

D Ag	ilent S	Spect	rum	Analyzer -	Swept SA	i -										
LXI ℝ Cer	L nter	Fre	50 S 9 q	5.2200	000000) GHz	A	c se	INSE:I	INT	#Avg	A Type:	LIGN AUTO Log-Pwr	03:14:47F TRA	PM Aug 28, 2011 CE 1 2 3 4 5 6	Frequency
				lr	iput: RF	PNO: F IFGain:L	ast 🖵 .ow	#Atten: 3	e Ru 0 dB	n				5 001 1		Auto Tune
10 d	B/div	,	Rel	20.00	dBm								WKr2	5.221 c 1.	84 dBm	
10.0			_	and have been	-	united was a state	in the de	1	-	ALL ALL	-	Maletar	hundlint also	distant and	-	Center Freq
0.00	-		1	partr.				Let L.Me	Han I		e e prese		d at the second	NAN THE STATE	and	5.220000000 GHz
-20.0	14	MA.						~	-						T. M. MWW	Start Freg
-30.0 -40.0																5.207500000 GHz
-50.0			+									-				Stop From
-60.0 -70.0												-				5.232500000 GHz
Cer	ter	5.22	200	0 GHz			0.0514	0.0.0411					•	Span 2	25.00 MHz	CF Step
#Re	IS BI	W 1	.01	/IHZ		7	FVBW	3.U IVIMZ	_			#	sweep	500 ms	(1001 pts)	2.500000 MHz
MKH 1	N	1	f		5.217	7 425 GH	z	11.59 d	Bm	FUN	STIUN	FUNC	TION WIDTH	FUNCT	IUN VALUE	<u>Auto</u> Man
3		2	-	-	5.22	1 575 61	2	1.04 u	ып							Freq Offset
5																0 Hz
7																
10 11																
<u>12</u> мsg									_				STATUS	;		

Channel 44:

Channel 48:

🗊 Agilent	t Spect	rum	Analyzer -	Swept SA								
Cente	r Fre	50 ភ eq	5.2400	00000 G	iHz	AC SE		#Avg	ALIGN AUTO Type: Log-Pwr	03:16:31 F TRA	M Aug 28, 2011 CE 1 2 3 4 5 6 PE M M Ala Ala	Frequency
10 dB/d	liv	Ref	20.00 (рис: КР Р IF dBm	NU: Fast Gain:Low	#Atten: 3	0 dB		Mkr2	2 5.244 8 2.	er P SNNNN 375 GHz 14 dBm	Auto Tune
10.0 0.00 -10.0		NAN Y	Withingham	Jamus - J. Palita	hjørnhæfter		dip linen	with a with a with	2 hhr	LA INA AL AND AL AND AL		Center Freq 5.240000000 GHz
-20.0 -30.0 -40.0	YULI										I WINNIN	Start Freq 5.227500000 GHz
-50.0 -60.0 -70.0												Stop Freq 5.252500000 GHz
Center #Res E MKR MOD	r 5.24 BW 1	100 .0 N SC	0 GHz /IHz	× 5.237 52	#VE	3W 3.0 MHz 11.21 d	Bm	FUNCTION	#Sweep	Span 2 500 ms (25.00 MHz (1001 pts) on value	CF Step 2.500000 MHz <u>Auto</u> Man
2 N 3 4 5 6 7	2			5.244 87	'5 GHz	2.14 c	Bm					Freq Offset 0 Hz
9 10 11 12 MSG									STATU	IS		



D Agi	lent S	Spect	rum	Analyzer -	Swept SA									
Cen	ter	Fre	50 s 9	2 5.2600	00000	GHz	AC	SE	NSE:INT	#Avg 1	ALIGNAUTO ype: Log-Pwr	03:18:07 F	M Aug 28, 2011 CE 1 2 3 4 5 6	Frequency
				Ir	nput: RF	PNO: Fa IFGain:L	ast 😱 .ow	#Atten: 3	a Run)dB		Mkr2	5.260 1	ET P SNNNN	Auto Tune
10 di	B/div	(Rel	f 20.00	dBm							2.	17 dBm	
10.0 0.00	areasure			Wind walnut	wygihlannae	unidenticad	rophylowith	1 Armsthantawa	2 mu-dy	ma <mark>nlan</mark> lar dism	oglerlindofrank	When the of the	Markathan And	Center Freq 5.260000000 GHz
-20.0 -30.0 -40.0	w ^a lt	whul	49N										remarka and	Start Freq 5.247500000 GHz
-50.0 -60.0 -70.0														Stop Freq 5.272500000 GHz
Cen #Re	ter : s B\	5.20 N 1	600 .0 M	0 GHz ViHz		#	¢VBW∶	3.0 MHz			#Sweep	Span 2 500 ms i	25.00 MHz (1001 pts)	CF Step 2.500000 MHz
MKR 1	N	1	f		× 5.257	525 GH	z	11.58 d	Bm	UNCTION	FUNCTION WIDTH	FUNCTI	ON VALUE	<u>Auto</u> Man
2 3 4 5 6	N	2	t		5.260	150 GH	2	2.17 d	Bm					Freq Offset 0 Hz
7 8 9 10														
12 MSG											STATU	5		

Channel 52:

Channel 60:

🗊 Agi	ilent S	Spect	rum .	Analyzer -	Swept SA									
Cen	L Iter	Fre	50 ភ eq	5.3000	00000	GHz	AC	SEN		#Avg	ALIGNAUTO Type: Log-Pwr	03:19:39 F TRAI	M Aug 28, 2011	Frequency
10 di	B/div	,	Ref	20.00	dBm	PNO: Fast IFGain:Lov	v #	Atten: 30	dB		Mkr2	5.300 1 1.	25 GHz 54 dBm	Auto Tune
Log 10.0 0.00 -10.0	مريس	JA AN	MM	Warning	hundrath	har and a second	มี เม่าระเกาะป	fellow the gentle	2 Light de	flan, sign data,	ngalertaliteriterisentaal	Langer and the	ALUM CALL	Center Freq 5.30000000 GHz
-20.0 -30.0 -40.0	<u>U</u> MI.,	- I II -			2									Start Freq 5.287500000 GHz
-50.0 -60.0 -70.0														Stop Freq 5.312500000 GHz
Cen #Re: MXE	ter: sB\ MODE N	5.30 N/1	000 .0 N	0 GHz /IHz	× 5.297	#V 475 GHz	BW 3.	0 MHz 11.30 de	3m	UNCTION	#Sweep	Span 2 500 ms (25.00 MHz 1001 pts) IN VALUE	CF Step 2.500000 MHz <u>Auto</u> Man
2 3 4 5 6 7 8 9 10 11	N	2			5.300	125 GHz		1.54 dE	3m					Freq Offset 0 Hz
12 MSG											STATU	s		



	gilent	Spect	irum	Analyzer -	Swept SA									
Ce	nter	Fre	50 s ea	5.3200	000000 G	Hz	AC	SENSE:IN	Т	#Avg 1	ALIGNAUTO	03:21:19F	M Aug 28, 2011	Frequency
				lı	nput: RF P IF	NO: Fast C Gain:Low	Trig: #Atte	Free Run n: 30 dB				TY D	PE MM WWWW ET P S N N N N	Auto Turo
<u>10 c</u>	IB/div	v	Ref	20.00	dBm						Mkr2	5.317 4 1.	175 GHz 52 dBm	Auto Tune
10							2							Conton From
0.0			- N	No and Anton	Halana and an	and the state of t	an approximity	ro-har Manifraphi	with the state	, proposition of the	1969. Hole and a second se	W. July Market and Market	anna an	5.320000000 GHz
-10.0	MM	YAN	M.									14	HUMANNA	
-20.0) heb												1	Start Freq
-30.0	í													5.307500000 GHz
-40.0	í													
-60.0														Stop Fred
-70.0														5.332500000 GHz
Cei #Re	nter es B	5.32 W 1	200 .0 P	0 GHz /IHz		#VB	W 3.0 M	Hz			#Sweep	Span 2 500 ms (25.00 MHz (1001 pts)	CF Step 2.500000 MHz
MKR	MODE	TRC	SCL		×		Y		FUNCT	ION	FUNCTION WIDTH	FUNCTI	ON VALUE	<u>Auto</u> Man
1	N	1	f		5.317 50	10 GHz 15 GHz	<u>11.0</u> 1.5	6 dBm 2 dBm						
3														Freq Offset
5		-												0 Hz
7														
8														
10				-								-		
12														
MSG											STATU	s		

Channel 64:

Channel 100:

20 RL 50 Ω AC SENSE:INT ALIGN AUTO 03:23:10 PM Aug 28, 2011	
Center Freq 5.500000000 GHz #Avg Type: Log-Pwr hade 12 3 4 5 6	quency
Input: RF PNO: Fast Ing. free Kun Det P SNNNN IFGain:Low #Atten: 30 dB Mkr2 5.503 700 GHz A 10 dB/div Ref 20.00 dBm -0.37 dBm -0.37 dBm	Auto Tune
Log 10.0 0.00 -10.0	e nter Freq)00000 GHz
-20.0 444 44 45 5 5.48750 5 5.58750 5 5.58750 5 5.58750 5 5.58750 5 5.587500 5 5.58750 5 5.58750 5 5.587500 5 5.58750000000000000000000000000000000000	Start Freq 500000 GHz
-50.0 -60.0 -70.0	Stop Freq 300000 GHz
Center 5.50000 GHz Span 25.00 MHz #Res BW 1.0 MHz #VBW 1.0 MHz #Sweep 500 ms (1001 pts) 1 N 1 f 5.497 450 GHz 8.51 dBm	CF Step 600000 MHz Man
Image: Second	r eq Offset 0 Hz
8	



M Ag	gilent S	Spect	trum	Analyzer -	Swept SA									
uxu ⊪ Cer	nter	Fre	ک 50 qe	2 5.6000	00000	GHz	AC	SENSE:	INT	#Avg	ALIGN AUT Type: Log-Pv	10 03:24:3 Nr T	5PM Aug 28, 2011 RACE 1 2 3 4 5 6	Frequency
				lr	nput: RF	PNO: Fast IFGain:Lov	v #Att	en: 30 dE	in 3				DET P S N N N N	Auto Tune
10 d	IB/div	,	Ref	20.00	dBm						MKI	r2 5.599 -(975 GHz 0.45 dBm	
Log 10.0					and the first of		1	2			alles & mailes and			Center Freg
0.00			-	M	ritherarity and	padrick and an and	handerstand	Magnood Anti	HTMPHAMA	phinapporp	and the second states	hour for al	-	5.600000000 GHz
-10.0		high	Al.										Mallander	
-30.0		12												5.587500000 GHz
-40.0														
-60.0)													Stop Freq
-70.C	Ľ													3.012300000 GH2
Cer #Re	nter es Bl	5.60 W 1	000 .0 P	0 GHZ MHZ		#V	'BW 1.0 I	٨Hz			#Swee	Spar p 500 m	s (1001 pts)	CF Step 2 500000 MHz
	MODE	TRC 1	SCL		× 5,597	525 GHz	Y 8.	38 dBm	FUN	CTION	FUNCTION WID	TH FUN	CTION VALUE	Auto Man
2	N	2	f		5.599	975 GHz	-0.	45 dBm						FreqOffset
4 5	_											_		0 Hz
7	_													
9 10												_		
12														
MSG											STA	TUS		

Channel 120:



	gilent	Spect	rum	Analyzer - S	wept SA	-	535		15							
ι×ι Ce	_{RL} nter	Fre	50 s eq	5.7000	00000 GI	Ηz	AC	SENSE:I	VT	#Avg	ALIGN AUT Type: Log-Pv	ro 03 wr	1:25:56 P TRAC	M Aug 28, 2011	Fr	equency
				Inp	ut: RF PN IFG	IO: Fast ain:Low	#Atter	: 30 dB	1				DI	PSNNN		
10	dB/di	v	Rei	f 20.00 d	IBm						Mki	r2 5.7	00 3' 1. ما	00 GHz 41 dBm		Auto Tune
Log 10.					and the second second	Vote - No. Mar. No.	<u>_</u> 1				بمراجع وماريد					enter Freg
0.0	0		~	War and the second of the	er/wal-u-a-termytom	antalitana	life and handle to make	trune bi	ul muder	howaha	Warman Manager	with marking	Man	has	5.700	0000000 GHz
-10. -20.		Mith	W										-194	Hally apply	_	
-30.								_							5.687	Start Freq 7500000 GHz
-40.																
-60.	o							_								Stop Freq
-70.	0							-							5.712	2500000 GHz
Ce #R	nter es B	5.7 W 1	000	0 GHz VIHz		#VE	3W 1.0 M	-17			#Swee	S D 500	pan 2) ms (5.00 MHz		CF Step
MKF	MODE	TRC	SCL		X		Y		FUNC	TION	FUNCTION WIE	отн	FUNCTIO	DN VALUE	2 Auto	.500000 MHz Man
1	N N	1	f		5.697 475 5.700 300	GHz GHz	<u>8.91</u> -1.41	dBm dBm								
3																Freq Offset
0 6 7																UHZ
89																
<u>10</u> 11																
MSG				I							STA	TUS				

Product	:	WLAN MODULE
Test Item	:	Peak Excursion
Test Site	:	No.3 OATS
Test Mode	:	Mode 3: Transmitter (802.11n-40BW 30Mbps)

Chain A

Channel	Frequency	Measurement Level	Required Limit	Result
No.	(MHz)	(dB)	(dB)	itebuit
38	5190	12.320	<13	Pass
46	5230	11.640	<13	Pass
54	5270	12.510	<13	Pass
62	5310	12.130	<13	Pass
102	5510	10.610	<13	Pass
118	5590	12.510	<13	Pass
134	5670	12.890	<13	Pass

Channel 38:

D Agilent S	Spectrum	Analyzer -	Swept SA								
Center	50 Freq	Ω 5.1900	00000 G	Hz	AC SE		#Avg Typ	ALIGN AUTO e: Log-Pwr	02:59:46 P	M Aug 28, 2011 E 1 2 3 4 5 6	Frequency
10 dB(div	Re	in f 20 00 (dBm	NO: Fast G Gain:Low	#Atten: 3) dB		Mkr	2 5.189 -4.1	90 GHz	Auto Tune
10.00		ALL	with the day of the second sec	the the transmit	1 When with a way of	2	wedrus heteleyn	all through	and marked the		Center Freq 5.190000000 GHz
-20.0 -30.0 -40.0		ſ									Start Freq 5.165000000 GHz
-50.0 -60.0 -70.0											Stop Freq 5.215000000 GHz
Center #Res Bi	5.1900 N 1.0	00 GHz MHz	×	#VB	W 3.0 MHz	FL	INCTION FU	#Sweep	Span 5 500 ms (0.00 MHz 1001 pts)	CF Step 5.000000 MHz <u>Auto</u> Man
1 N 2 N 3	1 f 2 f		<u>5.185 5</u> 5.189 9	0 GHz 0 GHz	7.37 d -4.95 d	Bm Bm					Freq Offset 0 Hz
MSG								STATUS			



M RL 50 @ AC SENSE:INT ALIGNAUTO D300138PM Aug28, 2011 Frequency Center Freq 5.230000000 GHz Trig: Free Run #Avg Type: Log-Pwr TRACE Input: RF PNO: Fast Trig: Free Run #Avg Type: Log-Pwr TRACE Mkr2 5.229 60 GHz Auto Tune 10 dB/div Ref 20.00 dBm -3.52 dBm -3.52 dBm Center Freq 5.23000000 GHz -3.52 dBm
Input: RF PNO: Fast C Ing. Hee Kdin Der P SNNNN Auto Tune 10 dB/div Ref 20.00 dBm -3.52 dBm -3.52 dBm -3.52 dBm -3.00 dBm -3.00 dBm -3.52 dBm -3.00 dBm
Center Freq Center Freq 0:00
Log 1 Center Freq 10.0 <td< td=""></td<>
0.00 10.0 -20.0 -30.0 -40.0 -40.0 -20.
-20.0
-30.0
-50.0
-60.0 Stop Freq -70.0 5.25500000 GHz
Center 5.23000 GHz Span 50.00 MHz
#Res BW 1.0 MHz #VBW 3.0 MHz #Sweep 500 ms (1001 pts) CF Step 5.000000 MHz
MKR MKR MODE FINCTION FUNCTION WIDTH FUNCTION VALUE Auto Man 1 N 1 f 5.213.35 GHz 8.12 dBm Man
2 N 2 f 5.229 60 GHz -3.52 dBm 3
5 0 Hz
MSG STATUS

Channel 46:

Channel 54:

💴 Agilent Spectrum	Analyzer - Swept SA					
Center Freq	5.270000000 GHz	AC SENSE:II	NT ////////////////////////////////////	LIGNAUTO 03:03:15F : Log-Pwr TRA	M Aug 28, 2011 CE 1 2 3 4 5 6	Frequency
10 dB/div Ref	Input: RF PNO: Fass IFGain:Lov F 20.00 dBm	w #Atten: 30 dB		Mkr2 5.269 -5.	90 GHz 04 dBm	Auto Tune
10.0 0.00 -10.0	1	ultrainediturinal april 1	white here and the start with the	Continuing and	and readynamic	Center Freq 5.270000000 GHz
-20.0					PTV Bytomby	Start Freq 5.245000000 GHz
-60.0						Stop Freq 5.295000000 GHz
Center 5.2700 #Res BW 1.0 I	0 GHz MHz #V	/BW 3.0 MHz	#	Span 5 Sweep 500 ms	50.00 MHz (1001 pts)	CF Step 5.000000 MHz
MKR MODE TRC SCL 1 N 1 f 2 N 2 f	× 5.260 95 GHz 5 269 90 GHz	7.47 dBm	FUNCTION FUN	CTION WIDTH FUNCTI	ON VALUE	<u>Auto</u> Man
3 4 5 6						Freq Offset 0 Hz
7 8 9 10 11						
MSG	ļ,			STATUS		



🗊 Agilent Spectrum Analyzer - Swept SA	
Mail RL S0 Ω AC SENSE:INT ALIGNAUTO D3:04:46 PM Aug 28, 2011 Center Freq 5.310000000 GHz #Avg Type: Log-Pwr TRACE [1 2:3:4:56	Frequency
Input: RF PNO: Fast C Ing. rree Run IFGain:Low #Atten: 30 dB	Auto Tune
Mkr2 5.310 05 GHz 10 dB/div Ref 20.00 dBm -4.66 dBm _	Auto Tune
	Center Freq
0.00	5.310000000 GHz
	Otort Eror
-30.0 [197]	5.285000000 GHz
-40.0	
60.0	Stop Freq
#Res BW 1.0 MHz #VBW 3.0 MHz #Sweep 500 ms (1001 pts)	CF Step 5 000000 MHz
MKR MODE TRC SCL X Y FUNCTION WIDTH FUNCTION VALUE	<u>Auto</u> Man
2 N 2 f 5.310 40 GHz 4.66 dBm	
	Freq Offset 0 Hz
8	
MSG STATUS	

Channel 62:

Channel 102:

X RL 50 Ω AC SENSE:INT ALIGNAUTO D3:06:20PM Aug28,2011	
Center Fred 5.510000000 GHZ	Frequency
Input: RF PNO: Fast IFGS IF YE RUN IFGSIn:Low #Atten: 30 dB Mkr2 5.510 05 GHz -5.04 dBm	Auto Tune
Log 10.0 0.00 -10.0	Center Freq 5.51000000 GHz
200 300 400 500 500 500 500 500 500 500 500 5	Start Freq 5.485000000 GHz
-500 600 -70.0	Stop Freq 5.535000000 GHz
Center 5.51000 GHz Span 50.00 MHz #Res BW 1.0 MHz #VBW 1.0 MHz #Sweep 500 ms (1001 pts) IMER Mode Track Scl X Y FUNCTION WIDTH FUNCTION WIDTH FUNCTION VALUE Aut	CF Step 5.000000 MHz <u>ito</u> Man
1 N 1 f 5.504 85 GHz 5.57 dBm 2 N 2 f 5.510 05 GHz -5.04 dBm 3	Freq Offset 0 Hz



D Agi	lent S	pectru	m Anal	yzer - S	Swept S	5A												
Cen	ter	Frec	οΩ 1 5.5	5900	0000	0 GI	Hz	AC	S	ENSE:IN	1T	#Avg	Туре	LIGNAUTO	03:07:58 TR	PM Aug 28, 201: ACE 1 2 3 4 5 (6	Frequency
				Inj	put: RF	PN IFG	10: Fast Gain:Low	\mathcal{P}	#Atten: 3	e Run 0 dB	1					DET P S N N N I	Ň	
	Mkr2 5.589 90 GHz														Auto Tune			
10 de Log	B/div	R	ef 20).00 c	Bm										-/	.16 dBm		
10.0	<u> </u>		-				\bigcirc^1			-							╢	Center Freq
0.00	-		1	Wy dy table	ologipalicipali	topil for	Propagation and	on the state	Hupandola	2.4		P-stilledge	hiper-W	Interfection of the second	Manual		ł	5.59000000 GHz
-10.0		- Alexand	M													A CONTRACTOR	ľ	
-20.0	July 14	MANA	la i													Marty Hould In		Start Freq
-30.0	-															P		5.565000000 GHz
-50.0																	ŀ	
-60.0																_	ł	Stop Freq
-70.0								_		-							ł	5.615000000 GHz
Cen	ter /	5 500	00.0	Hz											Snan	50.00 MH		
#Re:	s BV	N 1.0	MH:	Z			#V	BW 1	.0 MH2	2			\$	#Sweep	500 ms	(1001 pts)		CF Step
MKB	MODE	TRC S	CL		Х				Y		FUN	CTION	FUN	CTION WIDTH	FUNC	TION VALUE	1	Auto Man
1	N	1 2	f f		5. 5.	<u>580 8</u> 589 9	5 GHz 0 GHz		<u>5.35 c</u> -7.16 c	IBm IBm							l	
3																		Freq Offset
5																		0 Hz
7																	I	
9								_									1	
11																		
12 MSG														STATU				
Mag														STATUS	,			

Channel 118:

Channel 134:

DAgilent Spect	rum Analyze	r - Swept SA		1.2									
Center Fre	50Ω eq 5.670	0000000 GHz	AC	BENSE:INT	#Avg T	ALIGNAUTO ype: Log-Pwr	03:09:35 P TRAC	M Aug 28, 2011	Frequency				
10 dB/div	Input: RI- PN0: Fast Pino:												
10.0 0.00 -10.0	and the second	spoule mil-ler printp		2 miles	ile a la caracteria de la La caracteria de la caracteria	and and an and a start of the	Mital N		Center Freq 5.670000000 GHz				
-20.0 -30.0							¥	P Mullimp	Start Freq 5.645000000 GHz				
-50.0 -60.0 -70.0									Stop Freq 5.695000000 GHz				
Center 5.6 #Res BW 1	7000 GHz .0 MHz	2 3 X 5 650 00 Ch	#VBW 1.0 MH	Z	UNCTION	#Sweep	Span 5 500 ms (0.00 MHz 1001 pts) INVALUE	CF Step 5.000000 MHz <u>Auto</u> Man				
1 N 1 2 N 2 3 4 5 6 7 7 8 9 10 11		5.669 75 GF	12 5.66 12 -7.23						Freq Offset 0 Hz				
12 MSG						STATUS							

Channel No.	Frequency (MHz)	Measurement Level (dB)	Required Limit (dB)	Result
38	5190	11.290	<13	Pass
46	5230	11.760	<13	Pass
54	5270	12.600	<13	Pass
62	5310	12.920	<13	Pass
102	5510	12.700	<13	Pass
118	5590	12.710	<13	Pass
134	5670	12.370	<13	Pass

Chain B

Channel 38:

D Agile	ent S	pectri	um An	alyzer -	Swept S	5A											
Cent	er	Free	^{50 Ω} q 5.	1900	0000)0 G	Hz	A	C S	SENSE:		#Avg	A Type:	LIGN AUTO Log-Pwr	05:11:21 TR/	PM Aug 28, 2011	Frequency
10 dB	Input: RF PNO: Fast IFGain:Low Ing: Free Kun #Atten: 30 dB Ing: Free Kun #Atten: 30 dB 10 dB/div Ref 20.00 dBm -2.55 dBm												Auto Tun				
Log 10.0 - 0.00 - -10.0 -		and the second	ALL V	and with	Athentices	Nerthon,)1 Ingelageneri	uhdul	manutula	2.	- Wil-velogent	levilianes	Hulin'y	underender	and and the		Center Fre 5.190000000 G⊦
-20.0 -30.0 -40.0 -	ph/1	eaphyl	Ϋ́													Martin Martin Martin	Start Fre 5.165000000 G⊦
-50.0 - -60.0 - -70.0 -																	Stop Fre 5.215000000 G⊦
Cent #Res	er 5 5 BV 1003	5.19 V 1. NBC 1	000 0 MH 560	GHz Iz	× 5.	180 0	#V 0 GHz	BW	3.0 MH	z dBm	FUN	CTION	# Euno	Sweep	Span 500 ms FUNCT	50.00 MHz (1001 pts) ION VALUE	CF Ste 5.000000 MH Auto Ma
2 3 4 5 6 7 8 9 10 11 12	N	2	f		5.	189 9	5 GHz		-2.55	dBm							Freq Offse
MSG														STATUS			



DAgilent Spectrum	Analyzer - Swept SA				
Center Freq	2 5.230000000 GHz	AC SENSE:INT	ALIGNAUTO #Avg Type: Log-Pwr	05:16:25 PM Aug 28, 2011 TRACE 1 2 3 4 5 6	Frequency
10 dB/div Re	Input: RF PN0: Fa IFGain:Lo	w #Atten: 30 dB	Mkr	2 5.230 25 GHz -3.12 dBm	Auto Tune
10.0 0.00 -10.0	Annu thank the state	will draw with a straw of the straw	มรา _ย นายุให้กฎการประชาการสุดๆ (จันจุโปจุปารก	and a second	Center Freq 5.230000000 GHz
-20.0				MARK PRINT PRINT	Start Freq 5.205000000 GHz
-60.0					Stop Freq 5.255000000 GHz
Center 5.2300 #Res BW 1.0 MKR MODE TRO SOL	0 GHz MHz #	VBW 3.0 MHz	#Sweep	Span 50.00 MHz 500 ms (1001 pts) FUNCTION VALUE	CF Step 5.000000 MHz Auto Man
1 N 1 f 2 N 2 f 3 - - - 4 - - - - 6 -	5.219 95 GH 5.230 25 GH	t 8.64 dBm 3.12 dBm 			Freq Offset 0 Hz
MSG			STATUS	5	

Channel 46:

Channel 54:

💴 Agilent Spectrum Analyze	r - Swept SA				
Center Freq 5.27	0000000 GHz	AC SENSE:INT	ALIGN AUTO #Avg Type: Log-Pwr	03:34:39 PM Aug 28, 2011 TRACE 1 2 3 4 5 6	Frequency
10 dB/div Ref 20.0	Input: RF PNO: Fast IFGain:Low	#Atten: 30 dB	Mkr	2 5.270 25 GHz -4.26 dBm	Auto Tune
10.0 0.00 -10.0	1 1	www.	an the the second second second	Normal Andrews	Center Freq 5.270000000 GHz
-20.0 http://www.million. -30.0				**Heller Hotel	Start Freq 5.245000000 GHz
-60.0					Stop Freq 5.295000000 GHz
Center 5.27000 GHz #Res BW 1.0 MHz	z #VBW	3.0 MHz	#Sweep	Span 50.00 MHz 500 ms (1001 pts)	CF Step 5.000000 MHz
1 N 1 f 2 N 2 f 3 - - - 4 - - - 5 - - - 6 - - - 7 - - - 8 - - - 9 - - - 10 - - - 11 - - - 12 - - -	6.259 96 GHz 6.270 25 GHz	8.34 dBm -4.26 dBm			Freq Offset 0 Hz



Channe	102.
D Agilent Spectrum Analyzer - Swept SA	
X RL 50 Ω AC SE Center Freq 5.310000000 GHz	INSE:INT ALIGNAUTO D3:36:22 PM Aug 28, 2011 Frequency #Avg Type: Log-Pwr TRACE [1 2 3 4 5 6 Frequency
Input: RF PN0: Fast 🖵 Trig: Free IFGain:Low #Atten: 3	
10 dB/div Ref 20.00 dBm	Mkr2 5.310 05 GHz -4.27 dBm
	2
-10.0	5.31000000 GHZ
-20.0	Start Freq
-40.0	
60.0	Stop Freq
-700	Shan 50 00 MHz
#Res BW 1.0 MHz #VBW 3.0 MHz	#Sweep 500 ms (1001 pts) 5.00000 MHz
MKR MODE TRC Y 1 N 1 f 5.299.85 GHz 8.65 d 2 N 2 f 5.210.05 CHz 4.27 d	FUNCTION FUNCTION WIDTH FUNCTION VALUE Auto Man
3 4 4.27 u	Freq Offset
5 6 7	0Hz
8	
MSG	STATUS

Channel 62:

Channel 102:

D Agile	nt Spe	ectrum	Analyzer -	Swept SA								
Cent	er F	50 rea	2 5 5100	00000 0	SHz	AC	SENSE:INT	#Avg [·]	ALIGNAUTO	05:27:08 P	M Aug 28, 2011	Frequency
	Input: RF PN0: Fast Trig: Free Run IFGain:Low #Atten: 30 dB DET SIN N Mkr2 5.509 90 GHZ											
10 dBi Log F	/div	Re	f 20.00	dBm	ান					-7.	08 dBm	
10.0 - 0.00 - -10.0 -			-	والمعمالية والمعمالي	brach Ballon Cloudy	a the second second	2.	يو ماهارم کنوره دو و رو	มี สุด ังสับค _{าส} ารอย่างผู้ที่หน่งหนึ่ง	Conserver 1		Center Freq 5.510000000 GHz
-20.0 - -30.0 -	WHAT	prof-spatta	ſ							1	Concilition of the	Start Freq 5.485000000 GHz
-50.0 - -60.0 - -70.0 -												Stop Freq 5.535000000 GHz
Cente #Res	er 5. BW	5100 1.0	0 GHz MHz		#VE	3W 1.0 MH	z		#Sweep	Span 5 500 ms (0.00 MHz 1001 pts)	CF Step 5.000000 MHz
	N 1	1 f		5.499	95 GHz	5.62	dBm	JNCHUN	FUNCTION WIDTH	FUNCTI	JN VALUE	<u>Auto</u> Man
3 4 5 6	N 4	2 1		5.509	90 GHZ	-7.08	abm					Freq Offset 0 Hz
7 8 9 10 11												
MSG			1						STATUS			



💴 Agilent Spectrum Analyzer	- Swept SA												
Center Freq 5 5900	000000 GHz	AC SENSE:INT	ALIGNAUTO #Avg Type: Log-Pwr	05:22:48 PM Aug 28, 2011 TRACE 1 2 3 4 5 6	Frequency								
	nput: RF PNO: Fast C IFGain:Low	➡ Trig: Free Run #Atten: 30 dB		DET P S N N N	Auto Turo								
10 dB/div Ref 20.00	Mkr2 5.590 05 GHz o dB/div Ref 20.00 dBm -6.89 dBm												
Log 10.0 0.00 -10.0	1	A shart when 2 when	and the product of th	the work of the	Center Freq 5.59000000 GHz								
-20.0 -30.0 -40.0				White and a second	Start Freq 5.565000000 GHz								
-50.0					Stop Freq 5.615000000 GHz								
Center 5.59000 GHz #Res BW 1.0 MHz	#VB	W 1.0 MHz	#Sweep	Span 50.00 MHz 500 ms (1001 pts)	CF Step 5.000000 MHz								
MKR MODE TRO SCL	× 5.580 00 GHz	5.82 dBm	FUNCTION FUNCTION WIDTH	FUNCTION VALUE	<u>Auto</u> Man								
2 N 2 T 3	5.590 05 GHZ	-6.89 dBm			Freq Offset 0 Hz								
7 8 9 10 11													
MSG			STATUS	 ;									

Channel 118:

Channel 134:

💴 Agilent Sp	ectrum	Analyzer - Swept S/	A	08					
Center F	50 s	2 5.67000000	0 GHz	AC SENSE	EINT #Avg	ALIGNAUTO Type: Log-Pwr	03:41:11 P	M Aug 28, 2011 E 1 2 3 4 5 6	Frequency
10 dB/div	Ref	Input: RF	PNO: Fast ⊂ IFGain:Low	Trig: Free R #Atten: 30 d	un B	Mkr	2 5.669 -6.1	90 GHz 04 dBm	Auto Tune
10.0 0.00 -10.0		phine and and again	1 Laws-marine	value line of r	Jama palitic lines	lay and for days to approximate	to set al		Center Freq 5.670000000 GHz
-20.0 -30.0 -40.0	for the second						¥	An M. Mart	Start Freq 5.645000000 GHz
-50.0 -60.0 -70.0									Stop Freq 5.695000000 GHz
Center 5 #Res BW	.6700 / 1.0 1 f	0 GHz VIHz	#VB	W 1.0 MHz	FUNCTION	#Sweep	Span 5 500 ms (0.00 MHz 1001 pts) NVALUE	CF Step 5.000000 MHz <u>Auto</u> Man
2 N 3 4 5 6	2 f	5.6	69 90 GHZ	-6.04 dBn	n				Freq Offset 0 Hz
10 11 12									
MSG						STATUS	3		

6. Radiated Emission

6.1. Test Equipment

The following test equipments are used during the radiated emission test:

Test Site		Equipment	Manufacturer	Model No./Serial No.	Last Cal.
Site # 3	Х	Bilog Antenna	Schaffner Chase	CBL6112B/2673	Sep., 2011
	Х	Horn Antenna	Schwarzbeck	BBHA9120D/D305	Sep., 2011
	Х	Horn Antenna	Schwarzbeck	BBHA9170/208	Jul., 2011
	Х	Pre-Amplifier	QTK	QTK-AMP-03 / 0003	May, 2011
	Х	Pre-Amplifier	QTK	AP-180C / CHM_0906076	Sep., 2011
	Х	Pre-Amplifier	MITEQ	AMF-4D-180400-45-6P/ 925975	Mar, 2011
	Х	Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2011
	Х	Test Receiver	R & S	ESCS 30/ 825442/018	Sep., 2011
	Х	Coaxial Cable	QuieTek	QTK-CABLE/ CAB5	Feb., 2011
	Х	Controller	QuieTek	QTK-CONTROLLER/ CTRL3	N/A
	X	Coaxial Switch	Anritsu	MP59B/6200265729	N/A

Note: 1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

2. The test instruments marked with "X" are used to measure the final test results.

6.2. Test Setup

Radiated Emission Below 1GHz



Radiated Emission Above 1GHz



6.3. Limits

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 20dB below the level of the fundamental or to the general radiated emission limits in paragraph 15.209, whichever is the lesser attenuation.

FCC Part 15 Subpart C Paragraph 15.209(a) Limits								
Frequency MHz	uV/m@3m	dBuV/m@3m						
30-88	100	40						
88-216	150	43.5						
216-960	200	46						
Above 960	500	54						

Remarks: E field strength $(dBuV/m) = 20 \log E$ field strength (uV/m)

6.4. Test Procedure

The EUT was setup according to ANSI C63.4, 2009 and tested according to FCC Public Notice DA 02-2138 test procedure for compliance to FCC 47CFR 15.407 requirements.

The EUT is placed on a turn table which is 0.8 meter above ground. The turn table is rotated 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

The antenna is scanned from 1 meter to 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.4:2009 on radiated measurement.

The resolution bandwidth below 1GHz setting on the field strength meter is 120 kHz and above 1GHz is 1MHz.

Radiated emission measurements below 1GHz are made using broadband Bilog antenna and above 1GHz are made using Horn Antennas.

The measurement is divided into the Preliminary Measurement and the Final Measurement. The suspected frequencies are searched for in Preliminary Measurement with the measurement antenna kept pointed at the source of the emission both in azimuth and elevation, with the polarization of the antenna oriented for maximum response. The antenna is pointed at an angle towards the source of the emission, and the EUT is rotated in both height and polarization to maximize the measured emission. The emission is kept within the illumination area of the 3 dB bandwidth of the antenna. The worst radiated emission is measured in the Open Area Test Site on the Final Measurement. The measurement frequency range form 30MHz - 10th Harmonic of fundamental was investigated.

6.5. Uncertainty

- ± 3.8 dB below 1GHz
- ± 3.9 dB above 1GHz

6.6. Test Result of Radiated Emission

Product Test Item Test Site Test Mode	 WLAN MODULE Harmonic Radiated Emission Data No.3 OATS Mode 1: Transmitter (802.11a-6Mbps) (5180MHz) 							
Frequency	Correct	Reading	Measurement	Margin	Limit			
	Factor	Level	Level					
MHz	dB	dBuV	dBuV/m	dB	dBuV/m			
Horizontal								
Peak Detector:								
10360.000	12.930	37.470	50.400	-23.600	74.000			
15540.000	*	*	*	*	74.000			
20720.000	*	*	*	*	74.000			
25900.000	*	*	*	*	74.000			
31080.000	*	*	*	*	74.000			
36260.000	*	*	*	*	74.000			
Vertical								
Peak Detector:								
10360.000	13.724	39.250	52.974	-21.026	74.000			
15540.000	*	*	*	*	74.000			
20720.000	*	*	*	*	74.000			
25900.000	*	*	*	*	74.000			
31080.000	*	*	*	*	74.000			
36260.000	*	*	*	*	74.000			

- 1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. Measurement Level = Reading Level + Correct Factor.
- 5. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.
- 7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	: WLAN MODULE							
Test Item	: Harmonic Radiated Emission Data							
Test Site	Test Site:No.3 OATSTest Mode:Mode 1: Transmitter (802.11a-6Mbps) (5220MHz)							
Test Mode								
Frequency	Correct	Reading	Measurement	Margin	Limit			
	Factor	Level	Level					
MHz	dB	dBuV	dBuV/m	dB	dBuV/m			
Horizontal								
Peak Detector:								
10440.000	13.322	37.070	50.392	-23.608	74.000			
15600.000	*	*	*	*	74.000			
20800.000	*	*	*	*	74.000			
26000.000	*	*	*	*	74.000			
31200.000	*	*	*	*	74.000			
36400.000	*	*	*	*	74.000			
Vertical								
Peak Detector:								
10440.000	14.245	39.350	53.595	-20.405	74.000			
15600.000	*	*	*	*	74.000			
20800.000	*	*	*	*	74.000			
26000.000	*	*	*	*	74.000			
31200.000	*	*	*	*	74.000			
36400.000	*	*	*	*	74.000			
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- 1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. Measurement Level = Reading Level + Correct Factor.
- 5. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.
- 7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	: WLAN MODULE							
Test Item	: Harmonic Radiated Emission Data							
Test Site	: No.3 OATS							
Test Mode	: Mode 1:	Transmitter (802	.11a-6Mbps) (5240M	Hz)				
Frequency	Correct	Reading	Measurement	Margin	Limit			
	Factor	Level	Level					
MHz	dB	dBuV	dBuV/m	dB	dBuV/m			
Horizontal								
Peak Detector:								
10480.000	13.693	38.500	52.194	-21.806	74.000			
15720.000	*	*	*	*	74.000			
20960.000	*	*	*	*	74.000			
26200.000	*	*	*	*	74.000			
31440000	*	*	*	*	74.000			
36680.000	*	*	*	*	74.000			
Vertical								
Peak Detector:								
10480.000	14.620	38.830	53.451	-20.549	74.000			
15720.000	*	*	*	*	74.000			
20960.000	*	*	*	*	74.000			
26200.000	*	*	*	*	74.000			
31440000	*	*	*	*	74.000			
36680.000	*	*	*	*	74.000			

- 1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. Measurement Level = Reading Level + Correct Factor.
- 5. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.
- 7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	: WLAN MODULE							
Test Item	: Harmonic Radiated Emission Data							
Test Site	st Site : No.3 OATS							
Test Mode	(Hz)							
Frequency	Correct	Reading	Measurement	Margin	Limit			
	Factor	Level	Level					
MHz	dB	dBuV	dBuV/m	dB	dBuV/m			
Horizontal								
Peak Detector:								
10520.000	14.015	37.300	51.315	-22.685	74.000			
15780.000	*	*	*	*	74.000			
21040.000	*	*	*	*	74.000			
26300.000	*	*	*	*	74.000			
31560.000	*	*	*	*	74.000			
36820.000	*	*	*	*	74.000			
Vertical								
Peak Detector:								
10520.000	14.818	38.990	53.808	-20.192	74.000			
15780.000	*	*	*	*	74.000			
21040.000	*	*	*	*	74.000			
26300.000	*	*	*	*	74.000			
31560.000	*	*	*	*	74.000			
36820.000	*	*	*	*	74.000			

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- 1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. Measurement Level = Reading Level + Correct Factor.
- 5. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.
- 7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	: WLAN MODULE							
Test Item	: Harmonic Radiated Emission Data							
Test Site	: No.3 OATS							
Test Mode	: Mode 1: Transmitter (802.11a-6Mbps) (5300MHz)							
Frequency	Correct	Reading	Measurement	Margin	Limit			
	Factor	Level	Level					
MHz	dB	dBuV	dBuV/m	dB	dBuV/m			
Horizontal								
Peak Detector:								
10600.000	14.550	37.260	51.809	-22.191	74.000			
15900.000	*	*	*	*	74.000			
21200.000	*	*	*	*	74.000			
26500.000	*	*	*	*	74.000			
31800.000	*	*	*	*	74.000			
37100.000	*	*	*	*	74.000			
Vertical								
Peak Detector:								
10600.000	14.881	38.560	53.441	-20.559	74.000			
15900.000	*	*	*	*	74.000			
21200.000	*	*	*	*	74.000			
26500.000	*	*	*	*	74.000			
31800.000	*	*	*	*	74.000			
37100.000	*	*	*	*	74.000			

- 1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. Measurement Level = Reading Level + Correct Factor.
- 5. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.
- 7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	: WLAN MODULE							
Test Item	: Harmonic Radiated Emission Data							
Test Site	: No.3 OATS							
Test Mode	: Mode 1: Transmitter (802.11a-6Mbps) (5320MHz)							
Frequency	Correct	Reading	Measurement	Margin	Limit			
	Factor	Level	Level					
MHz	dB	dBuV	dBuV/m	dB	dBuV/m			
Horizontal								
Peak Detector:								
10640.000	14.690	37.670	52.360	-21.640	74.000			
15960.000	*	*	*	*	74.000			
21280.000	*	*	*	*	74.000			
26600.000	*	*	*	*	74.000			
31920.000	*	*	*	*	74.000			
37240.000	*	*	*	*	74.000			
Vertical								
Peak Detector:								
10640.000	15.083	38.300	53.383	-20.617	74.000			
15960.000	*	*	*	*	74.000			
21280.000	*	*	*	*	74.000			
26600.000	*	*	*	*	74.000			
31920.000	*	*	*	*	74.000			
37240.000	*	*	*	*	74.000			
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- 1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. Measurement Level = Reading Level + Correct Factor.
- 5. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.
- 7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	: WLAN MODULE							
Test Item	: Harmonic Radiated Emission Data							
Test Site	: No.3 OATS							
Test Mode	: Mode 1: Transmitter (802.11a-6Mbps) (5500MHz)							
Frequency	Correct	Reading	Measurement	Margin	Limit			
	Factor	Level	Level					
MHz	dB	dBuV	dBuV/m	dB	dBuV/m			
Horizontal								
Peak Detector:								
10640.000	15.083	38.300	53.383	-20.617	74.000			
15960.000	*	*	*	*	74.000			
21280.000	*	*	*	*	74.000			
26600.000	*	*	*	*	74.000			
31920.000	*	*	*	*	74.000			
37240.000	*	*	*	*	74.000			
Vertical								
Peak Detector:								
11000.000	17.132	36.560	53.692	-20.308	74.000			
15960.000	*	*	*	*	74.000			
21280.000	*	*	*	*	74.000			
26600.000	*	*	*	*	74.000			
31920.000	*	*	*	*	74.000			
37240.000	*	*	*	*	74.000			

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- 1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. Measurement Level = Reading Level + Correct Factor.
- 5. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.
- 7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	: WLAN MODULE							
Test Item	: Harmonic Radiated Emission Data							
Test Site	: No.3 OATS							
Test Mode	: Mode 1: Transmitter (802.11a-6Mbps) (5600MHz)							
F	Common t	Destine	Maaaaaa	Manala	T ::4			
Frequency	Correct	Reading	Measurement	Margin	Limit			
	Factor	Level	Level	-				
MHz	dB	dBuV	dBuV/m	dB	dBuV/m			
Horizontal								
Peak Detector:								
11200.000	16.656	37.020	53.676	-20.324	74.000			
15960.000	*	*	*	*	74.000			
21280.000	*	*	*	*	74.000			
26600.000	*	*	*	*	74.000			
31920.000	*	*	*	*	74.000			
37240.000	*	*	*	*	74.000			
Vertical								
Peak Detector:								
11200.000	17.726	40.810	58.536	-15.464	74.000			
15960.000	*	*	*	*	74.000			
21280.000	*	*	*	*	74.000			
26600.000	*	*	*	*	74.000			
31920.000	*	*	*	*	74.000			
37240.000	*	*	*	*	74.000			
Vertical								
Average								
11200.000	17.726	25.520	43.246	-10.754	54.000			

- 1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. Measurement Level = Reading Level + Correct Factor.
- 5. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.
- 7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	: WLAN MODULE							
Test Item	: Harmonic Radiated Emission Data							
Test Site	: No.3 OATS							
Test Mode	: Mode 1:	Transmitter (802	.11a-6Mbps) (5700M	Hz)				
Frequency	Correct	Reading	Measurement	Margin	Limit			
	Factor	Level	Level					
MHz	dB	dBuV	dBuV/m	dB	dBuV/m			
Horizontal								
Peak Detector:								
11400.000	16.530	35.480	52.011	-21.989	74.000			
15960.000	*	*	*	*	74.000			
21280.000	*	*	*	*	74.000			
26600.000	*	*	*	*	74.000			
31920.000	*	*	*	*	74.000			
37240.000	*	*	*	*	74.000			
Vertical								
Peak Detector:								
11400.000	17.138	36.830	53.968	-20.032	74.000			
15960.000	*	*	*	*	74.000			
21280.000	*	*	*	*	74.000			
26600.000	*	*	*	*	74.000			
31920.000	*	*	*	*	74.000			
37240.000	*	*	*	*	74.000			
3.7.								

- 1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. Measurement Level = Reading Level + Correct Factor.
- 5. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.
- 7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	: WLAN MODULE							
Test Item	: Harmonic Radiated Emission Data							
Test Site	: No.3 OATS							
Test Mode	: Mode 2: Transmitter (802.11n-20BW 14.4Mbps) (5180MHz)							
Frequency	Correct	Reading	Measurement	Margin	Limit			
	Factor	Level	Level					
MHz	dB	dBuV	dBuV/m	dB	dBuV/m			
Horizontal								
Peak Detector:								
10360.000	12.930	36.790	49.720	-24.280	74.000			
15540.000	*	*	*	*	74.000			
20720.000	*	*	*	*	74.000			
25900.000	*	*	*	*	74.000			
31080.000	*	*	*	*	74.000			
36260.000	*	*	*	*	74.000			
Vertical								
Peak Detector:								
10360.000	13.724	37.240	50.964	-23.036	74.000			
15540.000	*	*	*	*	74.000			
20720.000	*	*	*	*	74.000			
25900.000	*	*	*	*	74.000			
31080.000	*	*	*	*	74.000			
36260.000	*	*	*	*	74.000			
Note:								

- 1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. Measurement Level = Reading Level + Correct Factor.
- 5. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.
- 7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	: WLAN MODULE						
Test Item	: Harmonic Radiated Emission Data						
Test Site	: No.3 OATS						
Test Mode	: Mode 2	: Transmitter (802	.11n-20BW 14.4Mbp	s) (5220MHz)			
Frequency	Correct	Reading	Measurement	Margin	Limit		
	Factor	Level	Level				
MHz	dB	dBuV	dBuV/m	dB	dBuV/m		
Horizontal							
Peak Detector:							
10440.000	13.322	36.960	50.282	-23.718	74.000		
15660.000	*	*	*	*	74.000		
20880.000	*	*	*	*	74.000		
26100.000	*	*	*	*	74.000		
31320.000	*	*	*	*	74.000		
36540.000	*	*	*	*	74.000		
Vertical							
Peak Detector:							
10440.000	14.245	38.200	52.445	-21.555	74.000		
15660.000	*	*	*	*	74.000		
20880.000	*	*	*	*	74.000		
26100.000	*	*	*	*	74.000		
31320.000	*	*	*	*	74.000		
36540.000	*	*	*	*	74.000		

- 1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. Measurement Level = Reading Level + Correct Factor.
- 5. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.
- 7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	: WLAN	MODULE					
Test Item	: Harmonic Radiated Emission Data						
Test Site	: No.3 OATS						
Test Mode	: Mode 2	: Transmitter (802	.11n-20BW 14.4Mbp	s) (5240MHz)			
Frequency	Correct	Reading	Measurement	Margin	Limit		
	Factor	Level	Level				
MHz	dB	dBuV	dBuV/m	dB	dBuV/m		
Horizontal							
Peak Detector:							
10480.000	13.693	36.180	49.874	-24.126	74.000		
15720.000	*	*	*	*	74.000		
20960.000	*	*	*	*	74.000		
26200.000	*	*	*	*	74.000		
31440.000	*	*	*	*	74.000		
36680.000	*	*	*	*	74.000		
Vertical							
Peak Detector:							
10480.000	14.620	38.350	52.971	-21.029	74.000		
15720.000	*	*	*	*	74.000		
20960.000	*	*	*	*	74.000		
26200.000	*	*	*	*	74.000		
31440.000	*	*	*	*	74.000		
36680.000	*	*	*	*	74.000		

- 1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. Measurement Level = Reading Level + Correct Factor.
- 5. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.
- 7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	: WLAN MODULE							
Test Item	: Harmonic Radiated Emission Data							
Test Site	ite : No.3 OATS Iode : Mode 2: Transmitter (802.11n-20BW 14.4Mbps) (5260MHz)							
Test Mode								
Frequency	Correct	Reading	Measurement	Margin	Limit			
	Factor	Level	Level					
MHz	dB	dBuV	dBuV/m	dB	dBuV/m			
Horizontal								
Peak Detector:								
10520.000	14.015	37.190	51.205	-22.795	74.000			
15780.000	*	*	*	*	74.000			
21040.000	*	*	*	*	74.000			
26300.000	*	*	*	*	74.000			
31560.000	*	*	*	*	74.000			
36820.000	*	*	*	*	74.000			
Vertical								
Peak Detector:								
10520.000	14.818	38.060	52.878	-21.122	74.000			
15780.000	*	*	*	*	74.000			
21040.000	*	*	*	*	74.000			
26300.000	*	*	*	*	74.000			
31560.000	*	*	*	*	74.000			
36820.000	*	*	*	*	74.000			
Note:								

- 1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. Measurement Level = Reading Level + Correct Factor.
- 5. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.
- 7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	: WLAN MODULE								
Test Item	: Harmonic Radiated Emission Data								
Test Site	: No.3 OA	: No.3 OATS							
Test Mode	e : Mode 2: Transmitter (802.11n-20BW 14.4Mbps) (5300MHz)								
Frequency	Correct	Reading	Measurement	Margin	Limit				
	Factor	Level	Level						
MHz	dB	dBuV	dBuV/m	dB	dBuV/m				
Horizontal									
Peak Detector:									
10600.000	14.550	36.140	50.689	-23.311	74.000				
15900.000	*	*	*	*	74.000				
21200.000	*	*	*	*	74.000				
26500000	*	*	*	*	74.000				
31800.000	*	*	*	*	74.000				
37100.000	*	*	*	*	74.000				
Vertical									
Peak Detector:									
10600.000	14.881	37.490	52.371	-21.629	74.000				
15900.000	*	*	*	*	74.000				
21200.000	*	*	*	*	74.000				
26500000	*	*	*	*	74.000				
31800.000	*	*	*	*	74.000				
37100.000	*	*	*	*	74.000				
Note:									

- 1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. Measurement Level = Reading Level + Correct Factor.
- 5. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.
- 7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	: WLAN MODULE								
Test Item	: Harmonic Radiated Emission Data								
Test Site	 No.3 OATS Mode 2: Transmitter (802.11n-20BW 14.4Mbps) (5320MHz) 								
Test Mode									
Frequency	Correct	Reading	Measurement	Margin	Limit				
	Factor	Level	Level						
MHz	dB	dBuV	dBuV/m	dB	dBuV/m				
Horizontal									
Peak Detector:									
10640.000	14.690	36.310	51.000	-23.000	74.000				
15960.000	*	*	*	*	74.000				
21280.000	*	*	*	*	74.000				
26600.000	*	*	*	*	74.000				
31920.000	*	*	*	*	74.000				
37240.000	*	*	*	*	74.000				
Vertical									
Peak Detector:									
10640.000	15.083	36.910	51.993	-22.007	74.000				
15960.000	*	*	*	*	74.000				
21280.000	*	*	*	*	74.000				
26600.000	*	*	*	*	74.000				
31920.000	*	*	*	*	74.000				
37240.000	*	*	*	*	74.000				
NT /									

- 1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. Measurement Level = Reading Level + Correct Factor.
- 5. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.
- 7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	: WLAN MODULE							
Test Item	: Harmonic Radiated Emission Data							
Test Site	: No.3 OATS							
Test Mode	: Mode 2: Transmitter (802.11n-20BW 14.4Mbps) (5500MHz)							
Frequency	Correct	Reading	Measurement	Margin	Limit			
	Factor	Level	Level					
MHz	dB	dBuV	dBuV/m	dB	dBuV/m			
Horizontal								
Peak Detector:								
11000.000	16.399	35.620	52.019	-21.981	74.000			
15960.000	*	*	*	*	74.000			
21280.000	*	*	*	*	74.000			
26600.000	*	*	*	*	74.000			
31920.000	*	*	*	*	74.000			
37240.000	*	*	*	*	74.000			
Vertical								
Peak Detector:								
11000.000	17.132	36.180	53.312	-20.688	74.000			
15960.000	*	*	*	*	74.000			
21280.000	*	*	*	*	74.000			
26600.000	*	*	*	*	74.000			
31920.000	*	*	*	*	74.000			
37240.000	*	*	*	*	74.000			
NT /								

- 1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. Measurement Level = Reading Level + Correct Factor.
- 5. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.
- 7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	: WLAN MODULE						
Test Item	: Harmonic Radiated Emission Data						
Test Site	: No.3 OATS e : Mode 2: Transmitter (802.11n-20BW 14.4Mbps) (5600MHz)						
Test Mode							
Frequency	Correct	Reading	Measurement	Margin	Limit		
	Factor	Level	Level				
MHz	dB	dBuV	dBuV/m	dB	dBuV/m		
Horizontal							
Peak Detector:							
11200.000	16.656	36.000	52.656	-21.344	74.000		
15960.000	*	*	*	*	74.000		
21280.000	*	*	*	*	74.000		
26600.000	*	*	*	*	74.000		
31920.000	*	*	*	*	74.000		
37240.000	*	*	*	*	74.000		
Vertical							
Peak Detector:							
11200.000	17.726	34.790	52.516	-21.484	74.000		
15960.000	*	*	*	*	74.000		
21280.000	*	*	*	*	74.000		
26600.000	*	*	*	*	74.000		
31920.000	*	*	*	*	74.000		
37240.000	*	*	*	*	74.000		
Note							

- 1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. Measurement Level = Reading Level + Correct Factor.
- 5. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.
- 7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	: WLAN MODULE							
Test Item	: Harmonic Radiated Emission Data							
Test Site	: No.3 OATS							
Test Mode	: Mode 2: Transmitter (802.11n-20BW 14.4Mbps) (5700MHz)							
Frequency	Correct	Reading	Measurement	Margin	Limit			
	Factor	Level	Level					
MHz	dB	dBuV	dBuV/m	dB	dBuV/m			
Horizontal								
Peak Detector:								
11400.000	16.530	34.650	51.181	-22.819	74.000			
15960.000	*	*	*	*	74.000			
21280.000	*	*	*	*	74.000			
26600.000	*	*	*	*	74.000			
31920.000	*	*	*	*	74.000			
37240.000	*	*	*	*	74.000			
Vertical								
Peak Detector:								
11400.000	17.138	35.580	52.718	-21.282	74.000			
15960.000	*	*	*	*	74.000			
21280.000	*	*	*	*	74.000			
26600.000	*	*	*	*	74.000			
31920.000	*	*	*	*	74.000			
37240.000	*	*	*	*	74.000			
Note								

- 1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. Measurement Level = Reading Level + Correct Factor.
- 5. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.
- 7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	: WLAN MODULE								
Test Item	: Harmonic Radiated Emission Data								
Test Site	: No.3 OATS								
Test Mode	: Mode 3: Transmitter (802.11n-40BW 30Mbps) (5190MHz)								
Frequency	Correct	Reading	Measurement	Margin	Limit				
	Factor	Level	Level						
MHz	dB	dBuV	dBuV/m	dB	dBuV/m				
Horizontal									
Peak Detector:									
10380.000	12.939	36.820	49.759	-24.241	74.000				
15570.000	*	*	*	*	74.000				
20760.000	*	*	*	*	74.000				
25950.000	*	*	*	*	74.000				
31140.000	*	*	*	*	74.000				
36330.000	*	*	*	*	74.000				
Vertical									
Peak Detector:									
10380.000	13.796	37.190	50.986	-23.014	74.000				
15570.000	*	*	*	*	74.000				
20760.000	*	*	*	*	74.000				
25950.000	*	*	*	*	74.000				
31140.000	*	*	*	*	74.000				
36330.000	*	*	*	*	74.000				
Note									

- 1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. Measurement Level = Reading Level + Correct Factor.
- 5. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.
- 7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	: WLAN MODULE							
Test Item	: Harmonic Radiated Emission Data							
Test Site	: No.3 OATS							
Test Mode	: Mode 3: Transmitter (802.11n-40BW 30Mbps) (5230MHz)							
Frequency	Correct	Reading	Measurement	Margin	Limit			
	Factor	Level	Level					
MHz	dB	dBuV	dBuV/m	dB	dBuV/m			
Horizontal								
Peak Detector:								
10460.000	13.508	36.880	50.388	-23.612	74.000			
15690.000	*	*	*	*	74.000			
20920.000	*	*	*	*	74.000			
26150.000	*	*	*	*	74.000			
31380.000	*	*	*	*	74.000			
36610.000	*	*	*	*	74.000			
Vertical								
Peak Detector:								
10460.000	14.433	36.710	51.143	-22.857	74.000			
15690.000	*	*	*	*	74.000			
20920.000	*	*	*	*	74.000			
26150.000	*	*	*	*	74.000			
31380.000	*	*	*	*	74.000			
36610.000	*	*	*	*	74.000			
NT /								

- 1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. Measurement Level = Reading Level + Correct Factor.
- 5. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.
- 7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	: WLAN MODULE							
Test Item	: Harmonic Radiated Emission Data							
Test Site	: No.3 OATS							
Test Mode	: Mode 3: Transmitter (802.11n-40BW 30Mbps) (5270MHz)							
Frequency	Correct	Reading	Measurement	Margin	Limit			
	Factor	Level	Level					
MHz	dB	dBuV	dBuV/m	dB	dBuV/m			
Horizontal								
Peak Detector:								
10540.000	14.151	36.100	50.250	-23.750	74.000			
15810.000	*	*	*	*	74.000			
21080.000	*	*	*	*	74.000			
26350.000	*	*	*	*	74.000			
31620.000	*	*	*	*	74.000			
36890.000	*	*	*	*	74.000			
Vertical								
Peak Detector:								
10540.000	14.829	36.200	51.028	-22.972	74.000			
15810.000	*	*	*	*	74.000			
21080.000	*	*	*	*	74.000			
26350.000	*	*	*	*	74.000			
31620.000	*	*	*	*	74.000			
36890.000	*	*	*	*	74.000			
NT /								

- 1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. Measurement Level = Reading Level + Correct Factor.
- 5. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.
- 7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	: WLAN MODULE							
Test Item	: Harmonic Radiated Emission Data							
Test Site	: No.3 OATS							
Test Mode	: Mode 3: Transmitter (802.11n-40BW 30Mbps) (5310MHz)							
Frequency	Correct	Reading	Measurement	Margin	Limit			
	Factor	Level	Level					
MHz	dB	dBuV	dBuV/m	dB	dBuV/m			
Horizontal								
Peak Detector:								
10620.000	14.623	35.610	50.233	-23.767	74.000			
15930.000	*	*	*	*	74.000			
21240.000	*	*	*	*	74.000			
26550.000	*	*	*	*	74.000			
31860.000	*	*	*	*	74.000			
37170.000	*	*	*	*	74.000			
Vertical								
Peak Detector:								
10620.000	14.970	35.780	50.750	-23.250	74.000			
15930.000	*	*	*	*	74.000			
21240.000	*	*	*	*	74.000			
26550.000	*	*	*	*	74.000			
31860.000	*	*	*	*	74.000			
37170.000	*	*	*	*	74.000			
NT /								

- 1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. Measurement Level = Reading Level + Correct Factor.
- 5. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.
- 7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	: WLAN MODULE							
Test Item	: Harmonic Radiated Emission Data							
Test Site	: No.3 OATS							
Test Mode	: Mode 3: Transmitter (802.11n-40BW 30Mbps) (5510MHz)							
Frequency	Correct	Reading	Measurement	Margin	Limit			
	Factor	Level	Level					
MHz	dB	dBuV	dBuV/m	dB	dBuV/m			
Horizontal								
Peak Detector:								
11020.000	16.474	35.610	52.083	-21.917	74.000			
15930.000	*	*	*	*	74.000			
21240.000	*	*	*	*	74.000			
26550.000	*	*	*	*	74.000			
31860.000	*	*	*	*	74.000			
37170.000	*	*	*	*	74.000			
Vertical								
Peak Detector:								
11020.000	17.224	36.370	53.594	-20.406	74.000			
15930.000	*	*	*	*	74.000			
21240.000	*	*	*	*	74.000			
26550.000	*	*	*	*	74.000			
31860.000	*	*	*	*	74.000			
37170.000	*	*	*	*	74.000			
Note								

- 1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. Measurement Level = Reading Level + Correct Factor.
- 5. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.
- 7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	: WLAN MODULE							
Test Item	: Harmonic Radiated Emission Data							
Test Site	: No.3 OATS							
Test Mode	: Mode 3: Transmitter (802.11n-40BW 30Mbps) (5590MHz)							
Frequency	Correct	Reading	Measurement	Margin	Limit			
	Factor	Level	Level					
MHz	dB	dBuV	dBuV/m	dB	dBuV/m			
Horizontal								
Peak Detector:								
11180.000	16.657	34.460	51.116	-22.884	74.000			
15930.000	*	*	*	*	74.000			
21240.000	*	*	*	*	74.000			
26550.000	*	*	*	*	74.000			
31860.000	*	*	*	*	74.000			
37170.000	*	*	*	*	74.000			
Vertical								
Peak Detector:								
11180.000	17.681	35.780	53.460	-20.540	74.000			
15930.000	*	*	*	*	74.000			
21240.000	*	*	*	*	74.000			
26550.000	*	*	*	*	74.000			
31860.000	*	*	*	*	74.000			
37170.000	*	*	*	*	74.000			
Note:								

- 1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. Measurement Level = Reading Level + Correct Factor.
- 5. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.
- 7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product Test Item Test Site Test Mode	 WLAN MODULE Harmonic Radiated Emission Data No.3 OATS Mode 3: Transmitter (802.11n-40BW 30Mbps) (5670MHz) 						
Frequency	Correct	Reading	Measurement	Margin	Limit		
	Factor	Level	Level				
MHz	dB	dBuV	dBuV/m	dB	dBuV/m		
Horizontal							
Peak Detector:							
11340.000	16.408	35.100	51.507	-22.493	74.000		
15930.000	*	*	*	*	74.000		
21240.000	*	*	*	*	74.000		
26550.000	*	*	*	*	74.000		
31860.000	*	*	*	*	74.000		
37170.000	*	*	*	*	74.000		
Vertical							
Peak Detector:							
11340.000	17.167	34.690	51.857	-22.143	74.000		
15930.000	*	*	*	*	74.000		
21240.000	*	*	*	*	74.000		
26550.000	*	*	*	*	74.000		
31860.000	*	*	*	*	74.000		
37170.000	*	*	*	*	74.000		
lata							

-

- 1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. Measurement Level = Reading Level + Correct Factor.
- 5. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.
- 7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	: WLAN MODULE						
Test Item	: General Radiated Emission						
Test Site	: No.3 OATS						
Test Mode	: Mode 1:	Transmitter (802.	.11a-6Mbps) (5220M	Hz)			
Frequency	Correct	Reading	Measurement	Margin	Limit		
	Factor	Level	Level				
MHz	dB	dBuV	dBuV/m	dB	dBuV/m		
Horizontal							
Peak Detector							
100.325	-7.150	45.015	37.865	-5.635	43.500		
299.175	-9.470	45.617	36.147	-9.853	46.000		
401.025	-2.810	40.335	37.525	-8.475	46.000		
602.300	2.990	32.972	35.962	-10.038	46.000		
699.300	1.890	34.941	36.831	-9.169	46.000		
844.800	3.410	34.850	38.260	-7.740	46.000		
Vertical							
Peak Detector							
66.375	-16.080	50.036	33.956	-6.044	40.000		
151.250	-9.890	49.416	39.526	-3.974	43.500		
243.400	-4.630	42.826	38.196	-7.804	46.000		
500.450	-3.140	40.093	36.953	-9.047	46.000		
677.475	0.080	37.123	37.203	-8.797	46.000		
832.675	2.550	35.669	38.219	-7.781	46.000		

- 1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. Measurement Level = Reading Level + Correct Factor.
- 5. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.
- 7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	: WLAN MODULE						
Test Item	: General Radiated Emission						
Test Site	: No.3 OATS						
Test Mode	: Mode 1:	Transmitter (802.	11a-6Mbps) (5300M	Hz)			
Frequency	Correct	Reading	Measurement	Margin	Limit		
	Factor	Level	Level				
MHz	dB	dBuV	dBuV/m	dB	dBuV/m		
Horizontal							
Peak Detector							
76.075	-12.525	44.277	31.752	-8.248	40.000		
250.675	-9.665	42.005	32.340	-13.660	46.000		
398.600	-2.900	40.756	37.856	-8.144	46.000		
507.725	-1.525	36.420	34.895	-11.105	46.000		
677.475	2.140	32.965	35.105	-10.895	46.000		
844.800	3.410	34.719	38.129	-7.871	46.000		
Vertical							
Peak Detector							
76.075	-14.455	49.440	34.985	-5.015	40.000		
224.000	-4.450	41.415	36.965	-9.035	46.000		
500.450	-3.140	38.602	35.462	-10.538	46.000		
699.300	0.200	36.162	36.362	-9.638	46.000		
832.675	2.550	34.988	37.538	-8.462	46.000		
929.675	4.545	30.369	34.914	-11.086	46.000		

- 1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. Measurement Level = Reading Level + Correct Factor.
- 5. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.
- 7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	: WLAN MODULE						
Test Item	: General Radiated Emission						
Test Site	: No.3 OATS						
Test Mode	: Mode 1:	Transmitter (802.	11a-6Mbps) (5500M	Hz)			
Frequency	Correct	Reading	Measurement	Margin	Limit		
	Factor	Level	Level				
MHz	dB	dBuV	dBuV/m	dB	dBuV/m		
Horizontal							
Peak Detector							
76.075	-12.525	44.275	31.750	-8.250	40.000		
199.750	-13.770	42.627	28.857	-14.643	43.500		
299.175	-9.470	45.756	36.286	-9.714	46.000		
401.025	-2.810	40.005	37.195	-8.805	46.000		
696.875	1.920	34.450	36.370	-9.630	46.000		
847.225	3.405	34.684	38.089	-7.911	46.000		
Vertical							
Peak Detector							
95.475	-8.660	45.455	36.795	-6.705	43.500		
151.250	-9.890	46.920	37.030	-6.470	43.500		
398.600	-3.670	35.982	32.312	-13.688	46.000		
507.725	-2.935	39.002	36.067	-9.933	46.000		
699.300	0.200	36.310	36.510	-9.490	46.000		
832.675	2.550	35.348	37.898	-8.102	46.000		

- 1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. Measurement Level = Reading Level + Correct Factor.
- 5. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.
- 7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	: WLAN	: WLAN MODULE					
Test Item	: General Radiated Emission						
Test Site	: No.3 OATS						
Test Mode	: Mode 2	: Transmitter (802.	11n-20BW 14.4Mbp	s) (5220MHz)			
Frequency	Correct	Reading	Measurement	Margin	Limit		
	Factor	Level	Level				
MHz	dB	dBuV	dBuV/m	dB	dBuV/m		
Horizontal							
Peak Detector							
100.325	-7.150	45.667	38.517	-4.983	43.500		
299.175	-9.470	44.324	34.854	-11.146	46.000		
401.025	-2.810	39.796	36.986	-9.014	46.000		
592.600	2.660	33.064	35.724	-10.276	46.000		
699.300	1.890	35.280	37.170	-8.830	46.000		
847.225	3.405	34.811	38.216	-7.784	46.000		
Vertical							
Peak Detector							
76.075	-14.455	51.117	36.662	-3.338	40.000		
209.450	-4.300	41.760	37.460	-6.040	43.500		
398.600	-3.670	37.347	33.677	-12.323	46.000		
667.775	0.030	35.888	35.918	-10.082	46.000		
832.675	2.550	34.602	37.152	-8.848	46.000		
929.675	4.545	30.374	34.919	-11.081	46.000		

- 1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. Measurement Level = Reading Level + Correct Factor.
- 5. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.
- 7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	: WLAN MODULE						
Test Item	: General Radiated Emission						
Test Site	: No.3 OATS						
Test Mode	: Mode 2:	Transmitter (802.	11n-20BW 14.4Mbp	s) (5300MHz)			
Frequency	Correct	Reading	Measurement	Margin	Limit		
	Factor	Level	Level				
MHz	dB	dBuV	dBuV/m	dB	dBuV/m		
Horizontal							
Peak Detector							
253.100	-9.650	41.313	31.663	-14.337	46.000		
401.025	-2.810	41.853	39.043	-6.957	46.000		
592.600	2.660	36.134	38.794	-7.206	46.000		
752.650	2.750	32.135	34.885	-11.115	46.000		
847.225	3.405	34.858	38.263	-7.737	46.000		
915.125	3.425	31.665	35.090	-10.910	46.000		
Vertical							
Peak Detector							
66.375	-16.080	50.469	34.389	-5.611	40.000		
151.250	-9.890	47.977	38.087	-5.413	43.500		
250.675	-4.795	37.556	32.761	-13.239	46.000		
401.025	-3.585	36.781	33.196	-12.804	46.000		
667.775	0.030	36.633	36.663	-9.337	46.000		
847.225	2.960	34.935	37.895	-8.105	46.000		

- 1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. Measurement Level = Reading Level + Correct Factor.
- 5. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.
- 7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	: WLAN MODULE						
Test Item	: General Radiated Emission						
Test Site	: No.3 OATS						
Test Mode	: Mode 2	: Transmitter (802.	11n-20BW 14.4Mbp	s) (5500MHz)			
Frequency	Correct	Reading	Measurement	Margin	Limit		
	Factor	Level	Level				
MHz	dB	dBuV	dBuV/m	dB	dBuV/m		
Horizontal							
Peak Detector							
71.225	-12.445	41.997	29.552	-10.448	40.000		
253.100	-9.650	40.215	30.565	-15.435	46.000		
401.025	-2.810	41.891	39.081	-6.919	46.000		
582.900	2.180	31.928	34.108	-11.892	46.000		
699.300	1.890	35.255	37.145	-8.855	46.000		
832.675	3.440	33.819	37.259	-8.741	46.000		
Vertical							
Peak Detector							
78.500	-14.290	48.522	34.232	-5.768	40.000		
248.250	-4.680	38.792	34.112	-11.888	46.000		
398.600	-3.670	36.852	33.182	-12.818	46.000		
585.325	-0.755	32.523	31.768	-14.232	46.000		
699.300	0.200	35.971	36.171	-9.829	46.000		
883.600	3.980	35.323	39.303	-6.697	46.000		

- 1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. Measurement Level = Reading Level + Correct Factor.
- 5. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.
- 7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	: WLAN MODULE						
Test Item	: General Radiated Emission						
Test Site	: No.3 OATS						
Test Mode	: Mode 3	: Transmitter (802.	11n-40BW 30Mbps)	(5190MHz)			
Frequency	Correct	Reading	Measurement	Margin	Limit		
	Factor	Level	Level				
MHz	dB	dBuV	dBuV/m	dB	dBuV/m		
Horizontal							
Peak Detector							
100.325	-7.150	45.426	38.276	-5.224	43.500		
299.175	-9.470	44.990	35.520	-10.480	46.000		
401.025	-2.810	41.435	38.625	-7.375	46.000		
699.300	1.890	35.816	37.706	-8.294	46.000		
832.675	3.440	32.665	36.105	-9.895	46.000		
895.725	3.280	33.138	36.418	-9.582	46.000		
Vertical							
Peak Detector							
44.550	-11.680	47.638	35.958	-4.042	40.000		
199.750	-4.270	42.891	38.621	-4.879	43.500		
398.600	-3.670	37.157	33.487	-12.513	46.000		
507.725	-2.935	38.607	35.672	-10.328	46.000		
699.300	0.200	36.006	36.206	-9.794	46.000		
890.875	4.180	34.768	38.948	-7.052	46.000		

- 1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. Measurement Level = Reading Level + Correct Factor.
- 5. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.
- 7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	: WLAN MODULE						
Test Item	: General Radiated Emission						
Test Site	: No.3 OATS						
Test Mode	: Mode 3:	Transmitter (802.	11n-40BW 30Mbps)	(5270MHz)			
Frequency	Correct	Reading	Measurement	Margin	Limit		
	Factor	Level	Level				
MHz	dB	dBuV	dBuV/m	dB	dBuV/m		
Horizontal							
Peak Detector							
100.325	-7.150	46.127	38.977	-4.523	43.500		
299.175	-9.470	45.069	35.599	-10.401	46.000		
401.025	-2.810	41.369	38.559	-7.441	46.000		
696.875	1.920	34.664	36.584	-9.416	46.000		
847.225	3.405	35.286	38.691	-7.309	46.000		
939.375	3.675	29.584	33.259	-12.741	46.000		
Vertical							
Peak Detector							
93.050	-9.550	46.030	36.480	-7.020	43.500		
197.325	-4.605	42.233	37.628	-5.872	43.500		
398.600	-3.670	36.792	33.122	-12.878	46.000		
500.450	-3.140	39.278	36.138	-9.862	46.000		
677.475	0.080	37.637	37.717	-8.283	46.000		
832.675	2.550	35.111	37.661	-8.339	46.000		

- 1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. Measurement Level = Reading Level + Correct Factor.
- 5. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.
- 7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	: WLAN MODULE										
Test Item	: General Radiated Emission										
Test Site	: No.3 OATS										
Test Mode	e : Mode 3: Transmitter (802.11n-40BW 30Mbps) (5590MHz)										
Frequency	Correct	Reading	Measurement	Margin	Limit						
	Factor	Level	Level								
MHz	dB	dBuV	dBuV/m	dB	dBuV/m						
Horizontal											
Peak Detector											
100.325	-7.150	46.338	39.188	-4.312	43.500						
398.600	-2.900	41.221	38.321	-7.679	46.000						
507.725	-1.525	35.014	33.489	-12.511	46.000						
696.875	1.920	31.596	33.516	-12.484 -13.305	46.000						
844.800	3.410	29.285	32.695		46.000						
924.825	3.525	29.783	33.308	-12.692	46.000						
Vertical											
Peak Detector											
54.250	-16.860	50.417	33.557	-6.443	40.000						
151.250	-9.890	49.580	39.690	-3.810	43.500						
243.400	-4.630	41.880	37.250	-8.750	46.000						
398.600	-3.670	35.942	32.272	-13.728	46.000						
507.725	-2.935	40.684	37.749	-8.251	46.000						
747.800	0.880	36.687	37.567	-8.433	46.000						

- 1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. Measurement Level = Reading Level + Correct Factor.
- 5. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.
- 7. The emission levels of other frequencies are very lower than the limit and not show in test report.

7. Band Edge

7.1. Test Equipment

RF Conducted Measurement

The following test equipments are used during the band edge tests:

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40 / 100170	Jun, 2011
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun, 2011
Х	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2011

Note:

- 1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
- 2. The test instruments marked with "X" are used to measure the final test results.

RF Radiated Measurement:

The following test equipments are used during the band edge tests:

Test Site		Equipment	Manufacturer	Model No./Serial No.	Last Cal.
Site # 3	Bilog Antenna		Schaffner Chase	CBL6112B/2673	Sep., 2011
	Х	Horn Antenna	Schwarzbeck	BBHA9120D/D305	Sep., 2011
		Horn Antenna	Schwarzbeck	BBHA9170/208	Jul., 2011
		Pre-Amplifier	QTK	QTK-AMP-03 / 0003	May, 2011
	Х	Pre-Amplifier	QTK	AP-180C / CHM_0906076	Sep., 2011
		Pre-Amplifier	MITEQ	AMF-4D-180400-45-6P/ 925975	Mar, 2011
	Х	Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2011
		Test Receiver	R & S	ESCS 30/ 825442/018	Sep., 2011
	Х	Coaxial Cable	QuieTek	QTK-CABLE/ CAB5	Feb., 2011
	Х	Controller	QuieTek	QTK-CONTROLLER/ CTRL3	N/A
	Х	Coaxial Switch	Anritsu	MP59B/6200265729	N/A

Note:

1. All instruments are calibrated every one year.

2. The test instruments marked by "X" are used to measure the final test results.

7.2. Test Setup

RF Conducted Measurement



RF Radiated Measurement:



7.3. Limits

The provisions of Section 15.205 of this part apply to intentional radiators operating under this section.

Radiated emissions which fall in the restricted bands, as defined in Section 15.205, must also comply with the radiated emission limits specified in Section 15.209:

FCC Part 15 Subpart C Paragraph 15.209 Limits												
	Frequency MHz	uV/m @3m	dBuV/m@3m									
	30-88	100	40									
	88-216	150	43.5									
	216-960	200	46									
	Above 960	500	54									

Remarks : 1. RF Voltage $(dBuV) = 20 \log RF$ Voltage (uV)

2. In the Above Table, the tighter limit applies at the band edges.

3. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

7.4. Test Procedure

The EUT and its simulators are placed on a turn table which is 0.8 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters. The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.

Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.4:2009 on radiated measurement.

The bandwidth below 1GHz setting on the field strength meter is 120 kHz, above 1GHz are 1 MHz. The EUT was setup to ANSI C63.4, 2009; tested to DTS test procedure of Aug 2002 DA 02-2138 for compliance to FCC 47CFR Subpart E requirements.

7.5. Uncertainty

- \pm 3.8 dB below 1GHz
- ± 3.9 dB above 1GHz

7.6. Test Result of Band Edge

Product	:	WLAN MODULE
Test Item	:	Band Edge Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmitter (802.11a-6Mbps)-Channel 36

Fundamental Filed Strength

Antenna	Frequency	Reading Level	Correction Factor	Emission Level	Detector
Pole [MHz]		[dBuV] [dB/m]		[dBuV/m]	
Horizontal	5180	34.966	74.65	109.616	Peak
Horizontal	5180	34.966	60.88	95.846	Average
Vertical	5180	37.073	72.2	109.274	Peak
Vertical	5180	37.073	59.903	96.977	Average

Note: 1:Spectrum Analyzer setting:

Peak detector: RBW=1MHz, VBW=1MHz

Average detector: RBW=1MHz, VBW=10Hz

Band Edge Test Data

Antenna Pole	Test Frequency	Fundamental	Δ (dB)	Band Edge Field Strength	Requiqment Limit	Detector
	(MHz)	(dBuV/m)		(dBuV/m)	(dBuV/m)	
Horizontal	5149.5	109.616	40.55	69.066	74.000	Peak
Horizontal	5150	95.846	51.46	44.386	54.000	Average
Vertical	5149.5	109.274	40.55	68.724	74.000	Peak
Vertical	5150	96.977	51.46	45.517	54.000	Average

Note:

The Band Edge Field Strength was calculated using the Fundamental and Conducted Band Edge measurements per the Marker-Delta Method with the following formula:

Band Edge field Strength = F - Δ

F = Fundamental field Strength (Peak or Average)

 Δ = Conducted Band Edge Delta (Peak or Average)

💴 Agilent Sj	pectrum	Analyzer - Sv	wept SA						-		
Center	50 s Freq	2 5.15000	0000 GI	Hz	AC SE	NSE:INT	Avg Ty	ALIGN AUTO pe: Log-Pwr	01:25:37 P TRA	M Aug 22, 2011 E 1 2 3 4 5 6	Frequency
10 dB/div	Ref	Inpi 20.00 d	ut: RF P1 IFG Bm	IO: Fast (↓ Sain:Low	Atten: 30	dB		Mk	r3 5.14 -29.	9 5 GHz 46 dBm	Auto Tune
10.0 0.00 -10.0								/		and the second s	Center Freq 5.150000000 GHz
-20.0 -30.0 -40.0	markawa	1 styrney longer	-Land and a second	aning the state of the state	antoral a VIIIII	3-	- Andrew Mer				Start Freq 5.100000000 GHz
-50.0 -60.0 -70.0											Stop Freq 5.200000000 GHz
Center 5 #Res BV	.1500 / 1.0	0 GHz /IHz	×	#VBW	/ 1.0 MHz			#Sweep	Span 1 500 ms (00.0 MHz 1001 pts)	CF Step 10.000000 MHz Auto Man
1 N 2 N 3 N 4 5 6 7 8 9 10 11 11 12			5.183 (5.150 (5.149 (9 GHz 0 GHz 5 GHz	11.09 dl -30.66 dl -29.46 dl	3m 3m 3m					Freq Offset 0 Hz
🐉 start	C I	🕽 🛤 🥖	D Agile	ent Spectrum Ar	ia						🔇 🕵 🕑 🙆 1:25 PM

Peak Detector of conducted Band Edge Delta

DAGIENT Spectrum Analyzer	- Swept SA	an an			
M RL 50 Ω Center Freq 5.1500	000000 GHz	SENSE:INT	ALIGN AUTO Avg Type: Log-Pwr	01:24:54 PM Aug 22, 2011 TRACE 1 2 3 4 5 6	Frequency
10 dB/div Ref 20.00	nput: RF PN0: Fast () IFGain:Low	Atten: 30 dB	Mk	r3 5.150 0 GHz -51.11 dBm	Auto Tune
10.0 0.00 -10.0				⊘ ¹	Center Freq 5.150000000 GHz
-20.0 -30.0 -40.0		3			Start Fred 5.100000000 GHz
-50.0 -60.0 -70.0					Stop Fred 5.20000000 GHz
Center 5.15000 GHz #Res BW 1.0 MHz	#VBW 10) Hz	Sweep	Span 100.0 MHz 7.80 s (1001 pts)	CF Step 10.000000 MHz
MKR MODE TRC SCL 1 N 1 f 2 N 1 f	× 5.182 3 GHz 5 150 0 GHz	0.35 dBm 51 11 dBm	ON FUNCTION WIDTH	FUNCTION VALUE	<u>Auto</u> Man
3 N 1 F 4 5 6 6	5.150 0 GHz -	51.11 dBm			Freq Offset 0 Hz
7 8 9 10 11 12					
🐉 start 🔰 🦉 🛤 🔗	D Agilent Spectrum Ana				K 🕵 🛛 🗿 1:24 PM

Average Detector of conducted Band Edge Delta

:	WLAN MODULE
:	Band Edge Data
:	No.3 OATS
:	Mode 1: Transmitter (802.11a-6Mbps)-Channel 48
	:

Test Frequency	Measurement Level (20dBc)	Limit	Result
(MHz)	(MHz)	(MHz)	
5240	5249.90	<5250	PASS

NOTE: Accordance with FCC15.215 requirement.

Agiler	Agilent Spectrum Analyzer - Swept SA														
⊯ Cer	L nter	Fre	RF P	50 Ω 5.2400	AC 00000 G	Hz	Tria: Er	SENSE:IN	NT	Avg	AL Fype: L	IGN AUTO	09:02:50 F	M Sep 28, 2011	Frequency
_	PNO: Fast IFGain:Low Atten: 30 dB Mkr2 5.249 9 GHz											Auto Tune			
10 d	B/div	/	Ref	20.00 c	1Bm								-14.	92 dBm	
10.0 0.00							21	www	errory	2					Center Freq 5.240000000 GHz
-10.0			+				1	_						-15.21 dBm	
-20.0 -30.0 -40.0	to be a			- Humbridge	WARAN AN	NWW MARKING AND		-		Mar Markey	helphile of	Konnallaller	Web		Start Freq 5.190000000 GHz
-50.0 -60.0 -70.0															Stop Freq 5.290000000 GHz
Cen #Re	ter s B	5.24 W 3	100	0 GHz kHz		#VI	BW 1.0 MH	z		37/011	#\$	Sweep	Span 1 500 ms (00.0 MHz 1001 pts)	CF Step 10.000000 MHz
1	N	1	f		5.233	4 GHz	4.79	dBm	FUNI	LIUN	FUNC		FUNCTI	JN VALUE	Auto Man
2 3 4 5 6	N	1	f		5.249	9 GHz	-14.92	dBm							Freq Offset 0 Hz
7 8 9 10 11															
MSG											I	STATUS			

Product	:	WLAN MODULE
Test Item	:	Band Edge Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmitter (802.11a-6Mbps)-Channel 52

Test Frequency	Measurement Level (20dBc)	Limit	Result
(MHz)	(MHz)	(MHz)	
5260	5250.10	>5250	PASS

NOTE: Accordance with FCC15.215 requirement.

Agiler	nt Spe	ctrur	n Ana	alyzer - Swe	ept SA			ų.							
<mark>W</mark> Mar	L kor	2	RF	50 Ω		Hz	_	SENSE	:INT	Avg T	ALIG vpe: Lo	NAUTO	09:08:13F	M Sep 28, 2011	Marker
mai	NUI	L	J.2	501000	PI IFC	NO: Fast Gain:Low	Trig Att	g: Free R en: 30 dB	un 3			••••••	T) E		Select Marker
10 d	B/div	,	Ref	20.00 c	dBm							Mk	r2 5.25 -13.	0 1 GHz 98 dBm	2
Log 10.0 0.00							2	www.yo							Normal
-20.0 -30.0 -40.0				J. J.	hulant retricted and the	Will Braden Ar			V	Marine	Martin Value	AMMOND		-14.40 dBm	Delta
-50.0 -60.0 -70.0	****	And I live	en e	les/~ybindles/ wro									wpathany a hayos	diddan yn Antonia yn A	Fixed⊳
Cen #Re	nter : s B1 MODE	5.20 N 3	600 00	0 GHz kHz	×	#VI	BW 1.0 I	MHz	FUN	CTION	#S1	weep	Span ′ 500 ms	100.0 MHz (1001 pts) onvalue	Off
1 2 3 4 5 6	N	1	f		5.265 5.250	2 GHz 1 GHz	-13	. <u>60 dBn</u> .98 dBn							Properties▶
7 9 10 11															More 1 of 2
MSG												STATUS			

QuieTer

Product	:	WLAN MODULE
Test Item	:	Band Edge Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmitter (802.11a-6Mbps) -Channel 64

Fundamental Filed Strength

Antenna	Frequency	Reading Level	Correction Factor	Emission Level	Detector
Pole	[MHz]	[dB(uV)]	[dB/m]	[dB(uV/m)]	
Horizontal	5320	35.635	75.27	110.904	Peak
Horizontal	5320	35.635	63.09	98.724	Average
Vertical	5320	37.552	74.71	112.261	Peak
Vertical	5320	37.552	63.06	100.611	Average

Note: 1:Spectrum Analyzer setting:

Peak detector: RBW=1MHz, VBW=1MHz

Average detector: RBW=1MHz, VBW=10Hz

Band Edge Test Data

Antenna Pole	Test Frequency (MHz)	Fundamental (dBuV/m)	Δ (dB)	Band Edge Field Strength (dBuV/m)	Detector
Horizontal	5350.7	110.904	43.91	66.994	Peak
Horizontal	Horizontal 5350		50.76	47.964	Average
Vertical	5350.7	112.261	43.91	68.351	Peak
Vertical	5350	100.611	50.76	49.851	Average

Note:

The Band Edge Field Strength was calculated using the Fundamental and Conducted Band Edge measurements per the Marker-Delta Method with the following formula:

Band Edge field Strength = $F - \Delta$

F = Fundamental field Strength (Peak or Average)

 Δ = Conducted Band Edge Delta (Peak or Average)

Agilent Spectrum Analyzer - Swept SA			Ŭ.	
α RL 50Ω Center Freq 5.350000000 GHz		ALIGN AUTO Avg Type: Log-Pwr	03:23:48 PM Aug 22, 2011 TRACE 1 2 3 4 5 6	Frequency
Input: RF PN0: Fast IFGain:Low	Atten: 30 dB	Mk	r3 5.350 7 GHz -32.90 dBm	Auto Tune
Log 10.0 0.00 -10.0				Center Freq 5.35000000 GHz
-20.0 mmll////	3	1444- and angle webby the way searcher apro-	and the second	Start Freq 5.30000000 GHz
-50.0				Stop Freq 5.400000000 GHz
Center 5.35000 GHz #Res BW 1.0 MHz #VI	3W 1.0 MHz	#Sweep	Span 100.0 MHz 500 ms (1001 pts)	CF Step 10.000000 MHz Auto Man
MKER MADE TEC SCL X 1 N 1 f 5.324 0 GHz 2 N 1 f 5.350 0 GHz 3 1 f 5.350 7 GHz 4 5	Y FUN 11.01 dBm -36.08 dBm -32.90 dBm 	FUNCTION WIDTH		Freq Offset 0 Hz
MSG		STATU	6	

Peak Detector of conducted Band Edge Delta

Average Detector of conducted Band Edge Delta

KL 50 Ω Center Freq 5	.350000000 GHz	AC SENSE:INT	ALIGNAUTO Avg Type: Log-Pwr	03:23:08 PM Aug 22, 2011 TRACE 1 2 3 4 5 6 TYPE MWWWWW	Frequency
10 dB/div Ref 2	IFGain:Low	Atten: 30 dB	Mk	r2 5.350 0 GHz -50.47 dBm	Auto Tune
10.0 0.00	⊘ ¹				Center Freq 5.350000000 GHz
-20.0 -30.0 -40.0		2-			Start Freq 5.30000000 GHz
-60.0			~		Stop Freq 5.40000000 GHz
Center 5.35000 #Res BW 1.0 MI	GHz Hz #V	BW 10 Hz	Sweep	Span 100.0 MHz 7.80 s (1001 pts)	CF Step 10.000000 MHz
MKR MODE TRC SCL 1 N 1 f 2 N 1 f 3 - - - 4 - - - 5 - - - 6 - - - 7 - - - 8 - - - 9 - - 11 12 - - -	× 5.313 9 GHz 5.350 0 GHz	Y F 0.29 dBm -50.47 dBm	UNCTION FUNCTION WIDTH	FUNCTION VALUE	Auto Man Freq Offset 0 Hz

QuieTer

Product	:	WLAN MODULE
Test Item	:	Band Edge Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmitter (802.11a-6Mbps) -Channel 100

Fundamental Filed Strength

Antenna	Frequency	Reading Level	Correction Factor	Emission Level	Detector
Pole	[MHz]	[dB(uV)]	[dB/m]	[dB(uV/m)]	
Horizontal	5500	36.684	70.11	106.794	Peak
Horizontal	5500	36.684	58.59	95.274	Average
Vertical	5500	38.145	70.78	108.925	Peak
Vertical	5500	38.145	59.3	97.445	Average

Note: 1:Spectrum Analyzer setting:

Peak detector: RBW=1MHz, VBW=1MHz

Average detector: RBW=1MHz, VBW=10Hz

Band	Edge	Test	Data
------	------	------	------

Antenna Pole	Test Frequency	Fundamental	Δ (dB)	Band Edge Field Strength	Requiqment Limit	Detector
	(MHz)	(dBuV/m)		(dBuV/m)	(dBuV/m)	
Horizontal	5460	106.794	49.67	57.124	74.000	Peak
Horizontal	5412.8	95.274	51.71	43.564	54.000	Average
Vertical	5460	108.925	49.67	59.255	74.000	Peak
Vertical	5412.8	97.445	51.71	45.735	54.000	Average

Note:

The Band Edge Field Strength was calculated using the Fundamental and Conducted Band Edge measurements per the Marker-Delta Method with the following formula:

Band Edge field Strength = F - Δ

F = Fundamental field Strength (Peak or Average)

 Δ = Conducted Band Edge Delta (Peak or Average)



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🌉 Agilent Spectrum Analyz	zer - Swept SA					
LXIRL 50Ω		AC SENSE:1	INT	ALIGN AUTO	03:29:36 PM Aug 22, 2011	En anno 1
Center Freq 5.46	50000000 GHz Input: RF PNO: Fast IFGain:Low	Trig: Free Ru Atten: 30 dB	Avg Type n	: Log-Pwr	TYPE MWWWWW DET PNNNN	Frequency
10 dB/div Ref 20.	Auto Tune					
10.0 0.00 -10.0						Center Freq 5.46000000 GHz
-20.0 -30.0 -40.0		3-	haallof the many reduction	SP (Maddall		Start Freq 5.410000000 GHz
-50.0						Stop Freq 5.510000000 GHz
Center 5.46000 GH #Res BW 1.0 MHz	CF Step 10.000000 MHz					
MKR MODE TRC SCL	X	Y	FUNCTION FUR	NCTION WIDTH	FUNCTION VALUE	Auto Man
1 N 1 f 2 N 1 f 3 N 1 f 4	5.503 9 GHz 5.460 0 GHz 5.460 0 GHz	10.14 dBm -39.53 dBm -39.53 dBm				Freq Offset 0 Hz
10 11 12 MSG				STATUS		

Peak Detector of conducted Band Edge Delta

Average Detector of conducted Band Edge Delta

📕 Agilent Spectrum /	Analyzer - Swept SA							
V RL 50 G Center Freq	5.46000000 GHz	AC SENSE:INT	ALIGNAUTO Avg Type: Log-Pwr	03:28:54 PM Aug 22, 2011 TRACE 1 2 3 4 5 6 TYPE MWWWWW	Frequency			
10 dB/div Ref	Input: Rk PRU: Fast Ing. Foc Num IFGain:Low Atten: 30 dB Mkr3 5.412 8 GHz 0 dB/div Ref 20.00 dBm -52.66 dBm							
10.0 0.00					Center Freq 5.460000000 GHz			
-20.0		2			Start Frec 5.410000000 GHz			
50.0 60.0 70.0 		¥			Stop Free 5.510000000 GH:			
Center 5.4600 Res BW 1.0 N	0 GHz AHz	#VBW 10 Hz		Span 100.0 MHz 7.80 s (1001 pts)	CF Step 10.000000 MH: Auto Mar			
1 N 1 f 2 N 1 f 3 N 1 f 4 5 6 7	5.495 6 G 5.460 0 G 5.412 8 G	Hz 0.95 dBm Hz -53.16 dBm Hz -52.66 dBm			Freq Offse 0 H:			
1 8 9 10 11 11 11 12 12 12 14 15 16 17 17 12 12 14 15 16 17 17 12 12 14 15 16 17 17 17 12 14 15 16 17 <th17< th=""> 17 17 17<td></td><td></td><td></td><td></td><td></td></th17<>								
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