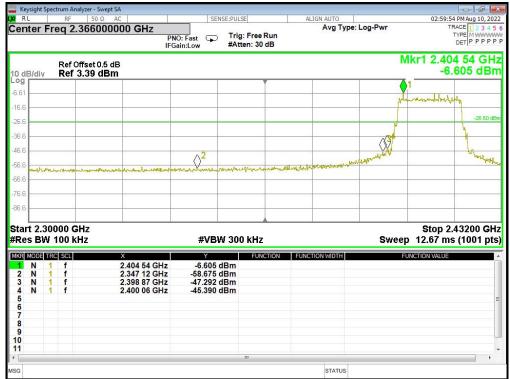


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### 802.11b High CH



# 802.11g low CH





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### 802.11g high CH



### 802.11n20 Low CH





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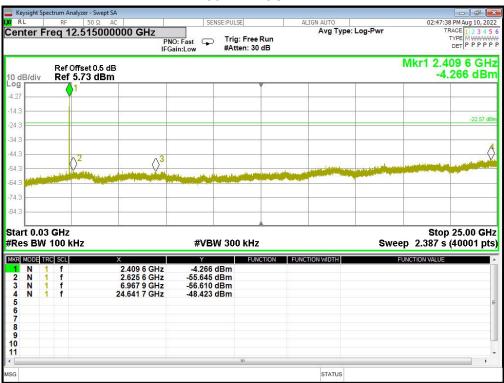
### 802.11n20 High CH





# 6.6 Spurious emissions

(802.11b) Lowest channel



30MHz-25GHz

# 802.11b Middle CH, 2437MHz

	Spectr		yzer - Swept SA									
RL	-	RF	50 Ω AC		9	SENSE:PULSE		ALIG	N AUTO Avg Type:	Lan Dum	02:5	1:14 PM Aug 10, 202 TRACE 1 2 3 4 5
enter	Fre	q 12.	.5150000		PNO: Fast G FGain:Low	⊃ Trig: F #Atten	ree Run 30 dB		Avg Type	Log-Pwr		TYPE M WWW DET P P P P
0 dB/div			fset 0.5 dB . <b>79 dBm</b>									.434 0 GH 7.214 dBr
.og 7.21		<b>1</b>					Y					
17.2				Q								-23.48 dE
27.2				8								
37.2			21	-						1		(∆ <sup>4</sup>
47.2 57.2		$\langle \rangle$	2	$\langle \rangle^3$					ALCONTRACTOR DE		less and second shift and	
7.2	diget last		Ale and a second s								20.	
7.2				0						3	-	
37.2				0							8	
tart 0.0 Res Bl			z		#VI	300 k	Hz			Swe	Sto ep 2.387	op 25.00 GH s (40001 pt
KR MODE	TRC	SCL f		× 2.434 0 GHz	Y	4 dBm	FUNCTION	FUNCTIO	ON WIDTH		FUNCTION VALU	JE
2 N	1	f		2.671 8 GHz	-56.25	7 dBm						
3 N 4 N 5	1	f f	3	5.838 6 GHz 24.267 8 GHz		4 dBm 1 dBm						
5 6 7												
7 8 9												
0												
						III						•
з									STATUS			



# 802.11b High CH, 2462MHz 30MHz-25GHz



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

	ght Sp		Analyzer - Sw							
RL			F 50 Ω		SENSE:PU	LSE	ALIGN AUTO			PM Aug 10, 20
ente	er F	req	12.5150	DOOOOO GHz PNC IFGa		g: Free Run tten: 30 dB	Avg Typ	e: Log-Pwr		ACE 1 2 3 4 5 TYPE MWWW DET P P P P
) dB/	div		of Offset 0.9 1.88 c						Mkr1 2.4 -11.	07 8 GH 881 dBr
0g 1.9			<b>1</b>							
1.9					1					-22.57 0
1.9 —										
.9 -			12	∧3						
.9 -	والمعادرية	الأرجبيا	Republic		وساده والمروافين والمراجع	يعمراه فجرعدادي	Alasta and a state of the second state of the			
.9	and shares	and the second								
.9 -										
1.9 -									8	¢.
art Res			iz i kHz		#VBW 30	0 kHz		Swe	Stop ep 2.387 s	25.00 Gi (40001 pi
	DDE T			X	Y	FUNCTION	FUNCTION WIDTH		FUNCTION VALUE	
1 N 2 N 3 N	1	f		2.407 8 GHz 2.522 6 GHz 5.286 2 GHz	-11.881 dBm -56.084 dBm -56.904 dBm					
4 N 5	1	f		24.498 7 GHz	-48.431 dBm					
5 7 3										
5										
1						m				



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



# 802.11g High CH, 2462MHz 30MHz-25GHz

	t Spect		alyzer - Swept							
RL	_	RF		AC	SENSE:PUL	SE	ALIGN AUTO			2 PM Aug 10, 20
enter	Fre	eq 12	2.51500	10000 GHz PN IFG		g: Free Run ten: 30 dB	Avg Type:	Log-Pwr		RACE 1 2 3 4 TYPE MWWW DET P P P P
dB/di			)ffset 0.5 d - <b>4.03 dB</b>						Mkr1 2.4 -14.	66 4 GH 026 dB
			1							
.0		-								-24.10 (
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.0	and the de	And	al de la companya de		Notestale and states					
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.0		~								
.0										
art 0. les B			Hz		#VBW 30	0 kHz		Swe	Stop ep 2.387 s	25.00 GI (40001 p
R MOD	E TRC			Х	Y	FUNCTION	FUNCTION WIDTH		FUNCTION VALUE	
N	1	f		2.466 4 GHz 2.659 3 GHz 5.460 4 GHz	-14.026 dBm -56.033 dBm -56.083 dBm					
N	1	f f		24.530 6 GHz	-47.937 dBm					
-						m	1 1			•
							STATUS			



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



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

	it speci		alyzer - Swept SA			an au an		1	00.47.00	
RL		RF	50 Ω AC		SEN	SE:PULSE	ALIGN AUTO	e: Log-Pwr		PM Aug 10, 20
nter	· Fre	eq 12	2.515000	PN	0: Fast 😱 ain:Low	Trig: Free Run #Atten: 30 dB	Avg Typ	e: Log-Pwr	Т	
dB/di			ffset 0.5 dB •2.37 dBm						Mkr1 2.44 -12.3	5 8 GH
		0	1							
.4										-23.48 d
4		_								
4		_	\ <mark>2</mark>							
4 —		(	∑ <sup>∠</sup>			المراجع المراجع المراجع		In a construction of an in		
4			and the second second					10 MIL		
4		-								
4										
.4										
art 0 tes E		GHz 00 k	Hz		#VBV	V 300 kHz		Swe	Stop: ep 2.387 s (	25.00 GI 40001 p
-	ETRC	_		2.445 8 GHz	-12.372 c	FUNCTION	FUNCTION WIDTH	ł	UNCTION VALUE	
NNN	1	f		2.708 0 GHz	-56.697 0	lBm				
N	1	f		6.839 3 GHz 24.695 4 GHz	-56.795 c					
						m				



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



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



# 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	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)

	(dBuV/r	m) (at 3M)
FREQUENCY (MHz)	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
Stort/Stop Frequency	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:

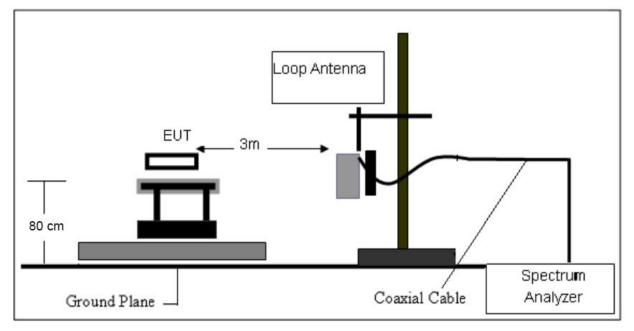
Both horizontal and vertical antenna polarities were tested

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

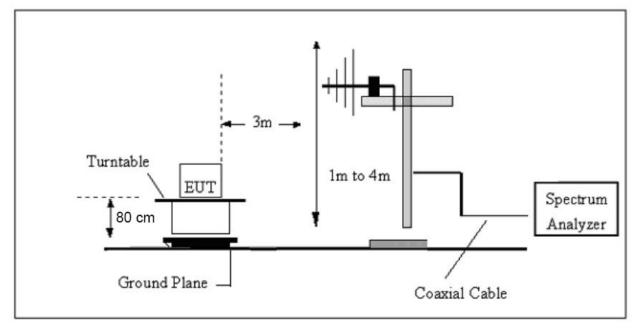


# 7.3 TESTSETUP

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



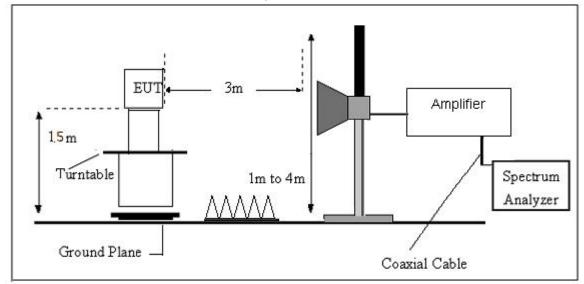
# (B) Radiated Emission Test-Up Frequency 30MHz~1GHz





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# (C) Radiated Emission Test-Up Frequency Above 1GHz



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## 7.4. TEST RESULTS

(9KHz-30MHz)

Temperature:	22.7°C	Relative Humidity:	61%
Test Voltage:	DC 3.7V	Test Mode:	802.11b

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

empe	erature:	24.7°C		Relative I	Humidity:	61%	
est V	oltage:	DC 3.7V		Phase:		Horizontal	
est M	lode:	802.11b(wo	rst)				
80.0 d	lBu¥/m	(	17 - 55 19 - 51		10. P		
						8522	nit1: — argin: —
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							r i
		Ē					<u>\$</u>
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30					3 X	1 1 <del>5</del> 1	line pour line
1	Ŷ			1 C	11. Ad	1. In she bole will my	det is
	1			1 1 1 101	Mullipher Mary	Mary War Winds and	
Marry	hoursons	mortugale	2	hunderly weeks	veronterther man w	- Ward and a start of the	
Man	hourses	man	word marker will provide a	June Markathar	we with the work water		
Mard	Management	norte the forther the second	with add provider	In a hard of the set of	whether when we		
Mand	Uningenerative	man and a second and	with add provider	de mar de stand oppendet de la serie de	wheeler hand		
20	Uningenerative						
	40 50	60 70 80	MH		300 40		700 1000.000
20	40 50						
30.000		60 70 80	(MH	lz)	300 40	)0 500 600	700 1000.00
30.000	Frequency	60 70 80 Reading	(MH Correct	<sup>iz)</sup> Result	300 40	0 500 600 Margin	700 1000.00
0 30.000 No.	Frequency (MHz)	60 70 80 Reading (dBuV)	(MH Correct Factor(dB/m)	Result (dBuV/m)	300 40	00 500 600 Margin (dB)	700 1000.00 Remark
0 30.000 No.	Frequency (MHz) 34.3964	60 70 80 Reading (dBuV) 37.30	(MH Correct Factor(dB/m) - 15.86	Result (dBuV/m) 21.44	300 40 Limit (dBuV/m) 40.00	00 500 600 Margin (dB) - 18.56	700 1000.00 Remark QP
0 30.000 No. 1 2	Frequency           (MHz)           34.3964           109.4116	60 70 80 Reading (dBuV) 37.30 30.81	(MH Correct Factor(dB/m) - 15.86 - 16.96	Result (dBuV/m) 21.44 13.85	300 40 Limit (dBuV/m) 40.00 43.50	00 500 600 Margin (dB) - 18.56 -29.65	700 1000.00 Remark QP QP
no 30.000 No. 1 2 3	Frequency (MHz) 34.3964 109.4116 280.0237	60 70 80 Reading (dBuV) 37.30 30.81 42.95	(MH Correct Factor(dB/m) - 15.86 - 16.96 - 14.35	Result (dBuV/m) 21.44 13.85 28.60	300 40 Limit (dBuV/m) 40.00 43.50 46.00	00 500 600 Margin (dB) - 18.56 -29.65 - 17.40	700 1000.00 Remark QP QP QP 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 3.7V	Phase:	Vertical
Test Mode:	802.11b(worst)		

						Lim Ma	it1: —
30 1 1 1	Managhagawahar	mMumu	monthum with Annumenter	derdonal MM	* Jammar Musil d		<u>, 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000</u>
0	40 50	60 70 80	(МН	z)	300 400	500 600	700 1000.00
	40 50 Frequency	60 70 80 Reading	(MH Correct	<sup>z)</sup> Result	300 400 Limit	500 600 Margin	700 1000.00 Remark
30.000	3 - 1993 - 1983 1	(1886) (260 (1888)	94.633		CASITI 10	<u></u>	
30.000	Frequency	Reading	Correct	Result	Limit	Margin	
30.000 No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
30.000 No.	Frequency           (MHz)           33.4450	Reading (dBuV) 39.53	Correct Factor(dB/m) - 15.25	Result (dBuV/m) 24.28	Limit (dBuV/m) 40.00	Margin (dB) - 15.72	Remark QP
30.000 No. 1 2	Frequency           (MHz)           33.4450           114.5146	Reading           (dBuV)           39.53           45.84	Correct Factor(dB/m) - 15.25 - 18. 17	Result           (dBuV/m)           24.28           27.67	Limit (dBuV/m) 40.00 43.50	Margin (dB) - 15.72 - 15.83	Remark QP QP
30.000 No. 1 2 3	Frequency         (MHz)         33.4450         114.5146         209.3130	Reading           (dBuV)           39.53           45.84           44.31	Correct Factor(dB/m) - 15.25 - 18. 17 - 15.45	Result           (dBuV/m)           24.28           27.67           28.86	Limit (dBuV/m) 40.00 43.50 43.50	Margin (dB) - 15.72 - 15.83 - 14.64	Remark QP QP 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.



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

Peak value:			002	.110(000151)	J-LOW			
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)	po <b>l</b> arization
4824.00	36.26	31.79	8.62	32.10	44.57	74.00	-29.43	Vertical
7236.00	31.67	36.19	11.68	31.97	47.57	74.00	-26.43	Vertica
9648.00	30.89	38.07	14.16	31.56	51.56	74.00	-22.44	Vertica
12060.00	*					74.00		Vertica
14472.00	*					74.00		Vertica
16884.00	*					74.00		Vertica
4824.00	35.56	31.79	8.62	32.10	43.87	74.00	-30.13	Horizontal
7236.00	31.74	36.19	11.68	31.97	47.64	74.00	-26.36	Horizontal
9648.00	30.61	38.07	14.16	31.56	51.28	74.00	-22.72	Horizontal
12060.00	*					74.00		Horizonta
14472.00	*					74.00		Horizontal
16884.00	*			.c)		74.00		Horizontal

### 802.11b(Worst)-Low

### Average value:

Frequency (MHz)	Read Leve <b>l</b> (dBuV)	Antenna Factor (dB/m)	Cab <b>l</b> e Loss (dB)	Preamp Factor (dB)	Leve <b>l</b> (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4824.00	25.66	31.79	8.62	32.10	33.97	54.00	-20.03	Vertical
7236.00	20.63	36.19	11.68	31.97	36.53	54.00	-17.47	Vertica
9648.00	21.31	38.07	14.16	31.56	41.98	54.00	<b>-</b> 12.02	Vertical
12060.00	*					54.00		Vertical
14472.00	*					54.00		Vertical
16884.00	*					54.00		Vertical
4824.00	25.31	31.79	8.62	32.10	33.62	54.00	-20.38	Horizontal
7236.00	20.39	36.19	11.68	31.97	36.29	54.00	-17.71	Horizontal
9648.00	20.42	38.07	14.16	31.56	41.09	54.00	-12.91	Horizonta
12060.00	*					54.00		Horizonta
14472.00	*					54.00		Horizonta
16884.00	*					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.



Peak value:				,				
Frequency (MHz)	Read Leve <b>l</b> (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
4874.00	40.49	31.85	8.67	32.12	48.89	74.00	-25.11	Vertica
7311.00	35.17	36.37	11.72	31.89	51.37	74.00	-22.63	Vertical
9748.00	34.80	38.35	14.25	31.62	55.78	74.00	-18.22	Vertical
12185.00	*					74.00		Vertical
14622.00	*					74.00		Vertical
17059.00	*		25			74.00		Vertical
4874.00	40.84	31.85	8.67	32.12	49.24	74.00	-24.76	Horizonta
7311.00	34.07	36.37	11.72	31.89	50.27	74.00	-23.73	Horizonta
9748.00	34.10	38.35	14.25	31.62	55.08	74.00	-18.92	Horizonta
12185.00	*					74.00		Horizonta
14622.00	*					74.00		Horizontal
17059.00	*					74.00		Horizontal

### 802.11b(Worst)-Middle

#### Average value:

Frequency (MHz)	Read Leve <b>l</b> (dBuV)	Antenna Factor (dB/m)	Cab <b>l</b> e Loss (dB)	Preamp Factor (dB)	Leve <b>l</b> (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4874.00	31.31	31.85	8.67	32.12	39.71	54.00	-14.29	Vertical
7311.00	23.47	36.37	11.72	31.89	39.67	54.00	-14.33	Vertical
9748.00	24.05	38.35	14.25	31.62	45.03	54.00	-8.97	Vertical
12185.00	*					54.00		Vertical
14622.00	*					54.00		Vertica
17059.00	*					54.00		Vertical
4874.00	30.94	31.85	8.67	32.12	39.34	54.00	-14.66	Horizontal
7311.00	23.15	36.37	11.72	31.89	39.35	54.00	-14.65	Horizonta
9748.00	23.81	38.35	14.25	31.62	44.79	54.00	-9.21	Horizonta
12185.00	*			2		54.00	8	Horizonta
14622.00	*		2			54.00	a da	Horizonta
17059.00	*					54.00		Horizonta

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.



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	39.14	31.90	8.70	32.15	47.59	74.00	-26.41	Vertica
7386.00	31.33	36.49	11.76	31.83	47.75	74.00	-26.25	Vertical
9848.00	34.43	38.62	14.31	31.77	55.59	74.00	-18.41	Vertical
12310.00	*			,		74.00		Vertical
14772.00	*					74.00		Vertical
17234.00	*					74.00		Vertical
4924.00	39.34	31.90	8.70	32.15	47.79	74.00	-26.21	Horizontal
7386.00	30.69	36.49	11.76	31.83	47.11	74.00	-26.89	Horizontal
9848.00	30.80	38.62	14.31	31.77	51.96	74.00	-22.04	Horizontal
12310.00	*					74.00		Horizonta
14772.00	*					74.00		Horizontal
17234.00	*					74.00	i.	Horizonta

### 802.11b(Worst)-High

#### Average value:

Frequency (MHz)	Read Leve <b>l</b> (dBuV)	Antenna Factor (dB/m)	Cab <b>l</b> e Loss (dB)	Preamp Factor (dB)	Leve <b>l</b> (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4924.00	30.50	31.90	8.70	32.15	38.95	54.00	-15.05	Vertica
7386.00	21.38	36.49	11.76	31.83	37.80	54.00	-16.20	Vertica
9848.00	23.04	38.62	14.31	31.77	44.20	54.00	-9.80	Vertica
12310.00	*			97		54.00	8	Vertica
14772.00	*					54.00		Vertica
17234.00	*					54.00		Vertica
4924.00	30.00	31.90	8.70	32.15	38.45	54.00	-15.55	Horizonta
7386.00	20.18	36.49	11.76	31.83	36.60	54.00	-17.40	Horizontal
9848.00	20.15	38.62	14.31	31.77	41.31	54.00	-12.69	Horizonta
12310.00	*					54.00		Horizonta
14772.00	*	1		8		54.00	8	Horizonta
17234.00	*		40	Si Si		54.00	8	Horizonta

#### 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.

1. Notes: emissions are attenuated 20dB below the limits, so it does not record. Remark:

1.Factor = Antenna Factor + Cable Loss – Pre-amplifier.

2.Scan with 802.11b, 802.11g, 802.11n (HT-20), the worst case

is 802.11b.Emission Level = Reading + FactorMargin = Limit - Emission Leve

3. The frequency emission of peak points that did not show above the forms are at least 20dB below the limit, the frequency emission is mainly from the environment noise



# 802.11 b low CH

# Peak value:

Frequency (MHz)	Read Leve <b>l</b> (dBuV)	Antenna Factor (dB/m)	Cab <b>l</b> e Loss (dB)	Preamp Factor (dB)	Leve <b>l</b> (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2390.00	48.89	27.59	5.38	34.01	47.85	74.00	-26.15	Horizontal
2400.00	54.73	27.58	5.39	34.01	53.69	74.00	-20.31	Horizontal
2390.00	47.76	27.59	5.38	34.01	46.72	74.00	-27.28	Vertical
2400.00	51.59	27.58	5.39	34.01	50.55	74.00	-23.45	Vertical

### Average value:

Frequency (MHz)	Read Leve <b>l</b> (dBuV)	Antenna Factor (dB/m)	Cab <b>l</b> e Loss (dB)	Preamp Factor (dB)	Leve <b>l</b> (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2390.00	37.90	27.59	5.38	34.01	36.86	54.00	-17.14	Horizontal
2400.00	43.82	27.58	5.39	34.01	42.78	54.00	-11.22	Horizontal
2390.00	36.12	27.59	5.38	34.01	35.08	54.00	-18.92	Vertical
2400.00	40.68	27.58	5.39	34.01	39.64	54.00	-14.36	Vertical

# 802.11 b High CH

# Peak value:

Frequency (MHz)	Read Leve <b>l</b> (dBuV)	Antenna Factor (dB/m)	Cab <b>l</b> e Loss (dB)	Preamp Factor (dB)	Leve <b>l</b> (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	48.23	27.53	5.47	33.92	47.31	74.00	-26.69	Horizontal
2500.00	45.87	27.55	5.49	29.93	48.98	74.00	-25.02	Horizontal
2483.50	47.68	27.53	5.47	33.92	46.76	74.00	<b>-</b> 27.24	Vertical
2500.00	44.05	27.55	5.49	29.93	47.16	74.00	-26.84	Vertical

### Average value:

Frequency (MHz)	Read Level (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
2483.50	37.14	27.53	5.47	33.92	36.22	54.00	<b>-</b> 17.78	Horizontal
2500.00	34.14	27.55	5.49	29.93	37.25	54.00	-16.75	Horizontal
2483.50	35.29	27.53	5.47	33.92	34.37	54.00	-19.63	Vertical
2500.00	32.40	27.55	5.49	29.93	35.51	54.00	-18.49	Vertical



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# 802.11 g Low CH

Peak value:								
Frequency (MHz)	Read Level (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
2390.00	61.94	27.59	5.38	34.01	60.90	74.00	-13.10	Horizontal
2400.00	70.56	27.58	5.39	34.01	69.52	74.00	-4.48	Horizontal
2390.00	58.19	27.59	5.38	34.01	57.15	74.00	-16.85	Vertical
2400.00	67.21	27.58	5.39	34.01	66.17	74.00	-7.83	Vertical

### Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cab <b>l</b> e Loss (dB)	Preamp Factor (dB)	Leve <b>l</b> (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2390.00	44.24	27.59	5.38	34.01	43.20	54.00	-10.80	Horizontal
2400.00	50.90	27.58	5.39	34.01	49.86	54.00	-4.14	Horizontal
2390.00	41.78	27.59	5.38	34.01	40.74	54.00	-13.26	Vertical
2400.00	47.82	27.58	5.39	34.01	46.78	54.00	-7.22	Vertical

802.11 g High CH

# Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cab <b>l</b> e Loss (dB)	Preamp Factor (dB)	Leve <b>l</b> (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	53.82	27.53	5.47	33.92	52.90	74.00	-21.10	Horizontal
2500.00	47.07	27.55	5.49	29.93	50.18	74.00	-23.82	Horizontal
2483.50	48.91	27.53	5.47	33.92	47.99	74.00	-26.01	Vertical
2500.00	45.36	27.55	5.49	29.93	48.47	74.00	-25.53	Vertical

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cab <b>l</b> e Loss (dB)	Preamp Factor (dB)	Leve <b>l</b> (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	36.70	27.53	5.47	33.92	35.78	54.00	-18.22	Horizontal
2500.00	34.80	27.55	5.49	29.93	37.91	54.00	-16.09	Horizontal
2483.50	35.25	27.53	5.47	33.92	34.33	54.00	-19.67	Vertical
2500.00	33.11	27.55	5.49	29.93	36.22	54.00	-17.78	Vertical



# 802.11 N 20 Low CH

Peak value:

Frequency (MHz)	Read Leve <b>l</b> (dBuV)	Antenna Factor (dB/m)	Cab <b>l</b> e Loss (dB)	Preamp Factor (dB)	Leve <b>l</b> (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2390.00	61.98	27.59	5.38	34.01	60.94	74.00	-13.06	Horizontal
2400.00	72.50	27.58	5.39	34.01	71.46	74.00	-2.54	Horizontal
2390.00	57.89	27.59	5.38	34.01	56.85	74.00	-17.15	Vertical
2400.00	68.39	27.58	5.39	34.01	67.35	74.00	-6.65	Vertical

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### Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cab <b>l</b> e Loss (dB)	Preamp Factor (dB)	Leve <b>l</b> (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2390.00	46.17	27.59	5.38	34.01	45.13	54.00	-8.87	Horizontal
2400.00	51.36	27.58	5.39	34.01	50.32	54.00	-3.68	Horizontal
2390.00	42.53	27.59	5.38	34.01	41.49	54.00	-12.51	Vertical
2400.00	47.69	27.58	5.39	34.01	46.65	54.00	-7.35	Vertical

### 802.11 N 20 High CH Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cab <b>l</b> e Loss (dB)	Preamp Factor (dB)	Leve <b>l</b> (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	52.73	27.53	5.47	33.92	51.81	74.00	-22.19	Horizontal
2500.00	47.15	27.55	5.49	29.93	50.26	74.00	-23.74	Horizontal
2483.50	48.88	27.53	5.47	33.92	47.96	74.00	-26.04	Vertical
2500.00	45.26	27.55	5.49	29.93	48.37	74.00	-25.63	Vertical

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cab <b>l</b> e Loss (dB)	Preamp Factor (dB)	Leve <b>l</b> (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	36.68	27.53	5.47	33.92	35.76	54.00	-18.24	Horizontal
2500.00	34.84	27.55	5.49	29.93	37.95	54.00	-16.05	Horizontal
2483.50	35.51	27.53	5.47	33.92	34.59	54.00	-19.41	Vertical
2500.00	33.13	27.55	5.49	29.93	36.24	54.00	-17.76	Vertical





# **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 Emissionlimit (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

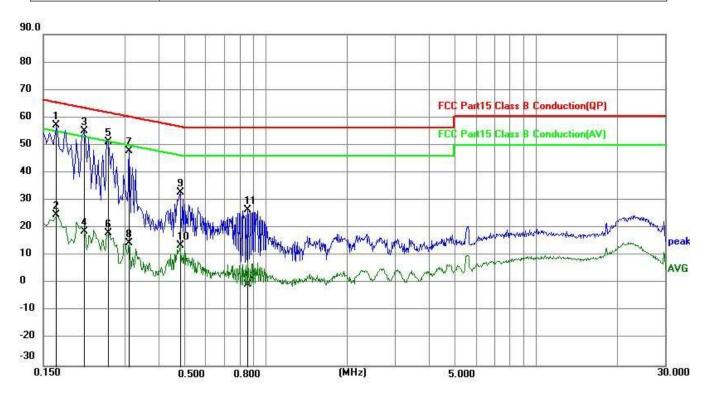
Note: 1.Support units were connected to second LISN.

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



# 8.1.4 TEST RESULT

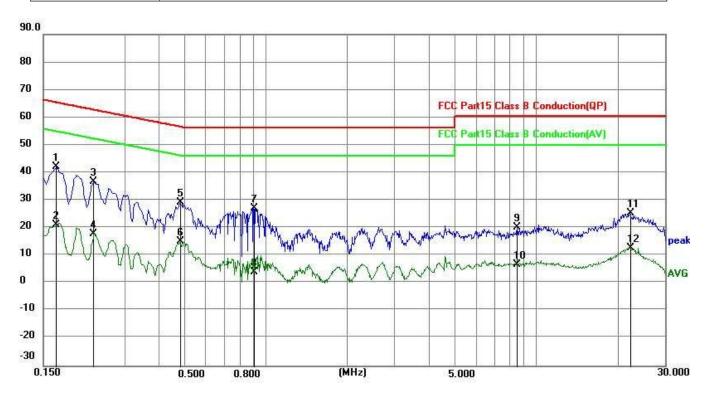
Temperature:	22.1 °C	Relative Humidity:	56%
Test Voltage:	DC 5V by adapter	Phase:	L
Test Mode:	802.11b(worst)		



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	0. 1680	47.57	9.52	57.09	65.06	7.97	QP
2	0. 1680	15.09	9.52	24.61	55.06	30.45	AVG
3	0.2130	45.52	9.53	55.05	63.09	8.04	QP
4	0.2130	9.09	9.53	18.62	53.09	34.47	AVG
5	0.2603	41.58	9.54	51. 12	61.42	10.30	QP
6	0.2603	8.63	9.54	18. 17	51.42	33.25	AVG
7	0.3120	38.21	9.54	47.75	59.92	12. 17	QP
8	0.3120	5.00	9.54	14.54	49.92	35.38	AVG
9	0.4830	23.34	9.56	32.90	56.29	23.39	QP
10	0.4830	3.99	9.56	13.55	46.29	32.74	AVG
11	0.8565	17.04	9.57	26.61	56.00	29.39	QP
12	0.8565	- 10.08	9.57	-0.51	46.00	46.51	AVG



Temperature:	22.1 °C	Relative Humidity:	56%
Test Voltage:	DC 5V by adapter	Phase:	Ν
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. 1680	32.73	9.52	42.25	65.06	22.81	QP
2	0. 1680	11.74	9.52	21.26	55.06	33.80	AVG
3	0.2310	27.25	9.53	36.78	62.41	25.63	QP
4	0.2310	8.32	9.53	17.85	52.41	34.56	AVG
5	0.4830	19.69	9.56	29.25	56.29	27.04	QP
6	0.4830	5.55	9.56	15. 11	46.29	31. 18	AVG
7	0.9015	17.58	9.57	27. 15	56.00	28.85	QP
8	0.9015	-5.61	9.57	3.96	46.00	42.04	AVG
9	8.5200	10.43	9.78	20.21	60.00	39.79	QP
10	8.5200	-2.88	9.78	6.90	50.00	43. 10	AVG
11	22.2720	15.39	9.84	25.23	60.00	34.77	QP
12	22.2720	3.00	9.84	12.84	50.00	37. 16	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 internal 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\*\*\*\*\*