

**Conducted Test Setup Photo** 

Page No: 239 of 252

### Appendix B: Emission Test Results

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

## **Radiated Spurious Emissions**

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.

Span:	1GHz – 18 GHz
Reference Level:	80 dBuV
Attenuation:	10 dB
Sweep Time:	Coupled
Resolution Bandwidth:	1MHz
Video Bandwidth:	1 MHz for peak, 10 Hz for average
Detector:	Peak

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

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

Page No: 240 of 252

Frequency (MHz)	Mode	Data Rate (Mbps)	Spurious Emission Level (dBuV/m)	Limit (dBuV/m)
	Non HT-20, 6 to 54 Mbps	6	<54	54
	Non HT-20 Beam Forming, 6 to 54 Mbps	6	<54	54
5500	HT-20, M0 to M23	m0	<54	54
	HT-20 STBC, M0 to M7	m0	<54	54
	HT-20 Beam Forming, M0 to M23	m0	<54	54
	Non HT-20, 6 to 54 Mbps	6	<54	54
	Non HT-20 Beam Forming, 6 to 54 Mbps	6	<54	54
5700	HT-20, M0 to M23	m0	<54	54
	HT-20 STBC, M0 to M7	m0	<54	54
	HT-20 Beam Forming, M0 to M23	m0	<54	54
	· · · · · ·	-	-	
	Non HT-40 Duplicate, 6-54 Mbps		<54	54
	HT-40, M0 to M23	6	<54	54
5500/5520	HT-40 STBC, M0 to M7	m0	<54	54
	HT-40 Beam Forming, M0 to M23	m0	<54	54

5660/5680	Non HT-40 Duplicate, 6-54 Mbps	6	<54	54
	HT-40, M0 to M23	m0	<54	54
	HT-40 STBC, M0 to M7	m0	<54	54
	HT-40 Beam Forming, M0 to M23	m0	<54	54

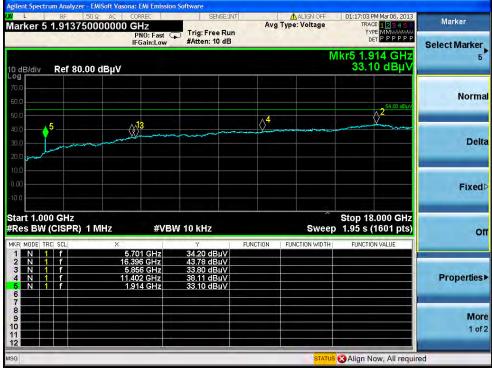
Page No: 241 of 252



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### Radiated Transmitter Spurs, 5500 MHz, All Rates, All Modes, Average

Radiated Transmitter Spurs, 5700 MHz, All Rates, All Modes, Average

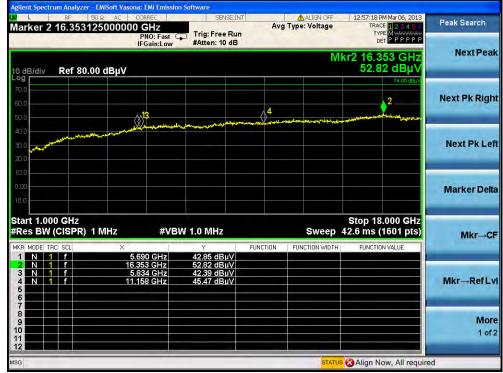


Radiated Transmitter Spurs, 5500 MHz, All Rates, All Modes, Peak

Page No: 242 of 252

	11:35:53 AM Mar 06, 2013	ALIGN OFF		SENSE:IN	CORREC	50 Ω AC C	RF	100	L
Marker Select Marker	TRACE 123456 TYPE MWWWWWW DET PPPPP	Type: Voltage		Trig: Free Run #Atten: 10 dB	PNO: Fast IFGain:Low	125000000	0.9981	4 1	rker
4	(r4 10.998 GHz 45.73 dBµV	Mk				.00 dBµV	Ref 80.	v	dB/di∖
	74.00 dBµV								
Norma	×2								
10.01	- Anne		<mark>≜</mark> 4		1.2	^ 1			
		erstaten and testing of	and a start of the second designed and the second desi	- Salter Margaret William March 18-	Sala and a second se				
Delt						and all and a start of the star	- Mary Marked wall		
									1 miles
Fixed									<u> </u>
Fixed									- 10
	Stop 18.000 GHz						GHz	000	
0	42.6 ms (1601 pts)	Sweep 4		1.0 MHz	#VBW	1 MHz			
	FUNCTION VALUE	FUNCTION WIDTH	FUNCTION	Y		×			MODE
				42.24 dBµV 52.42 dBµV	499 GHz 438 GHz		f	1	N
				40.66 dBµV	824 GHz	5.8	f	1	N
				45.73 dBµV	998 GHz	10.9	f	1	N
Properties				40.10 00.01	550 OT 12				
Properties									
Properties Mor 1 of									

Radiated Transmitter Spurs, 5700 MHz, All Rates, All Modes, Peak



Page No: 243 of 252

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### **Receiver Radiated Spurious Emissions**

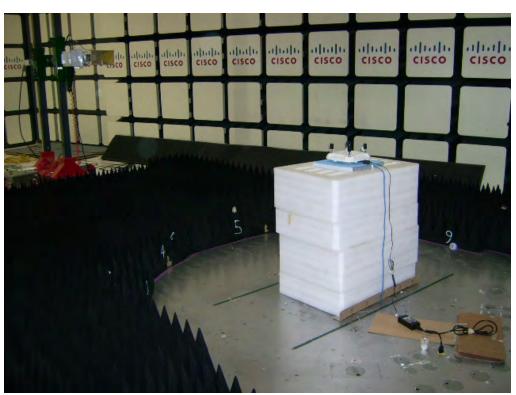


Radiated Receiver Spurs, All Rates, All Modes, Average

Radiated Receiver Spurs, All Rates, All Modes, Peak



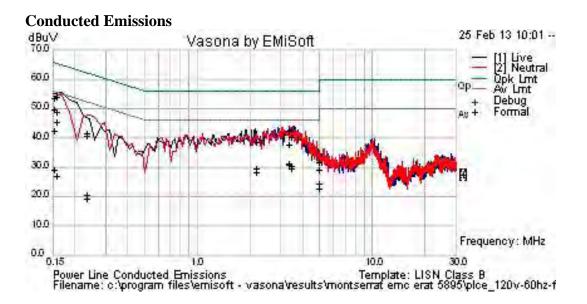
Page No: 244 of 252



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**Radiated Test Setup Photo** 

Page No: 245 of 252



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	Raw dBuV	Cable Loss			Measureme nt Type		Limit dBuV	Margin dB	Pass /Fail	Comments
0.15736			-						Pass	
0.15736	32.8	21.3	0.1	54.2	Qp	N	65.6	-11.4	Pass	
0.15288	32	21.4	0.1	53.5	Qp	N	65.8	-12.4	Pass	
3.424	22.7	20	0	42.8	Qp	N	56	-13.2	Pass	
0.15288	21	21.4	0.1	42.4	Av	L	55.8	-13.4	Pass	
3.351	22.5	20	0.1	42.6	Qp	N	56	-13.4	Pass	
3.351	11.1	20	0.1	31.2	Av	N	46	-14.8	Pass	
3.351	10.9	20	0.1	30.9	Av	L	46	-15.1	Pass	
3.424	20.3	20	0 0	40.3	Qp	L	56	-15.7	Pass	
3.424	10.2	20	0 0	30.3	Av	N	46	-15.7	Pass	
0.15288	28.1	21.4	0.1	49.6	Qp	L	65.8	-16.3	Pass	
3.424	9.4	20	0 0	29.5	Av	L	46	-16.5	Pass	
2.158	9.4	20	0	29.5	Av	N	46	-16.5	Pass	
0.15736	27.5	21.3	0.1	48.9	Qp	L	65.6	-16.7	Pass	
2.158	18.6	20	0 0	38.7	Qp	N	56	-17.3	Pass	
2.158	18.6	20	0	38.6	Qp	L	56	-17.4	Pass	
2.158	8.5	20	0	28.5	Av	L	46	-17.5	Pass	
3.351	17.6	20	0.1	37.6	Qp	L	56	-18.4	Pass	
0.23346	20.6	20.9	0	41.5	Qp	L	62.3			
0.23346	19.8	20.9	0	40.7	Qp	N	62.3	-21.6	Pass	
4.916	4.3	20	0 0			N	46	-21.6	Pass	
4.916	2.5	20	0 0	22.6	Av	L	46	-23.4	Pass	
4.916	11.8	20	0	31.9	Qp	N	56	-24.1	Pass	

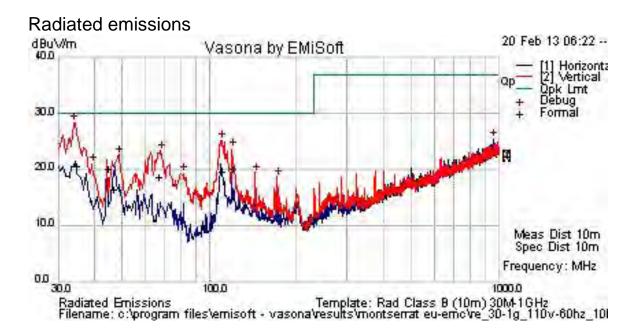
Page No: 246 of 252

Frequency	Raw	Cable	Factors	Level	Measureme	Line	Limit	Margin	Pass /Fail	Comments
MHz	dBuV	Loss	dB	dBuV	nt Type		dBuV	dB		
0.15288	7.8	21.4	0.1	29.2	Av	N	55.8	-26.6	Pass	
4.916	9	20	0	29.1	Qp	L	. 56	-26.9	Pass	
0.15736	5.7	21.3	0.1	27.1	Av	L	. 55.6	-28.5	Pass	
0.23346	-0.1	20.9	0	20.8	Av	N	52.3	-31.6	Pass	
0.23346	-1.5	20.9	0	19.4	Av	L	. 52.3	-32.9	Pass	

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Page No: 247 of 252



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#### **Test Results Table**

10011100			-		-				-	-		-
Frequency	Raw	Cable	AF dB	Level	Measureme	Pol	Hgt	Azt	Limit	Margin	Pass /Fail	Comments
MHz	dBuV	Loss		dBuV/m	nt Type		cm	Deg	dBuV/m	dB		
34.65	30.1	0.6	-10.1	20.6	Qp	V	124	218	30	-9.4	Pass	
44.239	36.6	0.7	-17.2	20.2	Qp	V	198	221	30	-9.8	Pass	
120.013	32.5	1.2	-13.6	20.2	Qp	V	135	87	30	-9.8	Pass	
110.373	33.2	1.2	-14.7	19.7	Qp	V	131	175	30	-10.3	Pass	
66.612	37.4	1	-19.7	18.6	Qp	V	102	271	30	-11.4	Pass	
46.154	33.9	0.7	-18.3	16.3	Qp	V	254	195	30	-13.7	Pass	

Page No: 248 of 252

