Custom EMC Test Report No: EDCS - 1280939

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APPENDIX B:	EMISSION TEST RESULTS	49
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Conducted Bandedge

15.205 / RSS-210 2.7: Radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

Use the procedures in 718828 D01 DTS Meas Guidance v01 to substitute conducted measurements in place of radiated measurements. Connect the antenna port(s) to the spectrum analyzer input. Place the radio in continuous transmit mode.

.........

Connect the antenna port(s) to the spectrum analyzer input. Place the radio in continuous transmit mode Be sure to enter all losses between the transmitter output and the spectrum analyzer.

Reference Level:	10 dBm
Attenuation:	4 dB
Sweep Time:	Coupled
Resolution Bandwidth:	1MHz
Video Bandwidth:	1 MHz for peak, 100 Hz for average
Detector:	Peak

Save 2 plots:1) Average Plot (Vertical and Horizontal), Limit= -41.25 dBm eirp (54dBuV/m @3m)2) Peak plot (Vertical and Horizontal), Limit = -21.25 dBm eirp (74dBuV/m @3m)

Place a marker at the end of the restricted band closest to the transmit frequency to show compliance. Also measure any emissions in the restricted bands.

The "measure-and-sum technique" is used for measuring in-band transmit power of a device. In the measure-and-sum approach, the conducted emission level is measured at each antenna port. The measured results at the various antenna ports are then summed mathematically to determine the total emission level from the device. Summing is performed in linear power units.

This report represents the worst case data for all supported operating modes and antennas.

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Frequency (MHz)	Mode	Tx Paths	Correlated Antenna Gain (dBi)	Tx 1 Bandedge Level (dBm)	Tx 2 Bandedge Level (dBm)	Tx 3 Bandedge Level (dBm)	Total Tx Bandedge Level (dBm)	Limit (dBm)	Margin (dB)
	CCK, 1 to 11 Mbps	1	3	-48.9			-45.9	-41.25	4.7
	CCK, 1 to 11 Mbps	2	3	-48.9	-51.8		-44.1	-41.25	2.9
	CCK, 1 to 11 Mbps	3	3	-51.1	-53.0	-50.1	-43.5	-41.25	2.2
	Non HT-20, 6 to 54 Mbps	1	3	-44.7			-41.7	-41.25	0.5
	Non HT-20, 6 to 54 Mbps	2	3	-48.0	-49.1		-42.5	-41.25	1.3
	Non HT-20, 6 to 54 Mbps	3	3	-51.5	-52.1	-47.6	-42.1	-41.25	0.9
2412	HT-20, M0 to M7	1	3	-44.4			-41.4	-41.25	0.2
24	HT-20, M0 to M7	2	3	-47.6	-48.7		-42.1	-41.25	0.9
	HT-20, M8 to M15	2	3	-47.6	-48.7		-42.1	-41.25	0.9
	HT-20, M0 to M7	3	3	-52.1	-53.7	-47.9	-42.7	-41.25	1.5
	HT-20, M8 to M15	3	3	-52.1	-53.7	-47.9	-42.7	-41.25	1.5
	HT-20, M16 to M23	3	3	-52.1	-53.7	-47.9	-42.7	-41.25	1.5
	HT-20 STBC, M0 to M7	2	3	-47.6	-48.7		-42.1	-41.25	0.9
	HT-20 STBC, M0 to M7	3	3	-52.1	-53.7	-47.9	-42.7	-41.25	1.5
	CCK, 1 to 11 Mbps	1	3	-47.9			-44.9	-41.25	3.7
	CCK, 1 to 11 Mbps	2	3	-47.9	-47.8		-41.8	-41.25	0.6
	CCK, 1 to 11 Mbps	3	3	-49.9	-49.7	-48.6	-41.6	-41.25	0.3
	Non HT-20, 6 to 54 Mbps	1	3	-45.5			-42.5	-41.25	1.3
	Non HT-20, 6 to 54 Mbps	2	3	-47.9	-47.0		-41.4	-41.25	0.2
	Non HT-20, 6 to 54 Mbps	3	3	-50.7	-49.7	-48.4	-41.7	-41.25	0.5
2462	HT-20, M0 to M7	1	3	-45.9			-42.9	-41.25	1.7
24	HT-20, M0 to M7	2	3	-48.7	-47.4		-42.0	-41.25	0.7
	HT-20, M8 to M15	2	3	-48.7	-47.4		-42.0	-41.25	0.7
	HT-20, M0 to M7	3	3	-51.7	-51.7	-49.1	-42.9	-41.25	1.6
	HT-20, M8 to M15	3	3	-51.7	-51.7	-49.1	-42.9	-41.25	1.6
	HT-20, M16 to M23	3	3	-51.7	-51.7	-49.1	-42.9	-41.25	1.6
	HT-20 STBC, M0 to M7	2	3	-48.7	-47.4		-42.0	-41.25	0.7
	HT-20 STBC, M0 to M7	3	3	-51.7	-51.7	-49.1	-42.9	-41.25	1.6

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Frequency (MHz)	Mode	Tx Paths	Correlated Antenna Gain (dBi)	Tx 1 Bandedge Level (dBm)	Tx 2 Bandedge Level (dBm)	Tx 3 Bandedge Level (dBm)	Total Tx Bandedge Level (dBm)	Limit (dBm)	Margin (dB)
	CCK, 1 to 11 Mbps	1	3	-37.9			-34.9	-21.25	13.7
	CCK, 1 to 11 Mbps	2	3	-37.9	-40.4		-33.0	-21.25	11.7
	CCK, 1 to 11 Mbps	3	3	-39.5	-41.5	-40.0	-32.5	-21.25	11.2
	Non HT-20, 6 to 54 Mbps	1	3	-32.7			-29.7	-21.25	8.5
	Non HT-20, 6 to 54 Mbps	2	3	-34.4	-36.9		-29.5	-21.25	8.2
	Non HT-20, 6 to 54 Mbps	3	3	-37.4	-39.1	-34.3	-28.7	-21.25	7.4
2412	HT-20, M0 to M7	1	3	-31.5			-28.5	-21.25	7.3
24	HT-20, M0 to M7	2	3	-32.6	-36.5		-28.1	-21.25	6.9
	HT-20, M8 to M15	2	3	-32.6	-36.5		-28.1	-21.25	6.9
	HT-20, M0 to M7	3	3	-36.5	-36.7	-33.4	-27.5	-21.25	6.2
	HT-20, M8 to M15	3	3	-36.5	-36.7	-33.4	-27.5	-21.25	6.2
	HT-20, M16 to M23	3	3	-36.5	-36.7	-33.4	-27.5	-21.25	6.2
	HT-20 STBC, M0 to M7	2	3	-32.6	-36.5		-28.1	-21.25	6.9
	HT-20 STBC, M0 to M7	3	3	-36.5	-36.7	-33.4	-27.5	-21.25	6.2
	CCK, 1 to 11 Mbps	1	3	-38.0			-35.0	-21.25	13.8
	CCK, 1 to 11 Mbps	2	3	-38.0	-39.9		-32.8	-21.25	11.6
	CCK, 1 to 11 Mbps	3	3	-39.9	-41.1	-38.2	-31.8	-21.25	10.5
	Non HT-20, 6 to 54 Mbps	1	3	-31.1			-28.1	-21.25	6.9
	Non HT-20, 6 to 54 Mbps	2	3	-33.6	-34.5		-28.0	-21.25	6.8
	Non HT-20, 6 to 54 Mbps	3	3	-37.3	-35.2	-35.9	-28.3	-21.25	7.0
2462	HT-20, M0 to M7	1	3	-30.3			-27.3	-21.25	6.1
24	HT-20, M0 to M7	2	3	-33.9	-34.5		-28.2	-21.25	6.9
	HT-20, M8 to M15	2	3	-33.9	-34.5		-28.2	-21.25	6.9
	HT-20, M0 to M7	3	3	-35.1	-38.6	-34.7	-28.0	-21.25	6.8
	HT-20, M8 to M15	3	3	-35.1	-38.6	-34.7	-28.0	-21.25	6.8
	HT-20, M16 to M23	3	3	-35.1	-38.6	-34.7	-28.0	-21.25	6.8
	HT-20 STBC, M0 to M7	2	3	-33.9	-34.5		-28.2	-21.25	6.9
	HT-20 STBC, M0 to M7	3	3	-35.1	-38.6	-34.7	-28.0	-21.25	6.8

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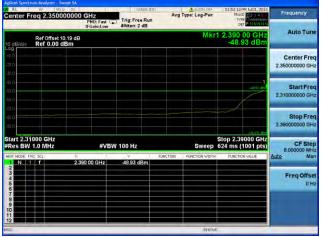




Conducted Bandedge Average, 2412 MHz, CCK, 1 to 11 Mbps

Antenna A

Conducted Bandedge Average, 2412 MHz, CCK, 1 to 11 Mbps



Antenna A

wept SA				
PNO: Fast C	Trig: Free Run	Avg Type: Log-Pwr	TRACE 234 4 TYPE TYPE DET PNNNUN	Frequency
10.19 dB dBm		Mkr	1 2.390 00 GHz -51.82 dBm	Auto Tune
				Center Freq 2.350000000 GHz
			250	Start Freq 2.310000000 GHz
				Stop Freq 2.390000000 GHz
#VBW	100 Hz	Sweep	Stop 2.39000 GHz	CF Step 8.000000 MHz
× 2.390 00 GHz	Y FU -51.82 dBm	NCTION FUNCTION WIDTH	FUNCTION VALUE	<u>Auto</u> Man
				Freq Offset 0 Hz
	NO.19 dB Brancher Albert Branktow Abbrev Abr	Source of the second seco	Solution Solution Augument D00000 GHZ Trig: Free Run Avg Type; Log-Pur PR0: Fast Trig: Free Run Avg Type; Log-Pur 10:19 dB Mkr Mkr #WBW 100 Hz Sweep Sweep	Source Bacter of Processor B



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Center Freq 2.350000000 GHz Avg Type: Log-Pwr Frequency Trig: Free Run #Atten: 2 dB Auto Tun Ref Offset 10.19 dB Ref 0.00 dBm Center Free 23 Start Fr Stop Fre 2.39 Stop 2.39000 GHz Sweep 624 ms (1001 pts) t 2.31000 GHz s BW 1.0 MHz CF S #VBW 100 Hz ute 2.390 00 GHz -51.07 c Freq Offs 01

	rum Analyzes - Sv	vept SA					
Center F		00000 GHz	Trig: Free Run	Avg	Type: Log-Pwr	02:06:11 PM 3.401, 201 TRACE 2:04 E	Frequency
		PNO: Fast G	#Atten: 2 dB			DET PNNN	
10 dB/div	Ref Offset 1 Ref 0.00 c				Mkr	1 2.390 00 GH: -52.98 dBn	a construction of the
10.0 -20.0							Center Freq 2.350000000 GHz
40 0 59 0 60 0							Start Freq 2.310000000 GHz
-70.0 -60.0 -90.0						15010.48	Stop Freq 2.390000000 GHz
#Res BW	1000 GHz 1.0 MHz		V 100 Hz		Sweep	Stop 2.39000 GH 624 ms (1001 pts	2 8.000000 MHz
MKR MODE 1	HC SCL	× 2.390 00 GHz	-52.98 dBm	UNCTION	FUNCTION WIDTH	FUNCTION VALUE	<u>Auto</u> Man
3 4 5 6 7 8 9 10							Freq Offset 0 Hz
12					státus		

Antenna B

Antenna A

RL Center Fr	req 2.3500000		Trig: Free Run #Atten: 2 dB	Aug Type: Log-Pwr	02:09:11 PM 3ul01, 2013 TRACE 2:34 E TYPE MUNUMBER DET P MINIMUM	Frequency
0 dB/div	Ref Offset 10.19 Ref 0.00 dBm			Mkr	2.390 00 GHz -50.15 dBm	Auto Tune
.09 100 200						Center Free 2,350000000 GH:
40 0 50,0 60,0					1 	Start Free 2,310000000 GH:
70.0 40.0 90.0						Stop Free 2.390000000 GH
Start 2.31 #Res BW		#VBV	V 100 Hz	Sweep	Stop 2.39000 GHz 624 ms (1001 pts)	CF Step 8.000000 MH
NKR MODE TR		× 2.390 00 GHz	-50.15 dBm	FUNCTION FUNCTION WIDTH	FUNCTION VALUE	Auto Ma
3 4 5 6 7 8 9 10						Freq Offse 0 H
12						

Antenna C

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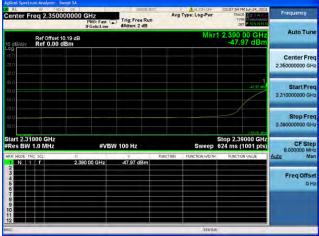
Conducted Bandedge Average, 2412 MHz, CCK, 1 to 11 Mbps



eten Searren person Rt 1 ≠ 190 part Center Freq 2,350000000 GHz PR0: Fast Fraint ov #Atten: 2 dB Avg Type: Log-Pw Frequency Auto Tur Ref Offset 10.19 dB Ref 0.00 dBm Center Fre 2.35000000 GH Start Fre 2.31000000 GH Stop Fre Stop 2.39000 GHz 624 ms (1001 pts) tart 2.31000 GH: Res BW 1.0 MHz #VBW 100 Hz CF SI 8.000 2.390 00 GHz 2.338 48 GHz -44.67 dB -75.05 dB Freq Offs 0

Antenna A

Conducted Bandedge Average, 2412 MHz, Non HT-20, 6 to 54 Mbps



Antenna A

Agilent Spect									
Center F	req 2.35	50 0 EC		Trig: Free Run	Ave	Type: Log-Pwr	TYPE	UN 24, 2013	Frequency
10 dB/div	Ref Offs Ref 0.0	et 10.19 dB 0 dBm				Mkr	1 2.390 0 -49.15	0 GHz 5 dBm	Auto Tune
100 100 200									Center Freq 2.350000000 GHz
40 0 58 0 60 0									Start Freq 2.310000000 GHz
-70.0 -ep.q -sq.q								150.00 /80	Stop Freq 2.390000000 GHz
	1000 GHz 1.0 MHz		#VBV	V 100 Hz		Sweep	Stop 2.390 624 ms (10	00 GHz	CF Step 8.000000 MHz
MKR MODE T	RC SCL	× 2.	390 00 GHz	-49.15 dBm	FUNCTION	FUNCTION WIDTH	FUNCTION	VALUE	<u>Auto</u> Man
4 3 4 5 6 7 8 9 10 11 12									Freq Offset © Hz
ISC						STATUS			

Antenna B

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Conducted Bandedge Average, 2412 MHz, Non HT-20, 6 to 54 Mbps

Conducted Bandedge Average, 2412 MHz, Non HT-20, 6 to 54 Mbps RL RF BOD DC Center Freq 2.350000000 GHz Avg Type: Log-Pwr Frequency Trig: Free Run #Atten: 2 dB Auto Tun Ref Offset 10.19 dB Ref 0.00 dBm 51.48 d Center Free 2.35 Start Fre 2.31000000 G Stop Free 2.39000000 GH CF Ste 8.000000 M rt 2.31000 GHz Stop 2.39000 GHz Sweep 624 ms (1001 pts) #VBW 100 Hz Auto 2.390 00 GH Freq Offs 01

RL RF 500 Center Freq 2.350000000 GHz Frequency Avg Type: Log-P Trig: Free Run #Atten: 2 dB Auto Tu Ref Offset 10.19 dB Ref 0.00 dBm Center Fre 2.35000000 GH Start Fre 2.310000000 G Stop Fre 2.39000000 GH tart 2.31000 GHz Res BW 1.0 MHz Stop 2.39000 GHz Sweep 624 ms (1001 pts) CF 5 #VBW 100 Hz uto 2.390 00 0 Freq Offs 01

Antenna B

Antenna A

RL enter F	req 2,350	000000	GHZ PNO: Fast	Trig: Free Run #Atten: 2 dB		ALIGN OF Type: Log-Pwr	TRAC	M Jun 24, 2013 18 12 3 4 19 19 19 19 19 19	Frequency
0 dB/div	Ref Offset Ref 0.00					Mkr		08 GHz 82 dBm	Auto Tune
.09 10 0 20 0									Center Fred 2.350000000 GHz
49 0 50 0 60 0								47.57.64	Start Free 2,310000000 GHz
70.0 eo.q wa.a	⊘ ²							150.00.000	Stop Free 2.39000000 GH:
Res BW	_		#VB	W 100 Hz		Sweep	624 ms (9000 GHz 1001 pts)	CF Step 8.000000 MH
1 N			0 00 GHz	-47.57 dBm	FUNCTION	FUNCTION WIDTH	FUNCTION	IN VALUE	Auto Mar
34567									Freq Offse 0 H
8 9 10 11									
sa		_				STATUS	-	-	

Antenna C

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H Center Freq 2.350000000 GHz Avg Type: Log-Pw Fast C Trig: Free Run #Atten: 2 dB Auto Tur Ref Offset 10.19 dE Ref 0.00 dBm AA 38 Center Free 2.35000000 GH Start Fre Stop Fr CF S tart 2.31000 GHz Res BW 1.0 MHz Stop 2.39000 GH #VBW 100 Hz SW Freq Offs 01

Conducted Bandedge Average, 2412 MHz, HT-20, M0 to M7

Antenna A

Conducted Bandedge Average, 2412 MHz, HT-20, M0 to M7

Center Fre	q 2.3500	00000 GHz PN0: Fas IFGain:Lo	Trig: Free Run #Atten: 2 dB	Ava	ALIGN OF Type: Log-Pwr	TRAC	M).m 24, 2013 E 1 2 4 4 5 E 2 4 5 F P NN N N N	Frequency
	Ref Offset 10 Ref 0.00 d				Mkr	1 2.390 -47.5	00 GHz 56 dBm	Auto Tun
-09 -09 -09								Center Fre 2.350000000 GF
40.0 -59.0 E0.0							10.00	Start Fre 2,310000000 GH
-70.0 -ejo.0 -sig di							i 50 00 /8m	Stop Fre 2.39000000 GH
Start 2.3100 #Res BW 1.		#\	'BW 100 Hz		Sweep	Stop 2.39 624 ms (*	0000 GHz	CF Ste 8.000000 MH
MKR MODE TRC		× 2.390 00 GHz	-47.56 dBm	FUNCTION	FUNCTION WIDTH	FUNCTIO	IN VALUE	<u>Auto</u> Ma
3 4 5 6								Freq Offs 01
7 8 9 10 11								
12 1					STATLS			

 Of Hall
 We determine
 Autorities
 Contert Freq 235000000 GHz
 Frequency

 PNOC Fast
 Price Fast
 Pri

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Antenna A



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RL 85 500 DC Center Freq 2.350000000 GHz Avg Type: Log-Pwr Frequency Trig: Free Run Auto Tun Ref Offset 10.19 dB Ref 0.00 dBm 47.56 d Center Free 2.35000000 GHz Start Fre 2 31000000 G Stop Fre 2.390000000 GH rt 2.31000 GHz Stop 2.39000 GHz Sweep 624 ms (1001 pts) CF S #VBW 100 Hz 2.390 00 GHz -47.56 Freq Offs 01

Antenna A

Frequency	M Jun 24, 2013 CE 2 2 4 4 5 PE 2 4 PE 2	TRAC TYP	ALIGN OFF		seise in rig: Free Run Atten: 2 dB	GHz PNO: Fast		eq 2.350	
Auto Tuni	00 GHz 70 dBm		Mkr1			il cuincon		Ref Offset Ref 0.00	dB/div
Center Free 2.350000000 GH									
Start Free 2,310000000 GH	-1.70 (Es								10 1.47
Stop Free 2.390000000 GH:	- 150 M (Pm	1							10 1.0 1.0
CF Step 8.000000 MH: Auto Mar	9000 GHz 1001 pts)	624 ms (*		FUNCTION	O Hz		×		R MODE T
Freq Offse 0 H					48.70 dBm	0 00 GHz	2.39		N

Antenna B

Conducted Bandedge Average, 2412 MHz, HT-20, M8 to M15

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RL RF 500 DC Center Freq 2.350000000 GHz Avg Type: Log-Pwr Frequency Trig: Free Run #Atten: 2 dB Auto Tun Ref Offset 10.19 dB Ref 0.00 dBm Center Free 2.3 Start Fre 2.3100000 Stop Fre rt 2.31000 GHz Stop 2.39000 GHz Sweep 624 ms (1001 pts) CF S #VBW 100 Hz Auto 2.390 00 GHz FreqOf

Conducted Bandedge Average, 2412 MHz, HT-20, M0 to M7

Antenna A

Center Fr	eq 2.350000		Trig: Free Run #Atten: 2 dB	Avg Type: Log-Pwr	05:39:23 PM Jun 24, 2013 TRACE 2 3 4 5 TYPE TYPE TO THE DET P NN N NN	Frequency
10 dB/div	Ref Offset 10.1 Ref 0.00 dB			Mkr	2 2.319 92 GHz -79.92 dBm	Auto Tuni
-20 0 -20 0 						Center Fre 2,350000000 GH
40 0 50 0 60 0					479400	Start Fre 2.310000000 GH
-70.0 ep.0 40.0	2 ²				157.00.00	Stop Fre 2.390000000 GH
Start 2.31	1.0 MHz	#VB	W 100 Hz	Sweep	Stop 2.39000 GHz 624 ms (1001 pts)	CF Ste 8.000000 MH Auto Ma
1 N 1	f	2.390 00 GHz 2.319 92 GHz	-47.94 dBm -79.92 dBm			Freq Offse
7 8 9 10 11						
14				STATUS		1 Part 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1

Antenna C

RL	NF 90.0 DC		SENSE IN		ALIGN OFF	05:36:36 PM Jun 24, 20	13 Frequency
enter F	req 2.35000000	PNO: Fast G	Trig: Free Run #Atten: 2 dB	Avg	Type: Log-Pwr	TYPE DET P N N N	
0 dB/div	Ref Offset 10.19 df Ref 0.00 dBm	3			Mkr	1 2.390 00 GH -53.71 dBr	Z Auto Tune
•9 10 0 20 0.							Center Freq 2.350000000 GHz
ва 9.0 9.0							2,310000000 GHz
190							Stop Freq 2.39000000 GHz
Res BW	000 GHz 1.0 MHz	#VBV	V 100 Hz		Sweep	Stop 2.39000 GH 624 ms (1001 pt	CF Step 8.000000 MH
IN T		390 00 GHz	-53.71 dBm	FUNCTION	PUNCTION WIDTH	FUNCTION VALUE	<u>Auto</u> Man
2 3 4 5 6 7 8							Freq Offset 8 Hz
0							

Antenna B

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Address Sector Construction Sector Construction Frequency Center Freq 2.350000000 CHz Process Trg: Free Nur Process Trg: Free Nur Addres: 2:8 Arg Tree: Log-Pwr Process Troe: Prequency Auto Tune Center Freq 2.350000000 CHz Process Trg: Free Nur Addres: 2:8 Auto Tune Center Freq 0.000000 CHz Process Center Freq 2:35000000 CHz Center Freq 2:35000000 CHz Statt Freq 2:35000000 CHz Statt Freq 2:35000000 CHz Statt 2:31000 CHz Pres BW 10 MHz FWBW 100 Hz Stop 2:39000 CHz Stop Freq 2:35000000 CHz Stop Freq 2:35000000 CHz M Mot Tro: SQ: X Y Function Apprict Nurber Function N 1 Y 2:39000 GHz Stop Freq 2:39000 GHz

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Antenna B

Antenna A

RL enter F		00000 GHz PN0: Fast C IFGain:Low	SBREINT	Avg Type: Log-Pwr	05:39:23 PM Jun 24, 2013 TRACE 2 2 4 5 1 TYPE TOWN NNN	Frequency
0 dB/div	Ref Offset 1 Ref 0.00 d	0.19 dB		Mkr	2 2.319 92 GHz -79.92 dBm	Auto Tune
10 0'						Center Freq 2.350000000 GHz
50.0 50.0						Start Freq 2.310000000 GHz
70.0 20.0 20.0	\$ ²				150.00.000	Stop Freq 2.39000000 GHz
Res BW		#VB	N 100 Hz	Sweep	Stop 2.39000 GHz 624 ms (1001 pts)	CF Step 8.000000 MHz
		× 2.390 00 GHz 2.319 92 GHz	47.94 dBm -79.92 dBm	FUNCTION WIDTH	FUNCTION VALUE	<u>Auto</u> Man Freq Offset Q Hz

Antenna C

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Conducted Bandedge Average, 2412 MHz, HT-20, M8 to M15

Conducted Bandedge Average, 2412 MHz, HT-20, M16 to M23

Stop 2.39000 GHz Sweep 624 ms (1001 pts) CF Ste 8.000000 M

Freq Offse

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Advite for a former and a forme

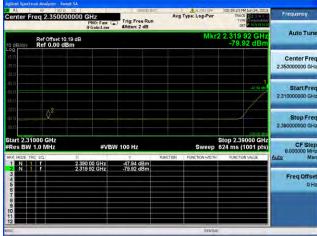
#VBW 100 Hz

2 390 00 G

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Antenna A

Start 2.31000 GHz #Res BW 1.0 MHz



Antenna C

Antenna B

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Center Freq 2.350000000 GHz Avg Type: Log-Pwr Frequency Trig: Free Run Auto Tur Ref Offset 10.19 dB Ref 0.00 dBm 47.56 d Center Free Start Fre Stop Fr 2 30 Stop 2.39000 GHz Sweep 624 ms (1001 pts) t 2.31000 GHz s BW 1.0 MHz CF S #VBW 100 Hz 2.390 00 GHz -47.56 dE Freq Offs

Center F		0000000 GHz PN0: Fast IFGain:Low	Trig: Free Run #Atten: 2 dB	Avg	ALICH OF Type: Log-Pwr	105:11:17 PM Jun TRACE TYPE DET	Frequency
0 dB/div	Ref Offse Ref 0.00	t 10.19 dB I dBm			Mkr	48.70	
000 100 200							Center Free 2.350000000 GH
40 0 30 0 60 0							1 2,310000000 GH
-70.0 -eo.o -so.o							Stop Fre 2.39000000 GH
Start 2.31 #Res BW		#VI	3W 100 Hz		Sweep	Stop 2.39000 624 ms (100	GHz
MKR MODE T		× 2.390 00 GHz	-48.70 dBm	FUNCTION	FUNCTION WIDTH	FUNCTION VAL	UE Auto Ma
2 3 4 5 6 7 8							Freq Offse 0 H
9 10 11							

Antenna A



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Conducted Bandedge Average, 2412 MHz, HT-20 STBC, M0 to M7

RL RF 30.0 DC Center Freq 2.350000000 GHz Avg Type: Log-Pwr Frequency Trig: Free Run #Atten: 2 dB Auto Tun Ref Offset 10.19 dB Ref 0.00 dBm Center Free 2.35000000 GHz Start Fre 2.31000000 GH Stop Free 2.39000000 GH Stop 2.39000 GHz Sweep 624 ms (1001 pts) CF Ste 8.000000 M rt 2.31000 GHz #VBW 100 Hz Auto 2.390 00 GH Freq Offs 01

RL RE Center Freq 2.350000000 GHz Frequency Avg Type: Log-Pu Trig: Free Run #Atten: 2 dB Auto Tu Ref Offset 10.19 dB Ref 0.00 dBm Center Fre 2.35000000 GH Start Fre 2,31000000 G Stop Fre 2.39000000 GH tart 2.31000 GHz Res BW 1.0 MHz Stop 2.39000 GHz Sweep 624 ms (1001 pts) CF 5 #VBW 100 Hz Auto 2.390 00 G -53.71 c Freq Offs 01

Antenna B

Antenna A

Center Fr	req 2.350000		Trig: Free Run #Atten: 2 dB	Aug Type: Log-Pwr	05:39:23 PM Jun 24, 2013 TRACE 2 2 4 E TYPE 7 DET P NN NINN	Frequency		
0 dB/div	Ref Offset 10.1 Ref 0.00 dB			Mkr2 2.319 92 GHz -79.92 dBm				
.09 .00 200						Center Freq 2,35000000 GHz		
40 N 50.0 60.0					4754.000	Start Freq 2,310000000 GHz		
7010 60 0 90 0	2				150.00 (55	Stop Free 2.39000000 GH2		
Start 2.31 #Res BW		#VBV	V 100 Hz	Sweep	Stop 2.39000 GHz 624 ms (1001 pts)	CF Step 8.000000 MHz		
2 N 1	C SCL	× 2.390 00 GHz 2.319 92 GHz	-47.94 dBm -79.92 dBm	UNCTION FUNCTION WIDTH	FUNCTION VALUE	<u>Auto</u> Man		
3 4 5 6 7 8 9						Freq Offset 0 Hz		
10 11 12								

Antenna C

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Conducted Bandedge Average, 2412 MHz, HT-20 STBC, M0 to M7



Altor Unit Selection Advertision Processing Processing Center Freq 2.491750000 CHz Processing Trg: Free Run Ficial daw Arg Trps: Log-Pwr Trg: Free Run Ficial daw Trg: Free Run Ficial daw Arg Trps: Log-Pwr Trg: Clip Pwr Trg: Clip Pwr Clip Pw

Conducted Bandedge Average, 2462 MHz, CCK, 1 to 11 Mbps

Antenna A

Conducted Bandedge Average, 2462 MHz, CCK, 1 to 11 Mbps



enter Freq 2.491750000 GH Avg Type: Log-P Trig: Free Run Auto Tu Ref Offset 10.24 dB Ref 0.00 dBm Center Fre 2.491750000 GH Start Fr Stop Fre 2 60 Stop 2.500000 GH Sweep 129 ms (1001 pt Start 2.483500 GH #VBW 100 Hz CFS 1.64 2.483 500 0 GH 47 79 FreqC 01

Antenna A

Antenna B

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RL RF Soc DE Center Freq 2.491750000 GHz PNot Avg Type: Log-Pwr Frequency Trig: Free Run #Atten: 2 dB Auto Tun Ref Offset 10.24 dB Ref 0.00 dBm Center Free 2.491750000 GH Start Fr Stop Fre 2.50000000 GH t 2.483500 GHz s BW 1.0 MHz Stop 2.500000 GHz Sweep 129 ms (1001 pts) CF S #VBW 100 Hz Auto 2.483 500 0 GHz FreqOf

nter F	neq 2,49	91750000	PNO: Wide C	Trig: Free Run #Atten: 2 dB	Avg	ALIGN OFF	06:19:51 PM 3401, 201 TRACE 2 2 4 5 TYPE 0ET P NN NU	Frequency
dB/div		et 10.24 dB 00 dBm				Mkr1 2.	483 500 0 GHz -49.67 dBm	
9 / 0								Center Freq 2.491750000 GHz
0 1- 0							-49.67 digu	Start Freq 2,483500000 GHz
10 14							150 (D. 20	Stop Freq 2.500000000 GHz
	3500 GH 1.0 MHz		#VB	W 100 Hz		S Sweep	top 2.500000 GHz 129 ms (1001 pts)	CF Step 1.650000 MHz
MODE TR		× 2.483	500 0 GHz	⊶49.67 dBm	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	<u>Auto</u> Man
								Freq Offset Ø Hz

Antenna B

Antenna A

RL Center Fr		1750000	GHz PNO: Wide C	Trig: Free Run #Atten: 2 dB	Avg	ALIGN OFF	06:23:02 PM 3.401, 2013 TRACE 2 2 4 5 TYPE DET 2 M N N N	Frequency
0 dB/div	Ref Offs Ref 0.0	et 10.24 dB 0 dBm				Mkr1 2.	483 500 0 GHz -48.62 dBm	Auto Tune
20 a 20 a 10 a 10 a								Center Free 2,491750000 GH:
49 0 <mark>1</mark>							-di 83 dên	Start Fre 2.483500000 GH
70.0 ép.o 40.0							350.00.459	Stop Free 2.500000000 GH
Start 2.48 #Res BW		z	#VB	W 100 Hz			top 2.500000 GHz 129 ms (1001 pts)	CF Step 1.650000 MH
MAR MODE TH		× 2.483 (500 0 GHz	-48.62 dBm	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	Auto Mar
2345678								Freq Offse 0 H:
9 10 11								

Antenna C

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Conducted Bandedge Average, 2462 MHz, CCK, 1 to 11 Mbps



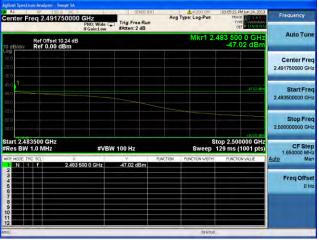
RL A PLANDER DE CONTRACTOR DE Avg Type: Log-Pw Frequency Auto Tur Ref Offset 10.24 dB Ref 0.00 dBm Center Fre 2.491750000 GH Start Fre 2.483500000 GH Stop Fre 2 60 tart 2.483500 GH Res BW 1.0 MHz Stop 2.500000 GHz Sweep 129 ms (1001 pts) #VBW 100 Hz CF St 1.650000 M 2.483 500 0 GHz 2.494 374 0 GHz -45.45 dE -62.99 dE Freq Offs 0

Conducted Bandedge Average, 2462 MHz, Non HT-20, 6 to 54 Mbps

Antenna A

Conducted Bandedge Average, 2462 MHz, Non HT-20, 6 to 54 Mbps





Antenna B

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Conducted Bandedge Average, 2462 MHz, Non HT-20, 6 to 54 Mbps



Antenna B

Antenna A

RL	HF SD D DC		SENSEINT	ALIGN OF	10:25:29 PM Jun 24, 2013 TRACE 10:25:29 PM Jun 24, 2013	Frequency
Center F	req 2.49175000	PNO: Wide	Trig: Free Run #Atten: 2 dB	Avg Type: Log-Pwr	TYPE DOWNAND	
0 dB/div	Ref Offset 10.24 d Ref 0.00 dBm			Mkr1 2.	483 500 0 GHz -48.35 dBm	Auto Tuni
.09 .00 200 200						Center Free 2.491750000 GH
49 n <mark>1</mark>					-4.0.38 dile	Start Fre 2.483500000 GH
70.0 40.0 90.0					150.00.000	Stop Fre 2.500000000 GH
Start 2.48 Res BW	3500 GHz 1.0 MHz	#VBW	100 Hz		top 2.500000 GHz 129 ms (1001 pts)	CF Ste 1.650000 MH
1 N		3 500 0 GHz	48.35 dBm	UNCTION FUNCTION WIDTH	FUNCTION VALUE	Auto Ma
4 5 6 7						Freq Offse
8 9 10 11						
ISC				STATUS		

Antenna C

Page No: 19 of 63

RL RF S00 DC Center Freq 2.491750000 GHz Avg Type: Log-Pwr Frequency Trig: Free Run #Atten: 2 dB Auto Tu 411 0 Ref Offset 10.24 dB Ref 0.00 dBm Center Free 2,491750000 GHz Start Fre Stop Fr 2.483500 GHz Stop 2.50 CF S N 100 Hz ms (1001 pts uto 2.483 500 0 GHz 2.487 411 0 GHz -45.90 dB -50.58 dB Freq Offs

Conducted Bandedge Average, 2462 MHz, HT-20, M0 to M7

Antenna A

Conducted Bandedge Average, 2462 MHz, HT-20, M0 to M7

RL IF 500 cc Center Freq 2.49175000	0 GHz	SBREINT Av Free Run n: 2 dB	g Type: Log-Pwr	12:48:28 AM Jun 25, 2013 TRACE 2 2 4 5 Type 2 4 4 5 DET P MINININ	Frequency
Ref Offset 10.24 dE	в		Mkr1 2.	483 500 0 GHz -48.73 dBm	Auto Tune
20 gi 10 n					Center Freq 2.491750000 GHz
ຍາດ 1 ອາດ ທີ່ບໍ່				-6.73 (En	Start Freq 2.483500000 GHz
700 30 0 				a Shinh ver	Stop Freq 2.50000000 GHz
Start 2.483500 GHz Res BW 1.0 MHz	#VBW 100 P	łz	S Sweep	top 2.500000 GHz 129 ms (1001 pts)	CF Step
KR MODE TRC SCL X		3 dBm	FUNCTION WIDTH	FUNCTION VALUE	Auto Man Freq Offset 0 Hz
5 6 7 8 9 9					412
			STATUS		



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Antenna B

Page No: 20 of 63

RL RF SOO DE Center Freq 2.491750000 GHz Avg Type: Log-Pwr Frequency Trig: Free Run Auto Tun Ref Offset 10.24 dB Ref 0.00 dBm Center Free 2.491750000 GH Start Fre 2.483500 Stop Fre 2.50000000 GH Stop 2.500000 GHz Sweep 129 ms (1001 pts) t 2.483500 GHz s BW 1.0 MHz CF S #VBW 100 Hz uto 2.483 500 0 GHz -48.73 c Freq Offs

RL RF 55.0 DC enter Freq 2.491750000	GHz PNO: Wide G	Trig: Free Run #Atten: 2 dB		ALIGN OFF	12:51:16 AM Jun 25, 2013 TRACE 1 2 3 4 5 Type 1 DET P MIN N N	Frequency
Ref Offset 10.24 dB				Mkr1 2.4	483 500 0 GHz -47.45 dBm	Auto Tune
						Center Fred 2,491750000 GHz
α 1 α 0					47.45 (8%	Start Free 2.483500000 GH:
10 10 10					150.00.00	Stop Free 2.500000000 GH:
art 2.483500 GHz Res BW 1.0 MHz	#VBW	100 Hz		Sweep	op 2.500000 GHz 129 ms (1001 pts)	CF Step 1.650000 MH
R MODE TRC SCL X	500 0 GHz	-47.45 dBm	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	Auto Mar
						Freq Offse 0 H

Antenna B

Antenna A

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Conducted Bandedge Average, 2462 MHz, HT-20, M8 to M15

RL RF S00 DC Center Freq 2.491750000 GHz PNo: Avg Type: Log-Pwr Frequency Trig: Free Run #Atten: 2 dB Auto Tun Ref Offset 10.24 dB Ref 0.00 dBm Center Free 2.491750000 GH Start Fre 2.483500000 G Stop Fre 2.50000000 GH Stop 2.500000 GHz Sweep 129 ms (1001 pts) t 2.483500 GHz s BW 1.0 MHz CF S #VBW 100 Hz Auto -51.69 dBm -62.87 dBm 2.483 500 0 GHz 2.489 721 0 GHz FreqO

Conducted Bandedge Average, 2462 MHz, HT-20, M0 to M7

Antenna A

RL Center F	req 2.491750000	GHz PNO: Wide			Avg Type	Log-Pwr	TYPE	Jun 25, 2013	Frequency
0 dB/div	Ref Offset 10.24 dB Ref 0.00 dBm					Mkr1 2.	483 500 -49.1	0 GHz 0 dBm	Auto Tuni
10 0 20 0 20 0									Center Fre 2,491750000 GH
40 0 1 59,0 60,0								-41 (0.004	Start Fre 2.483500000 GH
70.0 ep.a 40.i					~			0.50 00 dBm	Stop Fre 2.50000000 GH
Start 2.48 #Res BW	IC SCL X	#VB	W 100 Hz	FUNC	tion fun	S Sweep	top 2.500 129 ms (1 FUNCTION	000 GHz 001 pts)	CF Ste 1.650000 MH Auto Ma
234567	1 2.403	500 U GH2	-49.10 GB						Freq Offse 0 }
8 9 10 11									
ISG						STATUS		_	

Antenna C

RL RI enter Fred	2.491750000	GHz	SENSE INT	Avg	Type: Log-Pwr	01:08:07 AM Jun 25, 2013 TRACE	Frequency
		PNO: Wide G	Trig: Free Run #Atten: 2 dB			DET P N N N N	
dBidiy Re	f Offset 10.24 dB f 0.00 dBm				Mkr1 2.	483 500 0 GHz -51.74 dBm	Auto Tune
9 10 10							Center Free 2.491750000 GH
100 1						.R 4 90	Start Fre 2.483500000 GH
00 00 00							Stop Fre 2.500000000 GH
tart 2.48350 Res BW 1.0		#VBW	100 Hz			top 2.500000 GHz 129 ms (1001 pts)	CF Ste 1.650000 MH
KR MODE THE SC		500 0 GHz	-51.74 dBm	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	<u>Auto</u> Mar
2 3 4 5 6 7							Freq Offse 0 H
8 9 0							
2					grates		

Antenna B

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Neten Swarmen References De State S Avg Type: Log-Pwr Frequency Auto Tun Ref Offset 10.24 dB Ref 0.00 dBm Center Free 2.491750000 GHz Start Fre 2.483500000 GH Stop Fre 2.50 Stop 2.500000 GHz Sweep 129 ms (1001 pts) tart 2.483500 GHz Res BW 1.0 MHz CF Ste 1.650000 M #VBW 100 Hz uto -51.69 dBr -62.87 dBr 2.483 500 0 GHz 2.489 721 0 GHz Freq Offse

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Antenna B

Antenna A

enter Fi	req 2.49175000		Trig: Free Run #Atten: 2 dB	Aug Type: Log-Pwr	01:10:55 AM Jun 25, 2013 TRACE 2:34 B TYPE 2:34 B DET P MINIMUM	Frequency
0 dB/div	Ref Offset 10.24 d Ref 0.00 dBm	в		Mkr1 2.	483 500 0 GHz -49.10 dBm	Auto Tune
09 00 00 00						Center Freq 2,491750000 GHz
10 0 0 <mark>1</mark>	_				-4% (10 dBm	Start Free 2.483500000 GH2
0.0 0.0 0.0					i 50 00 rem	Stop Free 2.500000000 GH:
	3500 GHz 1.0 MHz	#VB	N 100 Hz	S Sweep	top 2.500000 GHz 129 ms (1001 pts)	CF Step
KR MODE TR		3 500 0 GHz	49.10 dBm	INCTION FUNCTION WIDTH	FUNCTION VALUE	<u>Auto</u> Mar
2 3 4 5 6 7						Freq Offse 0 H
8 9 0 1 2						
d				STATUS		

Antenna C

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Conducted Bandedge Average, 2462 MHz, HT-20, M8 to M15

Conducted Bandedge Average, 2462 MHz, HT-20, M16 to M23



nter Freq 2,491750000	GHz PNO: Wide C	Trig: Free Run #Atten: 2 dB	Avg	AUGN OFF	01:08:07 AM 3un 25, 201: TRACE 2 2 3 4 5 TYPE DET PNINNI	Frequency
Ref Offset 10.24 dB				Mkr1 2.	483 500 0 GHz -51.74 dBm	
						Center Free 2.491750000 GH
0 1					-50 74 -Bri	Start Free 2.483500000 GH
a					150 (t) Jim	Stop Free 2.50000000 GH
art 2.483500 GHz es BW 1.0 MHz MODELTRO SCL ×	#VBW	100 Hz	FUNCTION	Sweep	top 2.500000 GHz 129 ms (1001 pts) FUNCTION VALUE	CF Ster 1.650000 MH Auto Mar
	00 0 GHz	-51.74 dBm				Freq Offse 0 H

Antenna B

RL enter F		91750000		Trig: Free R #Atten: 2 dB	Avs	ALIGN SF Type: Log-Pwr	ID: 10:55 AM Jun 25, 2013 TRACE 2 2 4 5 TYPE DET PLINING	Frequency
0 dB/div		set 10.24 dB 00 dBm				Mkr1 2.	483 500 0 GHz -49.10 dBm	
10 0 20 10 20 10 20 10								Center Fre 2.491750000 GH
60 0 1							-4i türdiri	Start Fre 2,483500000 GH
70 0 30 0 10 d						<u> </u>	.150.00.05	Stop Fre 2.500000000 GH
Res BW	3500 GI 1.0 MHz		#VE	W 100 Hz		Sweep	top 2.500000 GHz 129 ms (1001 pts)	CF Ste 1.650000 MH
NR MODE T		× 2.483	500 0 GHz	-49.10 dBn	PUNCTION	FUNCTION WIDTH	FUNCTION VALUE	Auto Ma
3 4 5 6								Freq Offse 0 H
7 8 9 10								
12						STATUS		

Antenna C

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RL RF 50.9 EC Center Freq 2.491750000 GHz Avg Type: Log-Pwr Trig: Free Run Auto Tu 3 500 0 G -48.73 dE Ref Offset 10.24 dB Ref 0.00 dBm Center Fre 2.491750000 GH Start Fre 2 483 Stop Fri tart 2.483500 GHz Res BW 1.0 MHz Stop 2.500000 GH: Sweep 129 ms (1001 pts CF S #VBW 100 Hz 2 483 500 0 GHz Freq Off

Center Freq 2.4	191750000 GHz PNO: Wid IFGain:Lo	Trig: Free Run #Atten: 2 dB	Aug Type: Log-Pwr	12:51:16 AM 3un 25, 2013 TRACE 2 2 4 6 1 TYPE NUMBER OF PLANES	Frequency
Ref Off	Auto Tur				
109 107 280					Center Fre 2.491750000 GH
40 0 1				47.45 rem	Start Fre 2.483500000 GH
-700 -900 -500				150.00.000	Stop Fre 2.50000000 GH
Start 2.483500 G #Res BW 1.0 MH		/BW 100 Hz	S Sweep	top 2.500000 GHz 129 ms (1001 pts)	
Res BW 1.0 MH		¥.	SWeep	129 ms (1001 pts)	CF Ste 1,650000 MH Auto Ma
Res BW 1.0 MH	lz #\ ×	¥.	Sweep	129 ms (1001 pts)	1.650000 MH

Conducted Bandedge Average, 2462 MHz, HT-20 STBC, M0 to M7

Antenna A



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Conducted Bandedge Average, 2462 MHz, HT-20 STBC, M0 to M7 RL AF Soo DC Center Freq 2.491750000 GHz Avg Type: Log-Pwr Frequency Trig: Free Run #Atten: 2 dB Auto Tun Ref Offset 10.24 dB Ref 0.00 dBm 2.87 d Center Free 2.491750000 GHz Start Fre 2.483500000 G Stop Free 2.50000000 GH Stop 2,500000 GHz Sweep 129 ms (1001 pts) CF Ste 1.650000 M rt 2.483500 GHz #VBW 100 Hz Auto 2.483 500 0 GHz 2.489 721 0 GHz -51.69 dBn -62.87 dBn Freq Offs 01

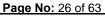
enter Freq 2.491750000 GHz Frequency Avg Type: Log-Pw Trig: Free Run #Atten: 2 dB Auto Tu Ref Offset 10.24 dB Ref 0.00 dBm Center Fre 2.491750000 GH Start Fre 2.483500000 G Stop Fre 2.50000000 GH Stop 2.500000 GHz Sweep 129 ms (1001 pts) CF Ste 1.650000 tart 2.483500 GHz Res BW 1.0 MHz #VBW 100 Hz Auto 2.483 500 0 GHz -51.74 dl Freq Offs 01

Antenna B

Antenna A

Frequency er Freq 2.491750000 GHz Avg Type: Log-P Trig: Free Run Auto Tur Ref Offset 10.24 dB Ref 0.00 dBm Center Fre 2.491750000 GH Start Fre 2,4835000 Stop Free 2.50000000 GH Start 2.483500 GHz #Res BW 1.0 MHz Stop 2.500000 GHz Sweep 129 ms (1001 pts) CF St 1.650000 M #VBW 100 Hz 2.483 500 0 G Freq Offs 01

Antenna C







Conducted Bandedge Peak, 2412 MHz, CCK, 1 to 11 Mbps



Conducted Bandedge Peak, 2412 MHz, CCK, 1 to 11 Mbps







Antenna B

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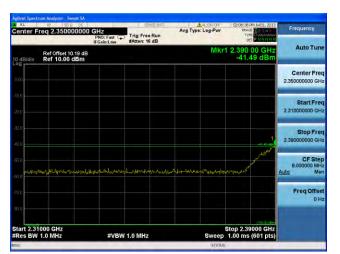


Conducted Bandedge Peak, 2412 MHz, CCK, 1 to 11 Mbps

Antenna A

Avg Type: Log-Pt enter Freq 2.350000000 GHz Trig: Free Run Auto Tu Ref Offset 10.19 dB Ref 10.00 dBm 30 00 Center Fre 2.350000 000 GI Start Fre 2.31000000 G Stop Fre CFS 8.00 Freq Off Start 2.31000 GHz #Res BW 1.0 MHz Stop 2.39000 GHz Sweep 1.00 ms (601 pts) #VBW 1.0 MHz

Antenna C



Antenna B

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Conducted Bandedge Peak, 2412 MHz, Non HT-20, 6 to 54 Mbps



Conducted Bandedge Peak, 2412 MHz, Non HT-20, 6 to 54 Mbps









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Conducted Bandedge Peak, 2412 MHz, Non HT-20, 6 to 54 Mbps



Antenna B

Antenna A

RL RF 902 DC Center Freq 2.350000000	GHZ PNO: Fast Trig: Free Run #Atten: 16 dB	Avg Type: Log-Pwr	02:21:03 PM Jun 24, 2013 TRACE 2 0 4 F TYPE 0ET P N NN H N	Frequency
Ref Offset 10.19 dB		Mkr1	2.390 00 GHz -34.31 dBm	Auto Tune
0.00				Center Fre 2.35000000 GH
20.0				Start Fre 2.310000000 GH
40.0			34 31 88	Stop Fre 2.390000000 GH
50.0 10.11 Malanaan Julion ji Juli Malana Malana	Matal Malance and Market and a start a	selfed-onlymosicia haddledder	andort.	CF Ste 8.000000 MH Auto Ma
70.0				Freq Offse
Start 2.31000 GHz #Res BW 1.0 MHz	#VBW 1.0 MHz	Sween	top 2.39000 GHz 1.00 ms (601 pts)	

Antenna C

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Conducted Bandedge Peak, 2412 MHz, HT-20, M0 to M7

Antenna A

Conducted Bandedge Peak, 2412 MHz, HT-20, M0 to M7

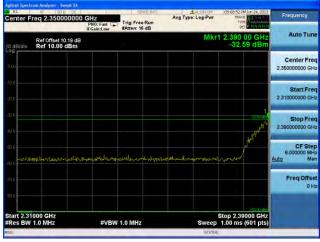








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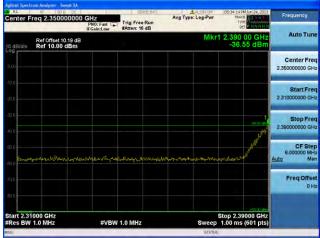
Conducted Bandedge Peak, 2412 MHz, HT-20, M8 to M15

Antenna A



Antenna B

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Conducted Bandedge Peak, 2412 MHz, HT-20, M0 to M7

Antenna A

enter Freq 2.350000000 GHz Avg Type: Log-Pu Trig: Free Run Auto Tu Ref Offset 10.19 dB Ref 10.00 dBm 33.39 Center Fre 2.350000 000 GI Start Fre 2.31000000 G Stop Fr CFS 8.000 Freq Offs Start 2.31000 GHz #Res BW 1.0 MHz Stop 2.39000 GHz Sweep 1.00 ms (601 pts) #VBW 1.0 MHz

Antenna C

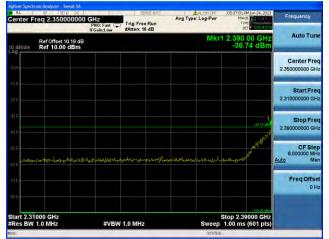


Antenna B

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Conducted Bandedge Peak, 2412 MHz, HT-20, M8 to M15



Antenna B

Antenna A

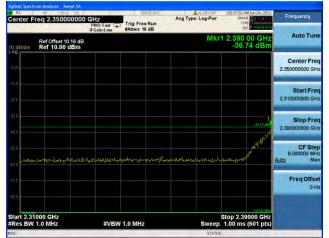


Antenna C

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Conducted Bandedge Peak, 2412 MHz, HT-20, M16 to M23



Antenna B

Antenna A



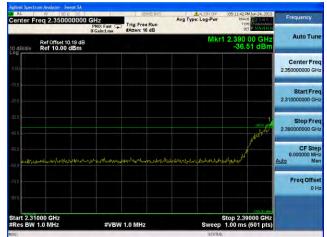
Antenna C

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Conducted Bandedge Peak, 2412 MHz, HT-20 STBC, M0 to M7





Antenna A



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Auto Tur

Center Free

Start Fr

Stop Fr

CF S

Freq Offs

Stop 2.39000 GHz Sweep 1.00 ms (601 pts) 01

Avg Type: Log-Pw

Fast Trig: Free Run #Atten: 16 dB

#VBW 1.0 MHz



Conducted Bandedge Peak, 2412 MHz, HT-20 STBC, M0 to M7

Antenna A

Antenna B

Start 2.31000 GHz #Res BW 1.0 MHz

enter Freq 2.350000000 GHz

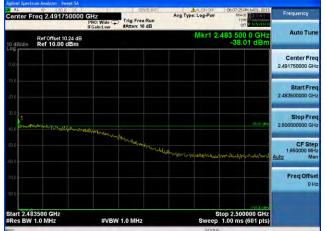
Ref Offset 10.19 dB Ref 10.00 dBm



Antenna C

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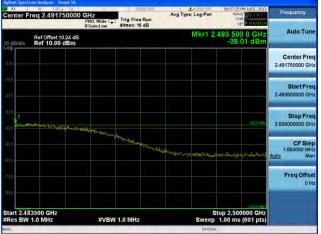


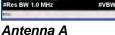


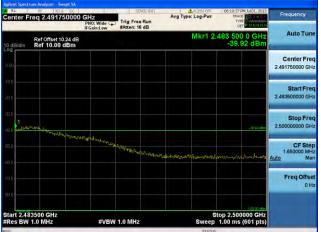
Conducted Bandedge Peak, 2462 MHz, CCK, 1 to 11 Mbps



Conducted Bandedge Peak, 2462 MHz, CCK, 1 to 11 Mbps









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Conducted Bandedge Peak, 2462 MHz, CCK, 1 to 11 Mbps





Antenna C

enter Freq 2.491750000 GHz Avg Type: Log-Pw Erenuency Trig: Free Run #Atten: 16 dB Auto Tur Ref Offset 10.24 dB Ref 10.00 dBm 83 500 0 -41.07 Center Free 2.491750000 GH Start Fr Stop Fr 2.50 CF S Freq Offs 01 Start 2.483500 GHz #Res BW 1.0 MHz Stop 2.500000 GHz Sweep 1.00 ms (601 pts #VBW 1.0 MHz

Antenna B

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Conducted Bandedge Peak, 2462 MHz, Non HT-20, 6 to 54 Mbps



Conducted Bandedge Peak, 2462 MHz, Non HT-20, 6 to 54 Mbps





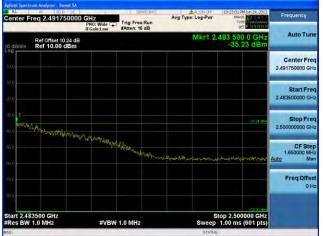




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Conducted Bandedge Peak, 2462 MHz, Non HT-20, 6 to 54 Mbps



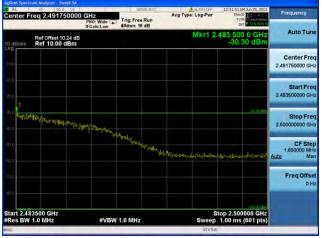
Antenna B





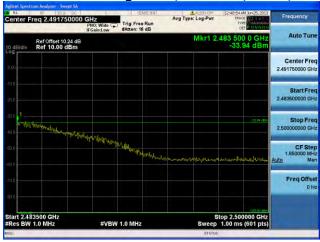
Antenna C

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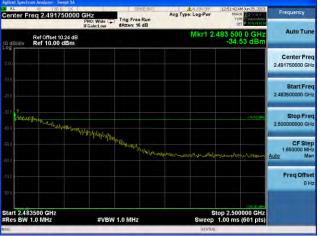


Conducted Bandedge Peak, 2462 MHz, HT-20, M0 to M7

Antenna A



Conducted Bandedge Peak, 2462 MHz, HT-20, M0 to M7



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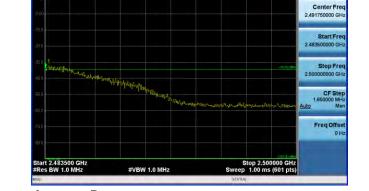
Erenuency

Auto Tur



Conducted Bandedge Peak, 2462 MHz, HT-20, M8 to M15





Trig: Free Run #Atten: 16 dB Avg Type: Log-Pwr

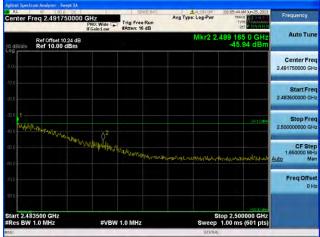
-34.53

Antenna B

enter Freq 2.491750000 GHz

Ref Offset 10.24 dB Ref 10.00 dBm

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Conducted Bandedge Peak, 2462 MHz, HT-20, M0 to M7

Antenna A

 Open III (1)
 Open III (2)
 Open IIIII (2)
 Open III (2)
 Open III (2

Antenna C



Antenna B

Page No: 44 of 63

Auto Tur

Center Fre 2.491750000 GH

Start Fr

Stop Fr

CF S

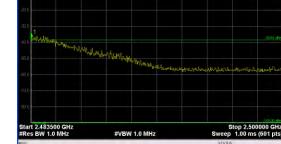
Freq Offs

01

2.5



Conducted Bandedge Peak, 2462 MHz, HT-20, M8 to M15



Trig: Free Run #Atten: 16 dB Avg Type: Log-Pw

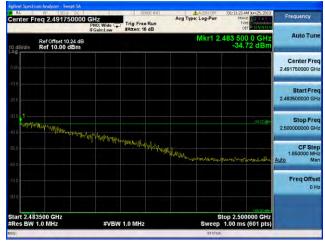
33 500 0 -38.61 (

Antenna A

Antenna B

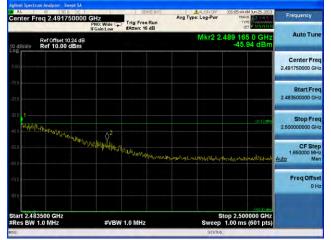
RL RF SOO DC C Center Freq 2.491750000 GHz PNo: Y

> Ref Offset 10.24 dE Ref 10.00 dBm





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Conducted Bandedge Peak, 2462 MHz, HT-20, M16 to M23



Antenna B





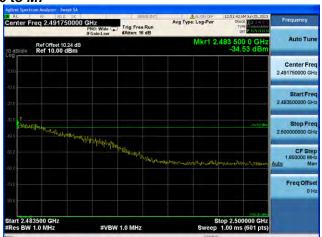
Antenna C

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Conducted Bandedge Peak, 2462 MHz, HT-20 STBC, M0 to M7





Antenna A

Antenna B

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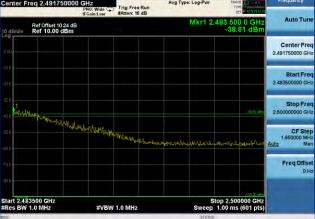


Conducted Bandedge Peak, 2462 MHz, HT-20 STBC, M0 to M7

Antenna A



Antenna C



Avg Type: Log-Pw

Antenna B

enter Freq 2.491750000 GHz

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Appendix B: Emission Test Results

Testing Laboratory: Cisco Systems, Inc., 170 West Tasman Drive, San Jose, CA 95134, USA

Radiated Spurious Emissions

15.205 / RSS-210 2.7: Radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

Using Vasona, configure the spectrum analyzer as shown below (be sure to enter all losses between the transmitter output and the spectrum analyzer). Place the radio in continuous transmit mode.

.........

Terminate the access Point RF ports with 50 ohm loads.

Maximize Turntable (find worst case table angle), Maximize Antenna (find worst case height)

Save 2 plots:1) Average Plot (Vertical and Horizontal), Limit= 54dBuV/m @3m2) Peak plot (Vertical and Horizontal), Limit = 74dBuV/m @3m

Place a marker at the end of the restricted band closest to the transmit frequency to show compliance. Also measure any emissions in the restricted bands.

This report represents the worst case data for all supported operating modes and antennas. There are no measurable emissions above 18 GHz.

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Frequency (MHz)	Mode	Data Rate (Mbps)	Spurious Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
	Legacy CCK, 1 to 11 Mbps	1	50.7	<54	3.3
2442	Non HT-20, 6 to 54 Mbps	6	50.7	<54	3.3
2412	HT-20, M0 to M23	m0	50.7	<54	3.3
	HT-20 STBC, M0 to M7	m0	50.7	<54	3.3
	Legacy CCK, 1 to 11 Mbps	1	50.8	<54	3.2
2427	Non HT-20, 6 to 54 Mbps	6	50.8	<54	3.2
2437	HT-20, M0 to M23	m0	50.8	<54	3.2
	HT-20 STBC, M0 to M7	m0	50.8	<54	3.2
	Legacy CCK, 1 to 11 Mbps	1	50.7	<54	3.3
2462	Non HT-20, 6 to 54 Mbps	6	50.7	<54	3.3
2462	HT-20, M0 to M23	m0	50.7	<54	3.3
	HT-20 STBC, M0 to M7	m0	50.7	<54	3.3

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Agilent 18:04:22 Jul 21, 2013 R Т Freq/Channel EMiSoft Vasona: EMi Emission Software Mkr1 17.851 GHz **Center Freq** Ref 90 dB**µ**V #Peak #Atten 0 dB 50.77 dB**µ**V 9.50000000 GHz Log 10 dB/ Start Freq 1.00000000 GHz Stop Freq 18.0000000 GHz DI 54.0 dB**µ**V **CF** Step 10.0000000 MHz #LgAv Auto <u>Man</u> W1 S2 S3 FS A AA £(f): FreqOffset 0.00000000 Hz Signal Track FTun 0n Off Swp Start 1.000 GHz Stop 18.000 GHz #VBW 1 kHz #Sweep 13.26 s (1601 pts) #Res BW 1 MHz Copyright 2000-2008 Agilent Technologies

Radiated Spurs, 2412 MHz, All Rates, All Modes, Average

Radiated Spurs, 2442 MHz, All Rates, All Modes, Average



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🔆 Agilent 19:02:55	Jul 21, 2013	·	RT	Freq/Channel
EMiSoft Vasona: EMi E Ref 90 dBµV #Peak	Emission Software #Atten 0 dB		Mkr1 17.894 GH 50.73 dB µ V	Contor Front
Log 10 dB/				Start Freq 1.00000000 GHz
DI				Stop Freq 18.0000000 GHz
54.0 dBµV #LgAv				CF Step 10.0000000 MHz Auto <u>Man</u>
W1 S2 S3 FS A				FreqOffset 0.00000000 Hz
£(f): FTun Swp				Signal Track ^{On <u>Off</u>}
Start 1.000 GHz #Res BW 1 MHz	#VBW 1	. kHz #Swee	Stop 18.000 GHz 13.26 s (1601 pts)	
Copyright 2000-20	008 Agilent Tech	nologies		

Radiated Spurs, 2462 MHz, All Rates, All Modes, Average

Radiated Spurs, 2412 MHz, All Rates, All Modes, Peak

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🔆 Agilent 1	9:29:53 Jul 2:	1,2013				R	Т	Freq/Channel
Ref 90 dB µ V #Peak	na: EMi Emission #Atte	n Software n 0 dB			Mkr1	17.96 59.34		Center Freq 9.50000000 GHz
Log 10 dB/								Start Freq 1.00000000 GHz
<u>DI</u> .					a ha	Mada and a state	1 () () () () () () () () () () () () ()	Stop Freq 18.0000000 GHz
74.0 dBµV #LgAv	an and the second second	q'illianistini dinatat	n a hair	e yr wr yn gwygr	<u> </u>	nd ^a n n		CF Step 10.0000000 MHz Auto <u>Man</u>
W1 S2 S3 FS A								FreqOffset 0.00000000 Hz
€(f): FTun Swp								Signal Track On <u>Off</u>
Start 1.000 (#Res BW 1 MH		#VBW 1	MHz #	Sweep 5		18.000 (1601		
Copyright 2	000-2008 Ag	gilent Techn	ologies					

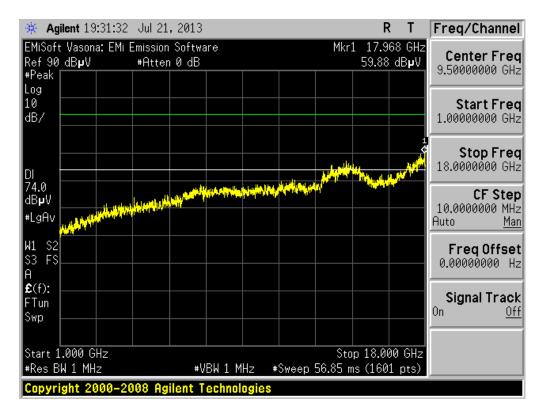
Radiated Spurs, 2442 MHz, All Rates, All Modes, Peak

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🔆 Agilent 19:30:58	Jul 21, 2013		RT	Freq/Channel
EMiSoft Vasona: EMi E Ref 90 dB µ V #Peak Log	Emission Softwar #Atten 0 dB	e	Mkr1 17.766 GHz 60.30 dB µ V	Center Freq 9.50000000 GHz
10 dB/				Start Freq 1.00000000 GHz
DI		the second s		Stop Freq 18.0000000 GHz
dBµV #LgAv	and a second			CF Step 10.000000 MHz Auto <u>Man</u>
W1 S2 S3 FS A				FreqOffset 0.00000000 Hz
£(f): FTun Swp				Signal Track On <u>Off</u>
Start 1.000 GHz #Res BW 1 MHz	#VB	W 1 MHz #Sweep 56.	Stop 18.000 GHz 85 ms (1601 pts)	
Copyright 2000-20	08 Agilent Te	chnologies		

Radiated Spurs, 2462 MHz, All Rates, All Modes, Peak

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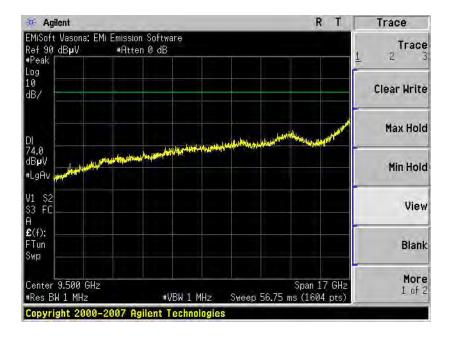
Radiated Receiver Spurs, All Rates, All Modes, Average



Radiated Receiver Spurs, All Rates, All Modes, Peak

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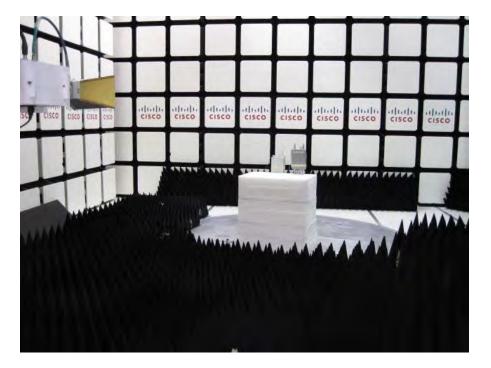
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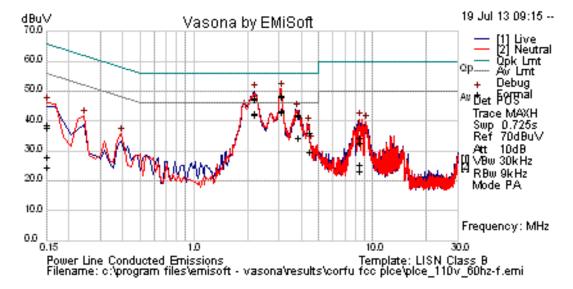
Radiated Test Setup 1–18GHz





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Conducted Emissions

Test Results Table

lest results lable										
No	Frequency MHz	Raw dBuV		Factors dB	Level dBuV	Measurement Type	Line	Limit dBuV	Margin dB	Pass /Fail
1	3.079	23.2	20.0	.0	43.2	Average	Neutral	46.0	-2.8	Pass
2	3.079	23.1	20.0	. 0	43.1	Average	Live	46.0	-2.9	Pass
3	2.183	22.3	20.0	. O	42.3	Average	Neutral	46.0	-3.7	Pass
4	2.184	22.2	20.0	. O	42.2	Average	Live	46.0	-3.8	Pass
5	3.079	28.3	20.0	. O	48.3	Quasi Peak	Neutral	56.0	-7.7	Pass
6	3.079	28.2	20.0	. O	48.2	Quasi Peak	Live	56.0	-7.8	Pass
7	2.183	27.4	20.0	. O	47.5	Quasi Peak	Neutral	56.0	-8.6	Pass
8	2.184	27.3	20.0	. O	47.3	Quasi Peak	Live	56.0	-8.7	Pass
9	3.819	14.3	20.0	. 1	34.3	Average	Neutral	46.0	-11.7	Pass
10	3.819	14.3	20.0	. 1	34.3	Average	Live	46.0	-11.7	Pass
11	3.819	22.0	20.0	. 1	42.0	Quasi Peak	Neutral	56.0	-14.0	Pass
12	3.819	21.6	20.0	. 1	41.6	Quasi Peak	Live	56.0	-14.4	Pass
13	4.420	9.5	20.0	. 1	29.5	Average	Neutral	46.0	-16.5	Pass
14	4.420	9.4	20.0	. 1	29.5	Average	Live	46.0	-16.5	Pass
15	4.420	16.1	20.0	. 1	36.2	Quasi Peak	Live	56.0	-19.8	Pass
16	4.420	16.0	20.0	. 1	36.1	Quasi Peak	Neutral	56.0	-19.9	Pass
17	8.469	5.0	20.1	.1	25.2	Average	Neutral	50.0	-24.8	Pass
					Page No	: 58 of 63				

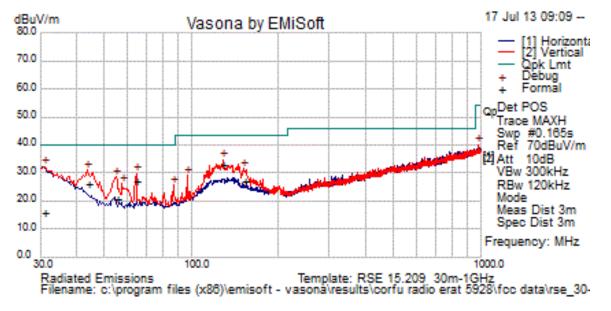
18	8.469	14.3	20.1	.1	34.5	Quasi Peak	Neutral	60.0	-25.5	Pass
19	8.469	2.8	20.1	.1	23.0	Average	Live	50.0	-27.0	Pass
20	.150	17.3	21.4	.1	38.8	Quasi Peak	Neutral	66.0	-27.2	Pass
21	8.469	12.6	20.1	.1	32.8	Quasi Peak	Live	60.0	-27.2	Pass
22	.150	6.3	21.4	.1	27.8	Average	Neutral	56.0	-28.2	Pass
23	.150	16.2	21.4	.1	37.7	Quasi Peak	Live	66.0	-28.3	Pass
24	.150	2.9	21.4	.1	24.4	Average	Live	56.0	-31.6	Pass

Conducted Emission Test Setup



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Radiated emissions

Radiated Emissions Setup 30-1000MHz



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Maximum Permissible Exposure (MPE) Calculations

15.247: U-NII devices are subject to the radio frequency radiation exposure requirements specified in Sec. 1.1307(b), Sec. 2.1091 and Sec. 2.1093 of this chapter, as appropriate. All equipment shall be considered to operate in a ``general population/uncontrolled" environment. Applications for equipment authorization of devices operating under this section must contain a statement confirming compliance with these requirements for both fundamental emissions and unwanted emissions. Technical information showing the basis for this statement must be submitted to the Commission upon request.

```
Given
```

 $E=\sqrt{(30^{*}P^{*}G)/d}$ and S=E^2/3770

where

E=Field Strength in Volts/meter P=Power in Watts G=Numeric Antenna Gain d=Distance in meters S=Power Density in mW/cm^2

Combine equations and rearrange the terms to express the distance as a function of the remaining variables:

d=√((30*P*G)/(3770*S))

Changing to units of power in mW and distance in cm, using: P(mW) = P(W) / 1000

d(cm) = 100*d(m)

vields

```
d=100*√((30*(P/1000)*G)/(3770*S))
d=0.282*√(P*G/S)
```

where

d=Distance in cm P=Power in mW G=Numerica Antenna Gain S=Power Density in mW/cm^2

```
Substituting the logarithmic form of power and gain using:
```

 $P(mW)=10^{(P(dBm)/10)}$ $G(numeric)=10^{(G(dBi)/10)}$

```
vields
```

d=0.282*10^((P+G)/20)/√S Equation (1) and s=((0.282*10^((P+G)/20))/d)^2 Equation (2) where d=MPE distance in cm

P=Power in dBm G=Antenna Gain in dBi S=Power Density in mW/cm^2

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Equation (1) and the measured peak power are used to calculate the MPE distance. Note that for mobile or fixed location transmitters such as an access point, the minimum separation distance is 20 cm even if the calculations indicate that the MPE distance may be less.

S=1mW/cm² maximum. The highest supported antenna gain is 6 dBi (9dBi with beamforming). Using the peak power levels recorded in the test report along with Equation 1 above, the MPE distances are calculated as follows.

Frequency (MHz)	Bit Rate (Mbps)	Power Density (mW/cm^2)	Peak Transmit Power (dBm)	Antenna Gain (dBi)	MPE Distance (cm)	Limit (cm)	Margin (cm)
2412	11	1	28.0	3	10.01	20	9.99
2437	11	1	29.0	3	11.23	20	8.77
2462	11	1	26.0	3	7.95	20	12.05
2412	54	1	17.0	3	2.82	20	17.18
2437	54	1	24.0	3	6.31	20	13.69
2462	54	1	18.0	3	3.16	20	16.84

MPE Calculations

To maintain compliance, installations will assure a separation distance of at least 20cm.

Using Equation 2, the MPE levels (s) at 20 cm are calculated as follows:

Frequency (MHz)	Bit Rate (Mbps)	MPE Distance (cm)	Peak Transmit Power (dBm)	Antenna Gain (dBi)	Power Density (mW/cm^2)	Limit (mW/cm^2)	Margin (mW/cm^2)
2412	11	20	28.0	3	0.25	1	0.75
2437	11	20	29.0	3	0.32	1	0.68
2462	11	20	26.0	3	0.16	1	0.84
2412	54	20	17.0	3	0.02	1	0.98
2437	54	20	24.0	3	0.10	1	0.90
2462	54	20	18.0	3	0.03	1	0.97

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Equip #	Manufacturer	Model	Description	Last Cal	Next Due
44940	Rohde & Schwarz	ESU	Spectrum Analyzer	15May13	15May14
40514	Agilent	E4440A	Spectrum Analyzer	12-NOV-12	12-NOV-13
47299	Agilent	PXA	Signal Analyzer	04Sept12	04Sept13
3003	HP	8373B	Signal Generator	26Mar13	26Mar14
30654	Sunol Sciences	JB1	Combination Antenna	16Oct12	16Oct13
4882	EMCO	3115	Horn Antenna	28Jun13	28Jun14
41935	Newport	iBTHP-5-DB9	Temperature Probe	25MAR13	25MAR14
5691	Miteq	NSP1800-25-S1	1GHz to 18GHz Pre- Amplifier	01Feb13	01Feb14
41979	Cisco	1840	18-40GHz EMI Test Head	09Jul13	09Jul14
25658	Micro-Coax	UFB311A-1-0840- 504504	RF Cable	13Feb13	13Feb14
21117	Micro-Coax	UFB311A-0-2484- 520520	RF Cable	24Aug12	24Aug13
48720	Huber Suhner	Sucoflex 106PA	RF Cable	20Aug12	20Aug13
47300	Agilent	MXE	EMI Receiver	13Nov12	13Nov13
8195	TTE	H613-150K-50- 21378	Filter	04Jan13	04Jan14
8496	Fischer Custom	FCC-450B-2.4-N	Pulse limiter	20May13	20May14
39110	Coleman	RG-223	RF Cable, 25 ft., N	29Nov12	29Nov13
29957	Fischer	FCC-LISN- 50/250-50-2-01	LISN	02Aug12	02Aug13
29959	Fischer	FCC-LISN-PA- NENA-5-15	LISN Adapter	02Aug12	02Aug13
44023	Fischer	M2	CDN	16Nov12	16Nov13
31919	Midwest Microwave	TRM-2048-MC- BNC-10	50Ohm Terminator	30Aug12	30Aug13
39162	Coleman	RG-223	RF Cable, 2 ft. BNC	09Oct12	09Oct13
25001	Micro-Coax	UFB197C-1-0240- 504504	RF Cable, 2 ft.	24Mar13	24Mar14

Appendix C: Test Equipment/Software Used to perform the test

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