

Page 31 of 54

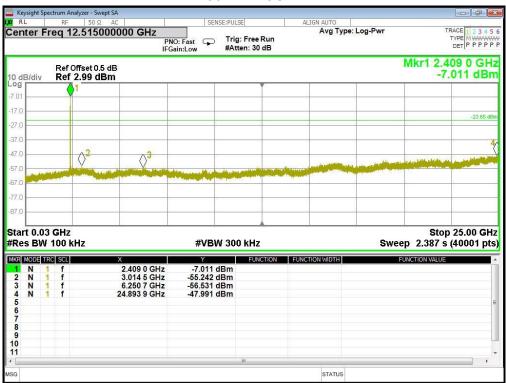
802.11n20 High CH





6.6 Spurious emissions

(802.11b) Lowest channel



30MHz-25GHz

802.11b Middle CH, 2437MHz

		Spectr		alyzer - Swept SA					
Cen		Fre	RF q 12	50 Ω AC 2.515000000 GHz		Trig: Free Run #Atten: 30 dB	ALIGN AUTO Avg Type:	Log-Pwr	TRACE 1 2 3 4 5 6 TYPE M WWWW DET P P P P F
10 dl Log	3/div			ffset 0.5 dB 2.04 dBm					Mkr1 2.437 7 GHz -7.958 dBm
-7.96			•	1					
-18.0	1								-24.77 dBm
-28.0	-								
-38.0	-			2					(*
-48.0 -58.0				$\rangle^2 = \langle \rangle^3$				A second second second second	and the second sec
-50.0	APPROX	1100 (100) 100	-				allow and the second		
-78.0			-		-				
-88.0	3		25	~				_	· · · · · · · · · · · · · · · · · · ·
Star #Re			SHz 00 k	Hz	#VBV	V 300 kHz		Swee	Stop 25.00 GHz p 2.387 s (40001 pts)
MKR		TRC	SCL	× 2.437 7 Gł	-7.958 d	FUNCTION	FUNCTION WIDTH	FL	INCTION VALUE
234	NNN	1 1 1	f f	2.437 7 Gr 2.648 7 Gr 6.039 0 Gr 24.532 4 Gr	Hz -56.064 of Hz -57.136 of	dBm dBm			
5		1		24.002 4 61	-47.520				E
678									
8 9 10									
11						m			-
MSG	_		_				STATUS		



Page 33 of 54

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

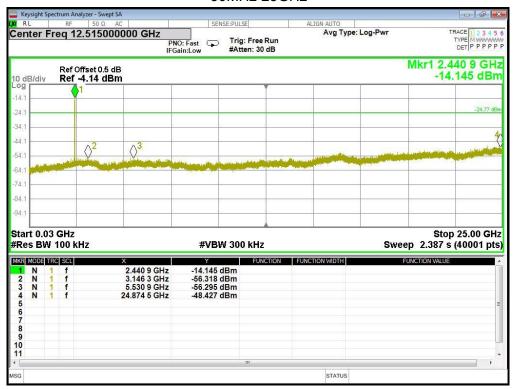


802.11g Low CH, 2412MHz 30MHz-25GHz

	ight S	Spect		nalyzer - Swept								- P
RL		_	RF	50 Ω		SE	NSE:PULSE		ALIGN AUTO			
ent	er	Fre	eq 1	2.51500	0000 GHz PN IFG	O: Fast 😱 ain:Low	Trig: Fre #Atten: 3	e Run 0 dB	Avg Type	e: Log-Pwr	12	TYPE MWWW DET P P P P
dB	/div			Offset 0.5 d -3.01 dB								416 5 GH .011 dB
				1				Ĭ.				
1.0												-23.65 6
0											2	
												1
0-				2	aabaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaa						. Carlora	
0 -		. http://	Jard			L.	A Lot of the sector of the sector	tris and a trib	The same state of the same			
0			~~~	tine of the second s	an a constitution online, with a state				10		2	
0 -			-					-				
0 -			5		-			-				
0			8		8		5				5	
L	0.0		GHz				9				Oter	- 25 00 01
			901 001	Hz		#VB	W 300 kH	z		Swe	ep 2.387 s	p 25.00 GI 6 (40001 p
		TRC	SCL		×	Y		NCTION	FUNCTION WIDTH		FUNCTION VALUE	
	N	1	f		2.416 5 GHz 3.243 0 GHz	-13.011						
	N	1	f		5.660 1 GHz	-56.119	dBm					
	N	1	f		24.528 1 GHz	-48.165	dBm					
							Ш					•
1									STATUS			



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



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

		Spect		nalyzer - Swept SA					
RL			RF	50 Ω AC	SEI	NSE:PULSE	ALIGN AUTO		70405
en	ter	Fre	eq 1	2.515000000 GHz	PNO: Fast IFGain:Low	Trig: Free Run #Atten: 30 dB	Avg Typ	e: Log-Pwr	TRACE 1 2 3 4 5 TYPE M WWWW DET P P P P F
	3/div			Offset 0.5 dB -4.01 dBm				-N	1kr1 2.462 7 GH -14.009 dBr
og				1		Y			
4.0			_		_	0			-24.71 di
4.0	2			÷					
1.0			-	\wedge^2	∧ <mark>3</mark>		1.	tra state	and a list in some state
1.0 1.0	- La Aresta	aadate	(and			ndesse die gesterne verschiefen.			
.0					and the second s				
1.0	0								
1.0	5		8	<u> </u>		<u>.</u>			
			GHz 00 I	(Hz	#VB	W 300 kHz		Sweep	Stop 25.00 Gl 2.387 s (40001 pt
RN		TRC	SCL	× 2.462 7 GH	z -14.009		FUNCTION WIDTH	FUN	ICTION VALUE
234	NNNN	1 1	f f f	2.462 7 GH 3.150 0 GH 7.229 5 GH 24.812 7 GH	z -56.023 z -56.394	dBm dBm			
5									
5									
)									
	_					m			



Page 35 of 54

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



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

		Spect		nalyzer - Swer									- F
ent		Fre	RF 9q 1	50 Ω 2.5150		NO: Fast Gain:Low	Trig: Fro #Atten:		ALI	AVg Type:	Log-Pwr		TRACE 1 2 3 4 5 TYPE MWWW DET P P P P
0 dE	3/div			Offset 0.5 -5.09 dl									.434 0 GH 5.087 dBr
og 15.1 25.1)1									-24.77 dt
35.1													6
5.1 5.1	a bia	1			$\sqrt{3}$	1		and the second	and the second				
5.1 5.1													
5.1 5.1	2		0										
			GHz 00 H	Hz		#VBI	W 300 kł	łz			Swe	St eep 2.387	op 25.00 GH s (40001 pt
1	N N	TRC 1	SCL f f		X 2.434 0 GHz 2.834 1 GHz	-15.087 -56.197	dBm	UNCTION	FUNCTI	ON WIDTH		FUNCTION VAL	JE
3 4 5	NN	1	f		5.627 6 GHz 24.327 7 GHz	-56.376 -47.785	dBm						
6 7 8 9													
D 1							m						
G										STATUS			



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)

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
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:

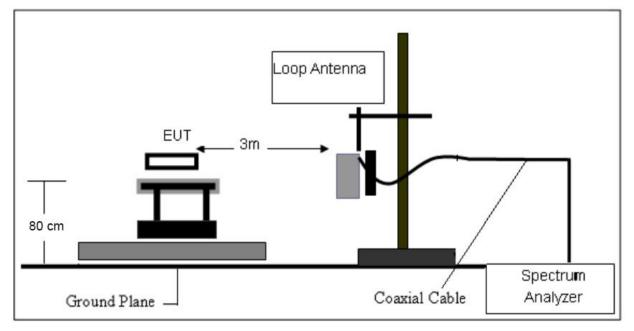
Both horizontal and vertical antenna polarities were tested

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

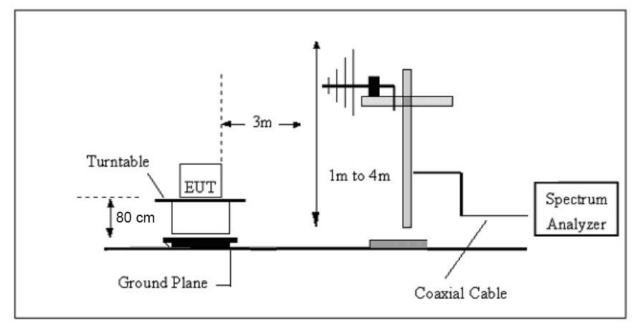


7.3 TESTSETUP

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

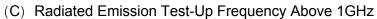


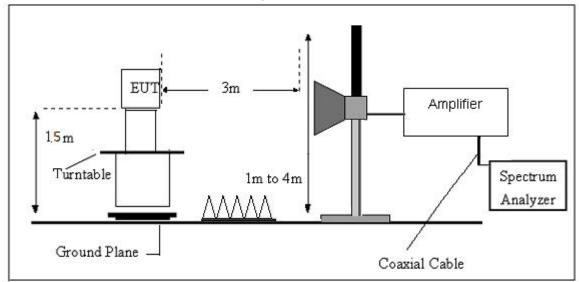
(B) Radiated Emission Test-Up Frequency 30MHz~1GHz





Page 40 of 54







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)

Гетре	erature:	24.7°C		Relative I	Humidity:	61% Horizontal		
Fest V	oltage:	DC 3.7V		Phase:				
Fest M	lode:	802.11b(wo	rst)					
30.0 d	lBu¥				1 1			
70		4 8 X		2				
io		07 03	20-15		a: 63	FCC_PART15	_B_03m_QP	
io			<u></u>			Margin -6 dD		
。					mX	* *	5 ¥	
_	1		×		Much 1			
0 Min	MAN I	5 56 	which the		Y Yurkey	MANA MAN	North Willing Markey	
o		المهر ا	when we want	H Mul	JAN M			
。	The second second	when the work of		When when the same	8			
0.0						99		
30.000	1	60.00	0	HHz)	300.00		1000.00	
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark	
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)		
1	35.8746	41.03	- 1 1. 17	29.86	40.00	- 10.14	QP	
2	143.8295	66.63	-32.26	34.37	43.50	-9. 13	QP	
3	287.9904	74.71	-32.11	42.60	46.00	-3.40	QP	
4	432.5456	75.44	-31.97	43.47	46.00	-2.53	QP	
5	601.4265	74.71	-31.76	42.95	46.00	-3.05	QP	
0								

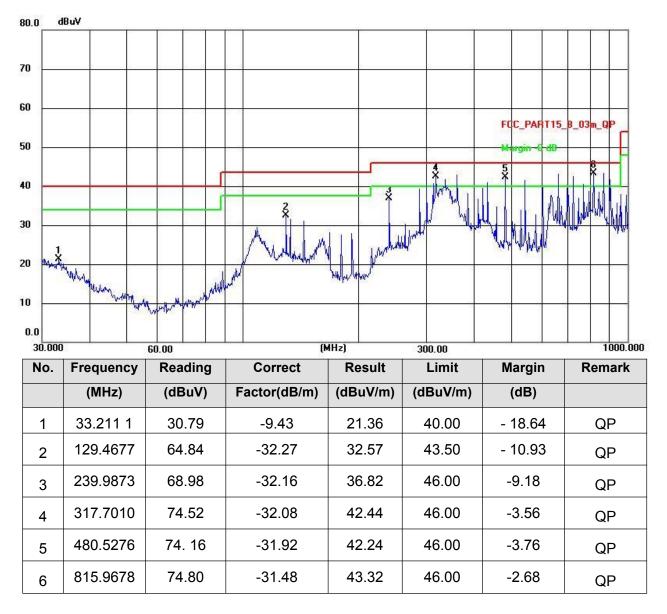
Note: 1. Margin = Result (Result = Reading + Factor)-Limit

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)		



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.



Page 44 of 54

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

Peak value:			002					
Frequency (MHz)	Read Leve l (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Leve l (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	po l 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	Vertical
12060.00	*					74.00		Vertica
14472.00	*					74.00		Vertical
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	*			5 <u>7</u>		74.00	a	Horizonta
14472.00	*			5		74.00		Horizontal
16884.00	*	2		8		74.00		Horizontal

802.11b(Worst)-Low

Average value:

Frequency (MHz)	Read Leve l (dBuV)	Antenna Factor (dB/m)	Cab l e Loss (dB)	Preamp Factor (dB)	Leve l (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	- 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 l (dBuV)	Antenna Factor (dB/m)	Cab l e Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	po l arization
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	Vertica
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	*		2			74.00		Horizonta
14622.00	*					74.00		Horizontal
17059.00	*					74.00		Horizonta

802.11b(Worst)-Middle

Average value:

Frequency (MHz)	Read Leve l (dBuV)	Antenna Factor (dB/m)	Cab l e Loss (dB)	Preamp Factor (dB)	Leve l (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	Vertica
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	*					54.00	8	Horizonta
14622.00	*					54.00	in in	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 Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Leve l (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	Vertica
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	¢	Horizonta
17234.00	*					74.00		Horizonta

802.11b(Worst)-High

Average value:

Frequency (MHz)	Read Leve l (dBuV)	Antenna Factor (dB/m)	Cab l e Loss (dB)	Preamp Factor (dB)	Leve l (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	*			92		54.00		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	*	2				54.00		Horizonta
14772.00	*	2		8		54.00		Horizonta
17234.00	*		40 40	Si Si		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.

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 l (dBuV)	Antenna Factor (dB/m)	Cab l e Loss (dB)	Preamp Factor (dB)	Leve l (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 l (dBuV)	Antenna Factor (dB/m)	Cab l e Loss (dB)	Preamp Factor (dB)	Leve l (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 l (dBuV)	Antenna Factor (dB/m)	Cab l e Loss (dB)	Preamp Factor (dB)	Leve l (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	- 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 l (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	37.14	27.53	5.47	33.92	36.22	54.00	- 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



802.11 g Low CH

Peak value:							0	
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Leve l (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 l e Loss (dB)	Preamp Factor (dB)	Leve l (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 l e Loss (dB)	Preamp Factor (dB)	Leve l (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 l e Loss (dB)	Preamp Factor (dB)	Leve l (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



Page 49 of 54

802.11 N 20 Low CH

Peak value:

Frequency (MHz)	Read Leve l (dBuV)	Antenna Factor (dB/m)	Cab l e Loss (dB)	Preamp Factor (dB)	Leve l (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Po l arization
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

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cab l e Loss (dB)	Preamp Factor (dB)	Leve l (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 l e Loss (dB)	Preamp Factor (dB)	Leve l (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 Leve l (dBuV)	Antenna Factor (dB/m)	Cab l e Loss (dB)	Preamp Factor (dB)	Leve l (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.

FREQUENCY (MHz)	Conducted Emissionlimit (dBuV)			
FREQUENCT (MIDZ)	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

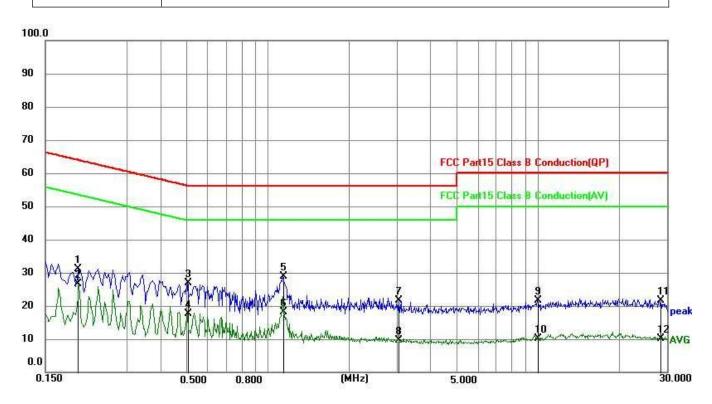
Note: 1.Support units were connected to second LISN.

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

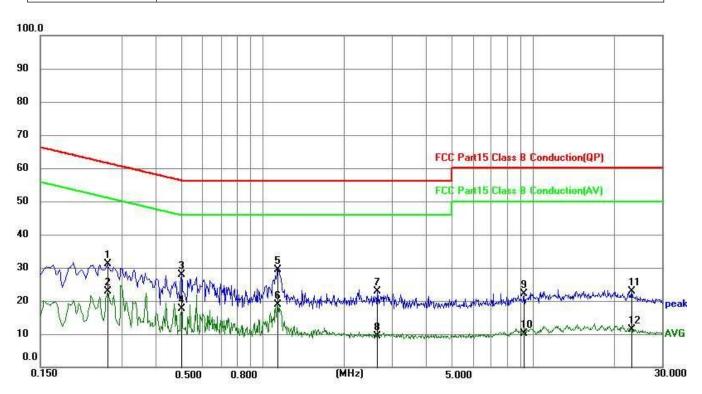
Temperature:	22.1 °C	Relative Humidity:	56%
Test Voltage:	DC 5V by adapter	Phase:	L
Test Mode:	802.11b(worst)		



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	0. 1995	21.01	10.08	31.09	63.63	32.54	QP
2	0. 1995	16.51	10.08	26.59	53.63	27.04	AVG
3	0.5055	16.82	10.02	26.84	56.00	29. 16	QP
4	0.5055	7.49	10.02	17.51	46.00	28.49	AVG
5	1. 1355	18.95	10.00	28.95	56.00	27.05	QP
6	1. 1355	8.08	10.00	18.08	46.00	27.92	AVG
7	3.0525	11.80	9.94	21.74	56.00	34.26	QP
8	3.0525	-0.31	9.94	9.63	46.00	36.37	AVG
9	9.9645	11.91	9.80	21.71	60.00	38.29	QP
10	9.9645	0.37	9.80	10. 17	50.00	39.83	AVG
11	28.5045	11.70	9.90	21.60	60.00	38.40	QP
12	28.5045	0.34	9.90	10.24	50.00	39.76	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	0.2670	21.20	10.04	31.24	61.21	29.97	QP
2	0.2670	12.95	10.04	22.99	51.21	28.22	AVG
3	0.5010	17.84	10.01	27.85	56.00	28. 15	QP
4	0.5010	7.53	10.01	17.54	46.00	28.46	AVG
5	1. 1310	19.47	9.99	29.46	56.00	26.54	QP
6	1. 1310	8.81	9.99	18.80	46.00	27.20	AVG
7	2.6610	13.01	9.95	22.96	56.00	33.04	QP
8	2.6610	-0.47	9.95	9.48	46.00	36.52	AVG
9	9.2985	12.41	9.81	22.22	60.00	37.78	QP
10	9.2985	0.24	9.81	10.05	50.00	39.95	AVG
11	23. 1675	13.01	9.99	23.00	60.00	37.00	QP
12	23. 1675	1.33	9.99	11.32	50.00	38.68	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 FPC 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 1.50dBi.