.6430	18.40	16.03	34.43	56.00	21.57	QP
8	2.6430	2.08	16.03	18.11	46.00	27.89	AVG
9	3.5340	17.67	17.53	35.20	56.00	20.80	QP
10	3.5340	1.72	17.53	19.25	46.00	26.75	AVG
11	8.9160	16.43	20.16	36.59	60.00	23.41	QP
12	8.9160	1.09	20.16	21.25	50.00	28.75	AVG



### 9. ANTENNA REQUIREMENT

### 9.1 STANDARD REQUIREMENT

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 15.247 (b), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

### 9.2 RESULT

The antennas used for this product are PIFA antenna and other than that furnished by the responsible party shall be used with the device, the maximum peak gain of the transmit antenna is 1.0dBi.

\*\*\*\*\*\*\*END OF THE REPORT\*\*\*\*\*