

To: FCC 47 CFR Part 15.247 & IC RSS-210

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7.6.9 AP-ANT-7 - Transmitter Peak Emissions (RSS-210/RSS-GEN)

2400 - 2483.5 MHz: 802.11b

Test Fr	rea.	2412 M	Hz					F	ngineer	CSB			
		802.11		9					mp (°C)	21			
Freq. Rai		2400 -	•						Hum .(%)	38			
Power Sett		6.5 in A					D.			1002			
Antei		AP-AN		utility					•				
		AP-AN	1-7					Duty C	Cycle (%)	100			
Test Note													
Test Note	es 2												
VIICOIVILAD	dBuV/m Vasona by EMiSoft 26 Apr 10 10:25 1256 11												
Formally i	mea	neasured emission peaks											
	Raw BuV	Cable Loss	AF dB	Level dBuV/m	M easurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	M argin dB	Pass /Fail	Comments	
2413.360 7	75.0	7.1	30.4	112.6	Peak [Scan]	>						PK	
Legend: T	X = T	Fransmitter Emissions; DIG = Digital Emissions; FUND = Fundamental; WB = Wideband Emission											



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Test	Eroa	2437 N	1⊔-						ngineer	CSB		
	- 1	802.11								21		
									mp (°C)			
Freq. R		2400 -							Hum .(%)	38		
Power Se	etting	6 in AR		tility			Pr	ess.	(m Bars)	1002		
Ant	enna	AP-AN	T-7					Duty C	cycle (%)	100		
Test No	tes 1											
Test No	tes 2											
Formally	mea	PK 1400 : nt-7 pk\AR	Det Trace Swp # Ref 1 Att 1 VBw 1 RBw 1 Meas Spec 1 Frequence	07dBu\/i 0dB 000kHz 000kHz PAPS Dist 3m Dist 3m	7							
Frequency M Hz	Raw dBuV	Cable Loss	A F dB	Level dBuV/m	M easurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	M argin dB	Pass /Fail	Comments
0400 540	76.4	7.1	30.5	114.0	Peak [Scan]	V						PK
2438.549		ransmitter Emissions; DIG = Digital Emissions; FUND = Fundamental; WB = Wideband Emission										



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Test	Freq.	2462 N	lHz					E	ngineer	CSB		
Va	ariant	802.11	b; 1 Mb:	s				Te	mp (°C)	21		
Freq. R	lange	2400 -	2483.5	MHz				Rel. I	lum .(%)	38		
Power Se	etting	6 in AR	T test u	ıtility			Pr	ess.	(m Bars)	1002		
Ant	enna	AP-AN	T-7					Duty (ycle (%)	100		
Test No	tes 1									-		
Test No	tes 2											
MicoMLabs dBuV/m Vasona by EMiSoft 26 Apr 10 10:38 [1] Horizont:												
Frequency MHz	Raw dBuV	Cable Loss	A F dB	Level dBuV/m	M easurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	M argin dB	Pass /Fail	Comments
2463.878	74.7	7.2	30.6	112.5	Peak [Scan]	V						PK
Legend:	TX = T	Transmitter Emissions; DIG = Digital Emissions; FUND = Fundamental; WB = Wideband Emission										



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2400 - 2483.5 MHz: 802.11g

Test	Freq.	2412 M	lHz					E	ngineer	CSB		
V	ariant	802.11	g; 6 Mb	s				Te	mp (°C)	21		
Freq. F	Range	2400 -	2483.5	MHz				Re I.	Hum .(%)	38		
Power S	etting	13 in A	RT test	utility			Pi	ress.	(m Bars)	1002		
An	tenna	AP-AN	T-7					Duty (Cycle (%)	100		
Test No	otes 1											
Test No	otes 2											
MiCeiM		Det Trace Swp # Ref 1 Att 1: VBw 1: RBw 1 Mode Meas	Horizon Vertical Limit ebug 0.05s 07dBu\/ 0dB 000kHz 000kHz 000kHz 000kHz 000kHz 000kHz 000kHz 000kHz 000kHz	t: rr								
Frequency	Raw	Cable	AF	Level	M easurement		Hgt	Azt	Limit	M argin	Pass	
M Hz	dBuV	Loss	dB	dBuV/m	Туре	Pol	cm	Deg	dBuV/m	dB	/Fail	Comments
	85.2	7.1	30.4	122.7	Peak [Scan]	V						PK
2406.680	00.2											
2406.680 Legend:		ransmit	ter Emis	sions; DK	G = Digital Emissi	ons; F	UND =	Funda	mental; W	B = Wide	band Er	nission



PK = Peak emission of fundamental

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Test	Freq.	2437 N	lHz					Е	ngineer	CSB		
Va	ariant	802.11	g; 6 Mb:	s				Те	mp (°C)	21		
Freq. R	Range	2400 -	2483.5	MHz				Rel. I	Hum .(%)	38		
Power Se	etting	13 in A	RT test	utility			Pr	ess.	(m Bars)	1002		
Ant	tenna	AP-AN	T-7					Duty (Cycle (%)	100		
Test No	tes 1											
Test No	tes 2											
MiC@M.												
Frequency MHz	Raw	Cable	A F	Level	M easurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	M argin dB	Pass /Fail	Comments
2444.116	86.0	7.2	30.5	123.7	Peak [Scan]	V		9				PK
Legend:	TX = T	Transmitter Emissions; DIG = Digital Emissions; FUND = Fundamental; WB = Wideband Emission										



PK = Peak emission of fundamental

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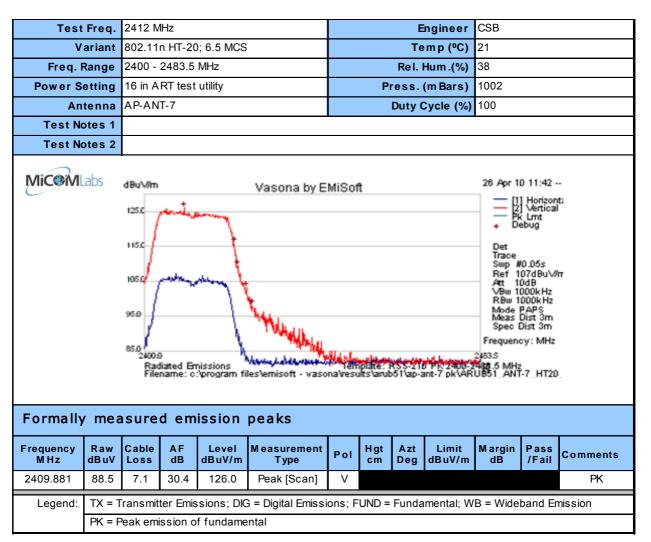
Test	Freq.	2462 N	lHz					E	ngineer	CSB				
Va	ariant	802.11	g; 6 Mbs	S				Те	mp (°C)	21				
Freq. F	Range	2400 -	2483.5	MHz				Rel. I	Hum .(%)	38				
Power Se	etting	13 in A	RT test	utility			Pr	ess.	(m Bars)	1002				
Ant	tenna	AP-AN	T-7					Duty C	Cycle (%)	100				
Test No	tes 1													
Test No	tes 2													
	dBuV/m Vasona by EMiSoft 26 Apr 10 11:35 [1] Horizont: Vertical Pk Lmt Debug													
Frequency M Hz	Raw dBuV	Cable Loss	A F dB	Level dBuV/m	M easurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	M argin dB	Pass /Fail	Comments		
2467.913	84.4	7.2	30.6	122.1	Peak [Scan]	V						PK		
Legend:	TX = T	ransmit	ter Emis	: Transmitter Emissions; DIG = Digital Emissions; FUND = Fundamental; WB = Wideband Emission										



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2400 - 2483.5 MHz: 802.11n HT-20





PK = Peak emission of fundamental

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Freq. Ra		2437 N	II IZ									
Freq. Ra	iriant		- LIT 00	. 0 5 1400					ngineer	CSB		
Power Set				; 6.5 MCS					mp (ºC)	21		
	ange	2400 -	2483.5	MHz				Rel. I	Hum .(%)	38		
Ante	tting	16 in A	RT test	utility			Pr	ess.	(m Bars)	1002		
	enna	AP-AN	T-7					Duty (cycle (%)	100		
Test Not	tes 1									-		
Test Not	tes 2											
MicciMLabs dBuV/m Vasona by EMiSoft 125.0 Det Trace Sup #0.05s Sup #0.05s Ref 107dBuV/m Att 10dB VBw 1000kHz Mode PAPS Meas Dist 3m Spec Dist 3m Frequency: MHz 2453.5 Template: RSS-210 FR 2400-2432.5 MHz Fillename: o:\program filles\temisoft - vasona\tesults\tarub51\ap-ant-7 pk\ARU 651_ANT-7_HT20_												
	Raw	Cable	AF	Level	M easurement	Pol	Hgt	Azt	Limit	M argin	Pass	Comments
	dBuV	Loss	dB	dBuV/m	Туре		cm	Deg	dBuV/m	dB	/Fail	
2441.333	89.5	7.2	30.5	127.2	Peak [Scan]	٧						PK



PK = Peak emission of fundamental

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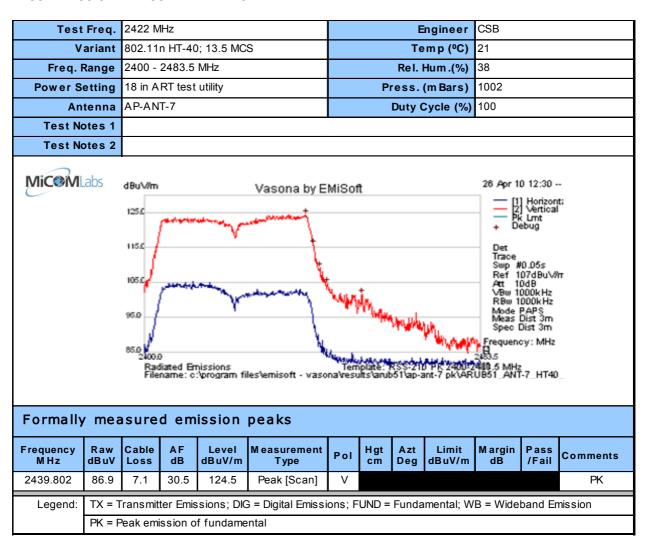
Test	Freq.	2462 N	1Hz					E	ngineer	CSB		
V	ariant	802.11	n HT-20); 6.5 MCS				Те	mp (°C)	21		
Freq. F	Range	2400 -	2483.5	MHz				Rel. I	Hum .(%)	38		
Power Se	etting	15.5 in	ART te	st utility			Pr	ess.	(m Bars)	1002		
An	tenna	AP-AN	T-7					Duty (Cycle (%)	100		
Test No	tes 1											
Test No	ites 2											
MicoMLabs dBuVim Vasona by EMiSoft 26 Apr 10 12:04 [1] Horizont; [2] Vertical Pk Lmt Debug Det Trace Sup #0.05s Ref 107dBuV/in At 10dB V8u 1000kHz R8u 1000kHz R9u 1000kHz R8u 1000kHz R8u 1000kHz R9u 1000kHz R8u 1000kHz R9u 10												
Frequency M Hz	Raw dBuV	Cable Loss	A F dB	Level dBuV/m	M easurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	M argin dB	Pass /Fail	Comments
2467.774	86.7	7.2	30.6	124.5	Peak [Scan]	٧						PK
Legend:	TX = T	Transmitter Emissions; DIG = Digital Emissions; FUND = Fundamental; WB = Wideband Emission										



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2400 - 2483.5 MHz: 802.11n HT-40





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		_								_			
Test	Freq.	2437 N	lHz					E	ngineer	CSB			
V	ariant	802.11	n HT-40); 13.5 MC	S			Te	mp (°C)	21			
Freq. F	Range	2400 -	2483.5	MHz				Rel.	Hum .(%)	38			
Power Se	etting	18 in A	RT test	utility			Pr	ess.	(m Bars)	1002			
An	tenna	AP-AN	T-7					Duty (Cycle (%)	100			
Test No	otes 1												
Test No	otes 2												
MiccoMLabs dBuV/m Vasona by EMiSoft 26 Apr 10 12:48 [1] Horizont: [2] Vertical Pk Imt Debug Det Trace Swp #0.05s Ref 107dBuV/m Art 10dB VBw 1000kHz Rbw 100													
Frequency M Hz	Raw dBuV	Cable Loss	A F dB	Level dBuV/m	M easurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments	
2447.038	88.0	7.2	30.5	125.7	Peak [Scan]	V						PK	
Legend:	TX = T	ransmit	Insmitter Emissions; DIG = Digital Emissions; FUND = Fundamental; WB = Wideband Emission										
	PK = F	Peak emi	ssion o	f fundame	ntal								



PK = Peak emission of fundamental

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Test	Freq.	2452 N	1Hz					E	ngineer	CSB			
V	ariant	802.11	n HT-40	; 13.5 MC	S			Те	mp (°C)	21			
Freq. F	Range	2400 -	2483.5	MHz				Rel. I	Hum .(%)	38			
Power S	etting	18 in A	RT test	utility			Pr	ess.	(m Bars)	1002			
An	tenna	AP-AN	T-7					Duty (Cycle (%)	100			
Test No	otes 1												
Test No	otes 2												
MiC@M.													
Frequency M Hz	Raw dBuV	Cable Loss	A F dB	Level dBuV/m	M easurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	M argin dB	Pass /Fail	Comments	
2447.595	87.0	7.2	30.5	124.7	Peak [Scan]	٧						PK	
Legend:	TX = T	K = Transmitter Emissions; DIG = Digital Emissions; FUND = Fundamental; WB = Wideband Emission											

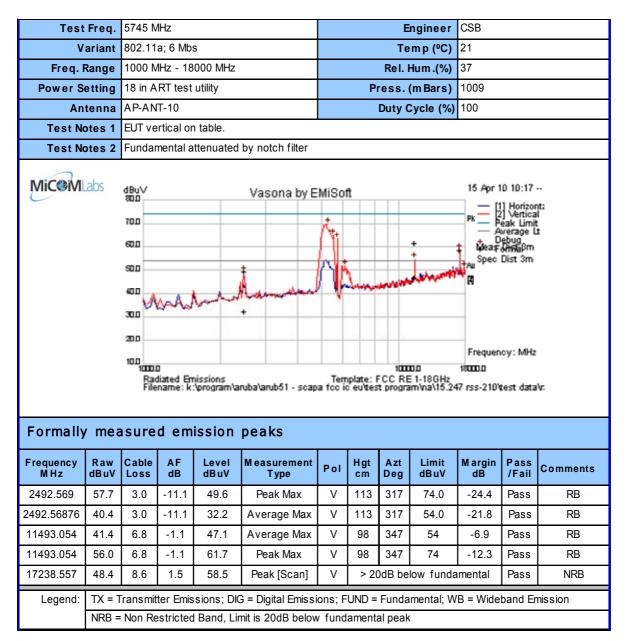


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7.6.10 AP-ANT-10 - Transmitter Radiated Spurious Emissions – Above 1 GHz

5725 - 5850 MHz: 802.11a



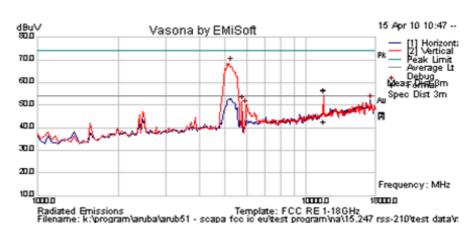


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Test Freq.	5785 MHz	Engineer	CSB
Variant	802.11a; 6 Mbs	Temp (°C)	21
Freq. Range	1000 MHz - 18000 MHz	Rel. Hum.(%)	37
Power Setting	13.5 in ART test utility	Press. (m Bars)	1009
Antenna	AP-ANT-10	Duty Cycle (%)	100
Test Notes 1	EUT vertical on table.		
Test Notes 2	Fundamental attenuated by notch filter		





Formally measured emission peaks

F	requency M Hz	Raw dBuV	Cable Loss	A F dB	Level dBuV	M easurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	M argin dB	Pass /Fail	Comments		
•	11569.058	50.9	6.8	-1.2	56.5	Peak Max	V	98	350	74.0	-17.5	Pass	RB		
	11569.058	36.9	6.8	-1.2	42.6	Average Max	V	98	350	54.0	-11.5	Pass	RB		
•	17296.592	41.9	8.7	1.5	52.1	Peak [Scan]	Н	> 20dB below fundamental				Pass	NRB		

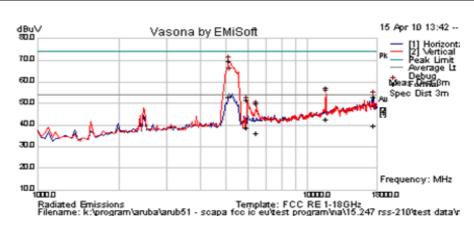


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Test Freq.	5825 MHz	Engineer	CSB
Variant	802.11a; 6 Mbs	Temp (°C)	21
Freq. Range	1000 MHz - 18000 MHz	Rel. Hum.(%)	37
Power Setting	10.5 in ART test utility	Press. (mBars)	1009
Antenna	AP-ANT-10	Duty Cycle (%)	100
Test Notes 1	EUT vertical on table.		
Test Notes 2	Fundamental attenuated by notch filter		





Formally measured emission peaks

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass /Fail	Comments
5088.064	74.0	4.6	-8.8	69.8	Peak Max	V	132	77	74.0	-4.2	Pass	RB
5088.065	57.1	4.6	-8.8	52.9	Average	V	133	77	54.0	-1.1	Pass	RB
5969.691	55.1	4.9	-8.2	51.8	Peak Max	V	> 2	20dB be	elow fundar	nental	Pass	NRB
6478.221	51.4	5.1	-6.5	50.0	Peak Max	٧	> 2	20dB be	elow fundar	nental	Pass	NRB
11650.093	52.2	6.8	-1.9	57.1	Peak Max	٧	101	66	74	-16.9	Pass	RB
11650.093	37.5	6.8	-1.9	42.5	Average Max	V	101	66	54	-11.5	Pass	RB
17545.203	42.9	8.8	1.2	52.9	Peak Max	V	> 2	20dB be	low fundar	nental	Pass	NRB



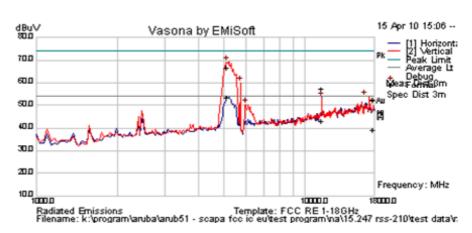
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5725 - 5850 MHz: 802.11n HT-20

Test Freq.	5745 MHz	Engineer	CSB
Variant	802.11n HT-20; 6.5 MCS	Temp (°C)	21
Freq. Range	1000 MHz - 18000 MHz	Rel. Hum.(%)	37
Power Setting	9.5 in ART test utility	Press. (m Bars)	1009
Antenna	AP-ANT-10	Duty Cycle (%)	100
Test Notes 1	EUT vertical on table.		
Test Notes 2	Fundamental attenuated by notch filter		





Formally measured emission peaks

Frequency M Hz	Raw dBuV	Cable Loss	A F dB	Level dB uV	M easurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass /Fail	Comments
5099.320	57.7	4.6	-8.8	53.5	Average	V	112	77	54.0	-0.5	Pass	RB
5099.32	70.7	4.6	-8.8	66.5	Peak	V	112	77	74.0	-7.5	Pass	RB
5984.449	53.6	4.9	-8.3	50.2	Peak [Scan]	V	> 20	dB be	low funda	mental	Pass	NRB
11492.305	37.4	6.8	-1.1	43.1	Average Max	V	98	0	54	-10.9	Pass	RB
11492.305	51.7	6.8	-1.1	57.3	Peak Max	V	98	0	74	-16.7	Pass	RB
16646.413	44.2	8.7	1.0	53.9	Peak [Scan]	Η	> 20	dB be	low funda	mental	Pass	NRB
17846.573	29.8	8.8	0.6	39.2	Average Max	V	164	320	54	-14.8	Pass	RB
17846.573	43.0	8.8	0.6	52.4	Peak Max	Н	151	178	74	-21.6	Pass	RB

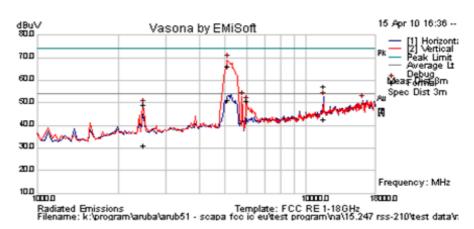


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Test Freq.	5785 MHz	Engineer	CSB
Variant	802.11n HT-20; 6.5 MCS	Temp (°C)	21
Freq. Range	1000 MHz - 18000 MHz	Rel. Hum.(%)	37
Power Setting	9 in ART test utility	Press. (m Bars)	1009
Antenna	AP-ANT-10	Duty Cycle (%)	100
Test Notes 1	EUT vertical on table.		
Test Notes 2	Fundamental attenuated by notch filter		





Formally measured emission peaks

Frequency M Hz	Raw dBuV	Cable Loss	AF dB	Level dBuV	M easurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	M argin dB	Pass /Fail	Comments
2490.240	39.3	3.0	-11.1	31.2	Average Max	V	138	312	54.0	-22.8	Pass	RB
2490.24	57.1	3.0	-11.1	49.0	Peak Max	V	138	312	74.0	-25.0	Pass	RB
5097.956	55.3	4.6	-8.8	51.1	Average	V	112	78	54	-2.9	Pass	RB
5097.956	70.3	4.6	-8.8	66.1	Peak	V	112	78	74	-7.9	Pass	RB
5983.647	54.0	4.9	-8.3	50.6	Peak [Scan]	V	> 20	dB be	low funda	mental	Pass	NRB
11569.659	36.9	6.8	-1.2	42.5	Average Max	V	98	350	54	-11.5	Pass	RB
11569.659	51.5	6.8	-1.2	57.1	Peak Max	V	98	350	74	-16.9	Pass	RB

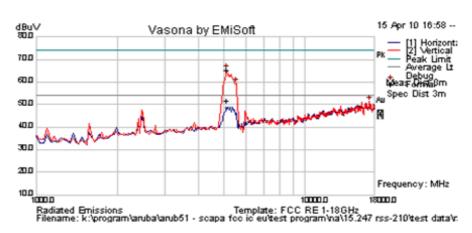


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Test Freq.	5825 MHz	Engineer	CSB
Variant	802.11n HT-20; 6.5 MCS	Temp (°C)	21
Freq. Range	1000 MHz - 18000 MHz	Rel. Hum.(%)	37
Power Setting	9 in ART test utility	Press. (m Bars)	1009
Antenna	AP-ANT-10	Duty Cycle (%)	100
Test Notes 1	EUT vertical on table.		
Test Notes 2	Fundamental attenuated by notch filter		





Formally measured emission peaks

Frequency M Hz	Raw dBuV	Cable Loss	A F dB	Level dBuV	M easurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	M argin dB	Pass /Fail	Comments
5097.583	69.3	4.6	-8.8	65.1	Peak Max	V	138	362	74.0	-8.9	Pass	RB
5097.583	56.0	4.6	-8.8	51.8	Average Max	V	138	362	54.0	-2.2	Pass	RB



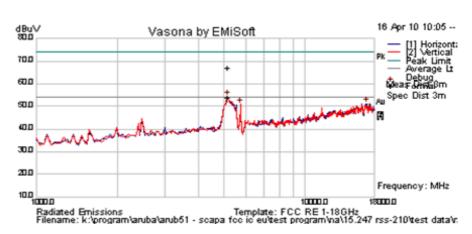
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5725 - 5850 MHz: 802.11n HT-40

Test Freq.	5755 MHz	Engineer	CSB						
Variant	802.11n HT-40; 13.5 MCS	Temp (°C)	21						
Freq. Range	1000 MHz - 18000 MHz	Rel. Hum.(%)	37						
Power Setting	10.5 in ART test utility	Press. (m Bars)	1009						
Antenna	AP-ANT-10	Duty Cycle (%)	100						
Test Notes 1	EUT vertical on table.	UT vertical on table.							
Test Notes 2	Fundamental attenuated by notch filter								





Formally measured emission peaks

Frequency M Hz	Raw dBuV	Cable Loss	A F dB	Level dB uV	M easurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	M argin dB	Pass /Fail	Comments
5140.638	71.9	4.6	-9.4	67.1	Peak Max	٧	113	58	74.0	-6.9	Pass	RB
5139.5561	58.3	4.6	-9.4	53.6	Average Max	V	103	14	54.0	-0.4	Pass	RB

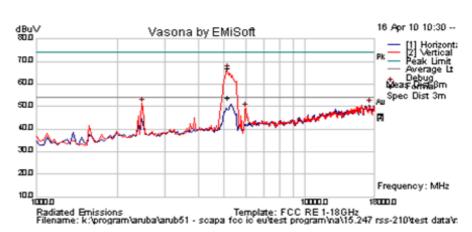


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Test Freq.	5785 MHz	Engineer	CSB
Variant	802.11n; HT-40; 13.5 MCS	Temp (°C)	21
Freq. Range	1000 MHz - 18000 MHz	Rel. Hum.(%)	37
Power Setting	10.5 in ART test utility	Press. (m Bars)	1009
Antenna	AP-ANT-10	Duty Cycle (%)	100
Test Notes 1	EUT vertical on table.	•	
Test Notes 2	Fundamental attenuated by notch filter		





Formally measured emission peaks

Frequency M Hz	Raw dBuV	Cable Loss	A F dB	Level dBuV	M easurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	M argin dB	Pass /Fail	Comments
5140.201	71.9	4.6	-9.4	67.1	Peak Max	V	101	74	74.0	-6.9	Pass	RB
5140.201	58.7	4.6	-9.4	53.9	Average Max	V	101	74	54.0	-0.1	Pass	RB

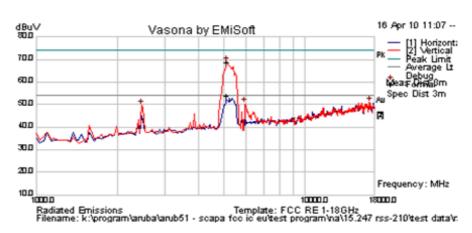


To: FCC 47 CFR Part 15.247 & IC RSS-210

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Test Freq.	5815 MHz	Engineer	CSB
Variant	802.11n; HT-40; 13.5 MCS	Temp (°C)	21
Freq. Range	1000 MHz - 18000 MHz	Rel. Hum.(%)	37
Power Setting	9.5 in ART test utility	Press. (m Bars)	1009
Antenna	AP-ANT-10	Duty Cycle (%)	100
Test Notes 1	EUT vertical on table.		
Test Notes 2	Fundamental attenuated by notch filter		





Formally measured emission peaks

Frequency M Hz	Raw dBuV	Cable Loss	A F dB	Level dBuV	M easurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	M argin dB	Pass /Fail	Comments
5097.099	72.8	4.6	-8.8	68.7	Peak Max	V	115	60	74.0	-5.3	Pass	RB
5097.049	57.8	4.6	-8.8	53.7	Average	V	115	60	54.0	-0.3	Pass	RB

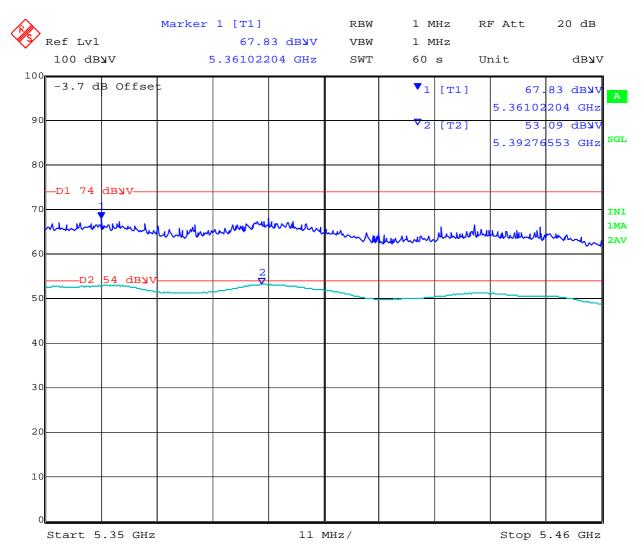


To: FCC 47 CFR Part 15.247 & IC RSS-210

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7.6.11 AP-ANT-10 - Transmitter Band edge spurious emissions

5745 MHz - 802.11a; 5350 - 5460 MHz



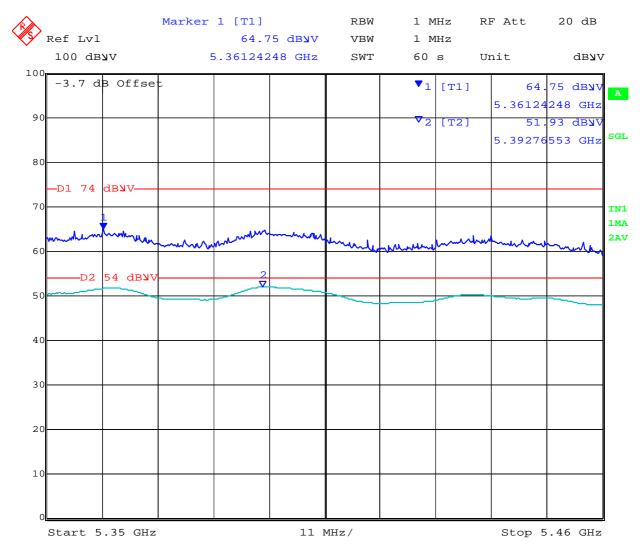
Date: 28.APR.2010 14:09:00



To: FCC 47 CFR Part 15.247 & IC RSS-210

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5745 MHz - 802.11n HT-20; 5350 - 5460 MHz



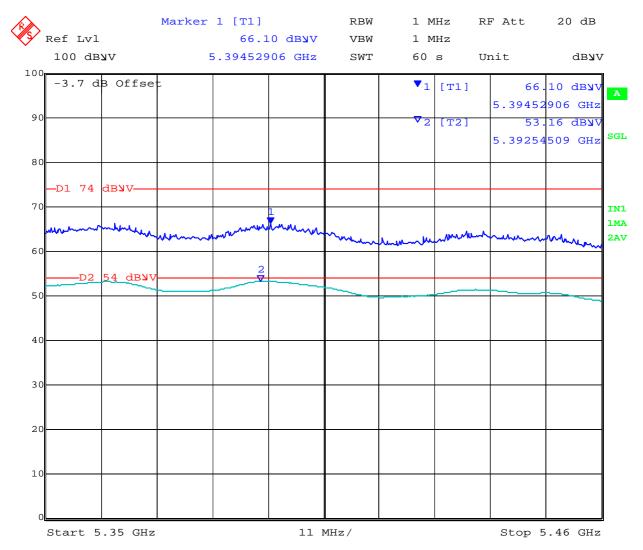
Date: 28.APR.2010 14:18:18



To: FCC 47 CFR Part 15.247 & IC RSS-210

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5755 MHz - 802.11n HT-40; 5350 - 5460 MHz



Date: 28.APR.2010 14:20:55

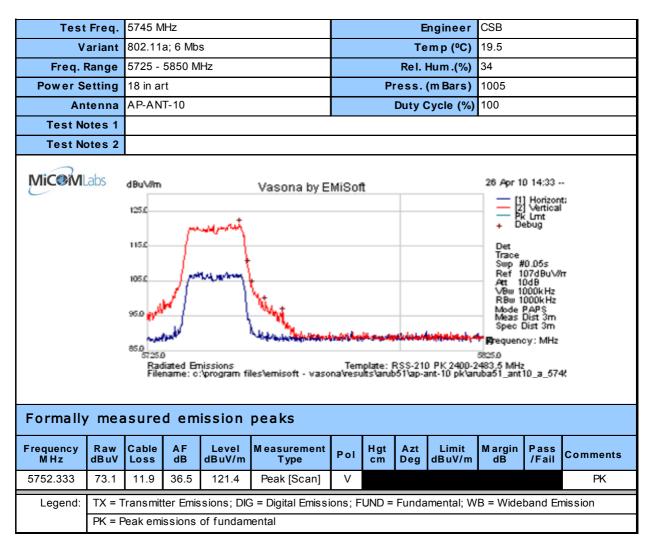


To: FCC 47 CFR Part 15.247 & IC RSS-210

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7.6.12 AP-ANT-10 - Transmitter Peak Emissions (RSS-210/RSS-GEN)

5725 - 5850 MHz: 802.11a

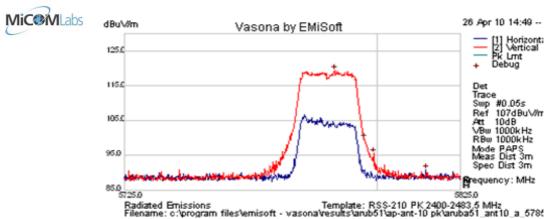




To: FCC 47 CFR Part 15.247 & IC RSS-210

Serial #: ARUB51-U1 Rev A Issue Date: 18th May 2010 Page: Page 331 of 372

Test Freq.	5785 MHz		Engineer	CSB
Variant	802.11a; 6 Mbs		Temp (°C)	19.5
Freq. Range	5725 - 5850 MHz		Rel. Hum.(%)	34
Power Setting	13.5 in art		Press. (m Bars)	1005
Antenna	AP-ANT-10		Duty Cycle (%)	100
Test Notes 1		-		•
Test Notes 2				
MiC@M Labs	dBu∖√lm	Vasona by F	MiSoff	26 Apr 10 14:49



Formally measured emission peaks

		Cable Loss		Level dBuV/m	M easurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	M argin dB	Pass /Fail	Comments
5787.500	71.0	12.0	36.5	119.5	Peak [Scan]	V						PK

Legend: TX = Transmitter Emissions; DIG = Digital Emissions; FUND = Fundamental; WB = Wideband Emission
PK = Peak emissions of fundamental



PK = Peak emissions of fundamental

Title: Aruba AP-92/93 802.11a/b/g/n Wireless AP

To: FCC 47 CFR Part 15.247 & IC RSS-210

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Test	Freq.	5825 N	lHz					E	ngineer	CSB			
Va	riant	802.11	a; 6 Mb	S				Te	mp (°C)	19.5			
Freq. R	ange	5725 -	5850 M	Hz				Rel.	Hum .(%)	34			
Power Se	tting	10.5 in	art				Pı	ress.	(m Bars)	1005			
Ant	enna	AP-AN	T-10					Duty (Cycle (%)	100			
Test No	tes 1												
Test No	tes 2												
			fiated En name: o		les\emisoft - vaso	Terr	plate: i	RSS-211 611 ap-a	الميمين	Det Trace Swp # Ref 1 Att 11 VBu 11 RBw 1 Mode Meas Spec 6	07dBu\/i 0dB 000kHz 000kHz PAPS Dist 3m Dist 3m	т	
Formally	mea	surea	emiss	sion pea	ıks			<u> </u>					
Frequency M Hz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	M easurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments	
5819.375	67.4	12.0	36.6	115.9	Peak [Scan]	V						PK	
Legend:	TX = T	ransmit	ter Emis	sions: DIC	S = Digital Emissi	ons: F	UND =	Funda	mental: W	B = Wide	band En	nission	



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5725 - 5850 MHz: 802.11n HT-20

Test	Freq.	5745 M	lHz					E	ngineer	CSB			
V	ariant	802.11	n HT-20); 6.5 MCS				Те	mp (°C)	19.5			
Freq. I	Range	5725 -	5850 M	Hz				Rel.	Hum .(%)	34			
Power S	etting	9.5 in a	rt				Pı	ess.	(m Bars)	1005			
An	tenna	AP-AN	T-10					Duty (Cycle (%)	100			
Test No	otes 1												
Test No	otes 2												
Test Notes 2 MiCOMLabs dBuV/m Vasona by EMiSoft 26 Apr 10 15:01 [1] Horizont: [2] Vertical Pk Lmt Debug Det Trace Sup #0.05s Ref 107dBuV/m Act 10dB VBb 1000kHz RBw 1													
Formally	mea	sure	d em	ission	peaks						1		
Frequency M Hz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	M easurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments	
5752.500	66.9	11.9	36.5	115.3	Peak [Scan]	>						PK	
Legend:	TX = T	ransmit	ter Emis	sions; DIC	G = Digital Emissi	ons; F	UND =	Funda	mental; W	B = Wide	band Er	nission	
-					-								

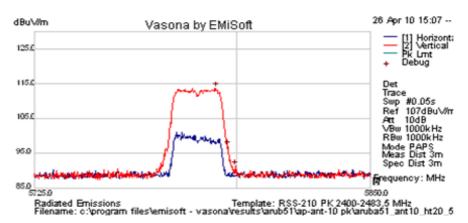


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Test Freq.	5785 MHz	Engineer	CSB
Variant	802.11n HT-20; 6.5 MCS	Temp (°C)	19.5
Freq. Range	5725 - 5850 MHz	Rel. Hum.(%)	34
Power Setting	9 in art	Press. (m Bars)	1005
Antenna	AP-ANT-10	Duty Cycle (%)	100
Test Notes 1			
Test Notes 2			
	-		





Formally measured emission peaks

	uency Hz		Cable Loss		Level dBuV/m	M easurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	M argin dB	Pass /Fail	Comments
5792	2.292	65.2	12.0	36.5	113.7	Peak [Scan]	V						PK

Legend:

TX = Transmitter Emissions; DIG = Digital Emissions; FUND = Fundamental; WB = Wideband Emission

PK = Peak emissions of fundamental



5822.083

Legend:

36.6

PK = Peak emissions of fundamental

Title: Aruba AP-92/93 802.11a/b/g/n Wireless AP

To: FCC 47 CFR Part 15.247 & IC RSS-210

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Serial #: ARUB51-U1 Rev A Issue Date: 18th May 2010 Page: Page 335 of 372

Test F	req.	5825 MHz					Е	ngineer	CSB		
Var	riant	802.11n HT-	20; 6.5 MCS	1			Те	mp (°C)	19.5		
Freq. Ra	ange	5725 - 5850	MHz				Rel. I	Hum .(%)	34		
Power Set	tting	9 in art				Pı	ress.	(m Bars)	1005		
Ante	enna	AP-ANT-10					Duty (Cycle (%)	100		
Test Note	es 1			-					=		
Test Note	es 2										
Formally 1				Vasona by E	had to a	and a	RSS-210	Jan.	Det Trace Swp # Ref 1 Att VBw 1 RBw 1 Modes Modes Spec 0	Horizoni Vertical Curnt ebug 00.05s 07dBuV/0 0dB 000kHz 000kHz 000kHz PAPS Dist 3m Dist 3m	ti
	Raw BuV	Cable AF Loss dB	Level dBuV/m	M easurement Type	Pol	Hgt	Azt Deg	Limit dBuV/m	M argin dB	Pass /Fail	Comment

Peak [Scan]

TX = Transmitter Emissions; DIG = Digital Emissions; FUND = Fundamental; WB = Wideband Emission



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5725 - 5850 MHz: 802.11n HT-40

Test	Freq.	5755 M	Hz					E	ngineer	CSB			
V	ariant	802.11	n HT-40); 13.5 MC	S			Te	mp (°C)	19.5			
Freq. F	Range	5725 -	5850 M	Hz				Rel.	Hum .(%)	34			
Power S	etting	10.5 in	art				Pi	ress.	(m Bars)	1005			
An	tenna	AP-AN	T-10					Duty (Cycle (%)	100			
Test No	otes 1									•			
Test No	otes 2												
MicoMLabs dBuV/m Vasona by EMiSoft 26 Apr 10 15:14 [1] Horizont: [2] Vertical Pk Lmt Debug Det Trace Sup #0.05s Ref 107dBuV/m Att 10dB VBw 1000kHz RBw 1000kHz													
Formally	mea	sure	d em	ission	peaks								
Frequency M Hz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	M easurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments	
5750.000	64.2	11.9	36.5	112.6	Peak [Scan]	٧						PK	
Legend:	TX = T	ransmit	ter Emis	sions; DIC	G = Digital Emissi	ons; F	UND =	Funda	mental; W	B = Wide	band Er	nission	
	57	\ I!	!	of fundam									



To: FCC 47 CFR Part 15.247 & IC RSS-210

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Test Freq.	5785 MHz	Engineer	CSB
Variant	802.11n HT-40; 13.5 MCS	Temp (°C)	19.5
Freq. Range	5725 - 5850 MHz	Rel. Hum.(%)	34
Power Setting	10.5 in art	Press. (m Bars)	1005
Antenna	AP-ANT-10	Duty Cycle (%)	100
Test Notes 1			
Test Notes 2			
MiC@MLabs	dBuV/m Vasona by Ef	Template: RSS-210 PK 2400-2	26 Apr 10 15:19 [1] Horizont: [2] Vertical Pk Lmt Debug Det Trace Swp #0.05s Ref 107dBu\V/m Att 10dB \VBw 1000kHz RBw 1000kHz RBw 1000kHz Mode PAPS Meas Dist 3m Spec Dist 3m Fequency: MHz \$850.0 \$483.5 MHz uba51_ant10_ht40_5

Formally measured emission peaks

				Level dBuV/m	M easurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	M argin dB	Pass /Fail	Comments
5775.000	65.0	12.0	36.5	113.5	Peak [Scan]	V						PK

Legend:

TX = Transmitter Emissions; DIG = Digital Emissions; FUND = Fundamental; WB = Wideband Emission

PK = Peak emissions of fundamental

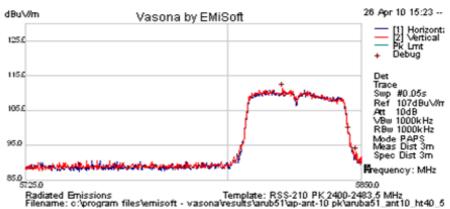


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Test Freq.	5815 MHz	Engineer	CSB
•	802.11n HT-40; 13.5 MCS	Temp (°C)	
Freq. Range	5725 - 5850 MHz	Rel. Hum.(%)	34
Power Setting	9.5 in art	Press. (m Bars)	1005
Antenna	AP-ANT-10	Duty Cycle (%)	100
Test Notes 1			
Test Notes 2			





Formally measured emission peaks

		Cable Loss		Level dBuV/m	M easurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	M argin dB	Pass /Fail	Comments
5820.417	62.7	12.0	36.6	111.3	Peak [Scan]	V						PK

Legend:

TX = Transmitter Emissions; DIG = Digital Emissions; FUND = Fundamental; WB = Wideband Emission

PK = Peak emissions of fundamental

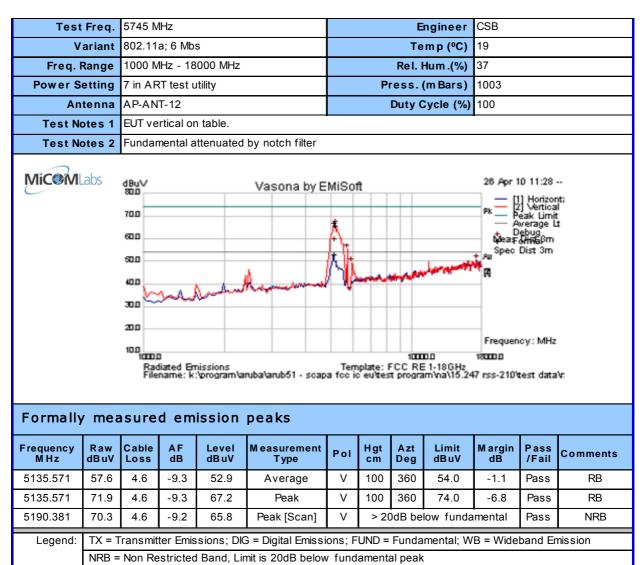


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7.6.13 AP-ANT-12 - Transmitter Radiated Spurious Emissions - Above 1 GHz

5725 - 5850 MHz: 802.11a



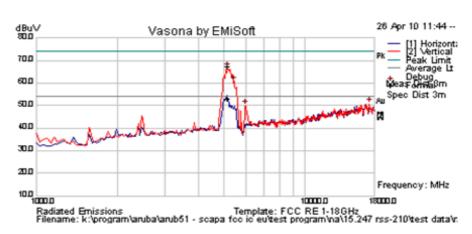


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Test Freq.	5785 MHz	Engineer	CSB						
Variant	802.11a; 6 Mbs	Temp (°C)	19						
Freq. Range	1000 MHz - 18000 MHz	Rel. Hum.(%)	37						
Power Setting	6.5 in ART test utility	Press. (m Bars)	1003						
Antenna	AP-ANT-12	Duty Cycle (%)	100						
Test Notes 1	EUT vertical on table.								
Test Notes 2	Fundamental attenuated by notch filter								





Formally measured emission peaks

Frequency M Hz	Raw dBuV	Cable Loss	A F dB	Level dBuV	M easurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	M argin dB	Pass /Fail	Comments
5136.408	72.3	4.6	-9.3	67.6	Peak Max	V	99	348	74.0	-6.4	Pass	RB
5136.408	57.7	4.6	-9.3	53.1	Average Max	V	99	348	54.0	-0.9	Pass	RB

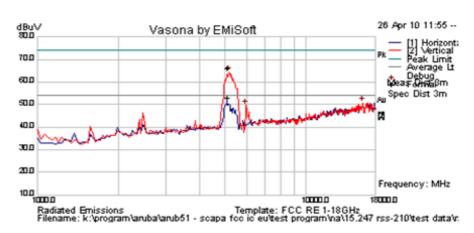


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Test Freq.	5825 MHz	Engineer	CSB						
Variant	802.11a; 6 Mbs	Temp (°C)	19						
Freq. Range	1000 MHz - 18000 MHz	Rel. Hum.(%)	37						
Power Setting	6.5 in ART test utility	Press. (m Bars)	1003						
Antenna	AP-ANT-12	100							
Test Notes 1	EUT vertical on table.								
Test Notes 2	Fundamental attenuated by notch filter								





Formally measured emission peaks

Frequency M Hz	Raw dBuV	Cable Loss	A F dB	Level dBuV	M easurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	M argin dB	Pass /Fail	Comments
5098.297	70.4	4.6	-8.8	66.3	Peak Max	V	102	348	74.0	-7.8	Pass	RB
5098.297	57.1	4.6	-8.8	52.9	Average Max	V	102	348	54.0	-1.1	Pass	RB



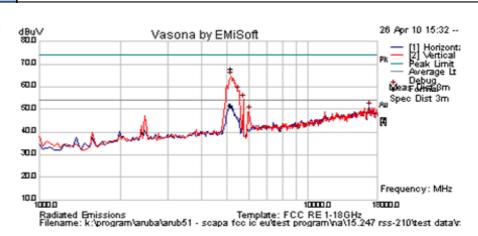
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5725 - 5850 MHz: 802.11n HT-20

Test Freq.	5745 MHz	Engineer	CSB							
Variant	802.11n HT-20; 6.5 MCS	Temp (°C)	19							
Freq. Range	1000 MHz - 18000 MHz	Rel. Hum.(%)	37							
Power Setting	6.0 in ART test utility	Press. (m Bars)	1003							
Antenna	AP-ANT-12	Duty Cycle (%)	100							
Test Notes 1	EUT vertical on table.	JT vertical on table.								
Test Notes 2	Fundamental attenuated by notch filter									

MiC@MLabs



Formally measured emission peaks

Frequency M Hz	Raw dBuV	Cable Loss	A F dB	Level dBuV	M easurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	M argin dB	Pass /Fail	Comments
5136.399	72.5	4.6	-9.3	67.9	Peak Max	٧	98	342	74.0	-6.1	Pass	RB
5136.399	56.4	4.6	-9.3	51.8	Average Max	V	98	342	54.0	-2.3	Pass	RB

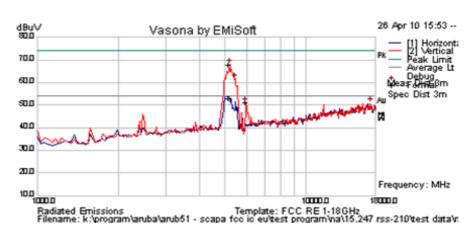


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Test Freq.	5785 MHz	Engineer	CSB						
Variant	802.11n HT-20; 6.5 MCS	Temp (°C)	19						
Freq. Range	1000 MHz - 18000 MHz	Rel. Hum.(%)	37						
Power Setting	6.5 in ART test utility	Press. (m Bars)	1003						
Antenna	AP-ANT-12	Duty Cycle (%)	100						
Test Notes 1	EUT vertical on table.	UT vertical on table.							
Test Notes 2	Fundamental attenuated by notch filter								





Formally measured emission peaks

Frequency M Hz	Raw dBuV	Cable Loss	AF dB	Level dB uV	M easurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	M argin dB	Pass /Fail	Comments
5137.675	72.8	4.6	-9.3	68.1	Peak Max	V	101	346	74.0	-5.9	Pass	RB
5137.675	57.7	4.6	-9.3	53.0	Average	V	101	346	54.0	-1.0	Pass	RB
5973.948	54.4	4.9	-8.2	51.0	Peak [Scan]	V	> 20dB below fundamental		Pass	NRB		

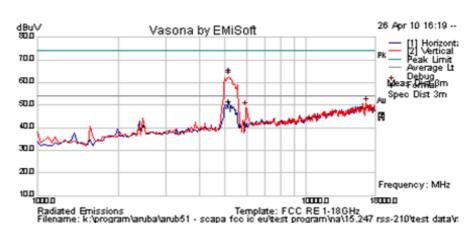


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Test Freq.	5825 MHz	Engineer	CSB						
Variant	802.11n HT-20; 6.5 MCS	Temp (°C)	19						
Freq. Range	1000 MHz - 18000 MHz	Rel. Hum.(%)	37						
Power Setting	6.5 in ART test utility	Press. (m Bars)	1003						
Antenna	AP-ANT-12	Duty Cycle (%)	100						
Test Notes 1	EUT vertical on table.	UT vertical on table.							
Test Notes 2	Fundamental attenuated by notch filter								





Formally measured emission peaks

Frequency M Hz	Raw dBuV	Cable Loss	A F dB	Level dBuV	M easurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	M argin dB	Pass /Fail	Comments
5136.893	70.6	4.6	-9.3	65.9	Peak Max	V	102	360	74.0	-8.1	Pass	RB
5136.893	56.5	4.6	-9.3	51.8	Average Max	V	102	360	54.0	-2.2	Pass	RB
5973.948	52.4	4.9	-8.2	49.1	Peak [Scan]	V	> 20dB below fundamental			Pass	NRB	



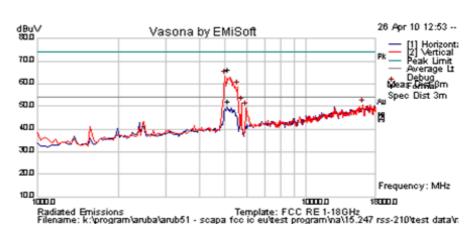
To: FCC 47 CFR Part 15.247 & IC RSS-210

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5725 - 5850 MHz: 802.11n HT-40

Test Freq.	5755 MHz	Engineer	CSB						
Variant	802.11n HT-40; 13.5 MCS	Temp (°C)	19						
Freq. Range	1000 MHz - 18000 MHz	Rel. Hum.(%)	37						
Power Setting	6 in ART test utility	Press. (m Bars)	1003						
Antenna	AP-ANT-12	Duty Cycle (%)	100						
Test Notes 1	EUT vertical on table.	JT vertical on table.							
Test Notes 2	Fundamental attenuated by notch filter								





Formally measured emission peaks

Frequency M Hz	Raw dBuV	Cable Loss	A F dB	Level dBuV	M easurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	M argin dB	Pass /Fail	Comments
5095.630	70.3	4.6	-8.7	66.2	Peak Max	V	105	0	74.0	-7.8	Pass	RB
5095.630	56.3	4.6	-8.7	52.2	Average Max	V	105	0	54.0	-1.8	Pass	RB

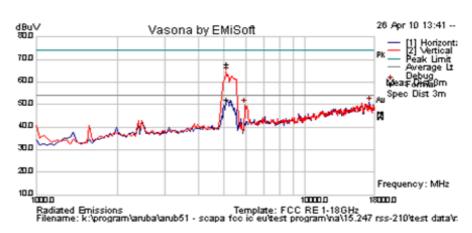


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Test Freq.	5785 MHz	Engineer	CSB
Variant	802.11n; HT-40; 13.5 MCS	Temp (°C)	19
Freq. Range	1000 MHz - 18000 MHz	Rel. Hum.(%)	37
Power Setting	6.5 in ART test utility	Press. (m Bars)	1003
Antenna	AP-ANT-12	Duty Cycle (%)	100
Test Notes 1	EUT vertical on table.		
Test Notes 2	Fundamental attenuated by notch filter		





Formally measured emission peaks

Frequency M Hz	Raw dBuV	Cable Loss	A F dB	Level dBuV	M easurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	M argin dB	Pass /Fail	Comments
5094.990	72.0	4.6	-8.7	67.9	Peak Max	V	133	360	74.0	-6.1	Pass	RB
5094.99	56.4	4.6	-8.7	52.3	Average Max	V	133	360	54.0	-1.8	Pass	RB

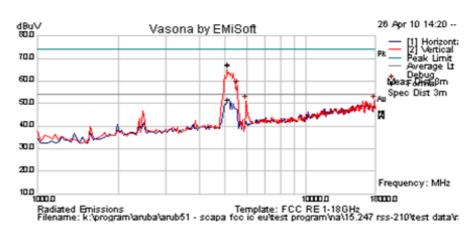


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Test Freq.	5815 MHz	Engineer	CSB					
Variant	802.11n; HT-40; 13.5 MCS	Temp (°C)	19					
Freq. Range	1000 MHz - 18000 MHz	Rel. Hum.(%)	37					
Power Setting	6.5 in ART test utility	Press. (m Bars)	1003					
Antenna	AP-ANT-12	Duty Cycle (%)	100					
Test Notes 1	EUT vertical on table.							
Test Notes 2	Fundamental attenuated by notch filter							





Formally measured emission peaks

Frequency M Hz	Raw dBuV	Cable Loss	A F dB	Level dBuV	M easurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	M argin dB	Pass /Fail	Comments
5096.921	71.1	4.6	-8.8	67.0	Peak Max	V	107	360	74.0	-7.1	Pass	RB
5096.921	55.7	4.6	-8.8	51.6	Average Max	V	107	360	54.0	-2.5	Pass	RB

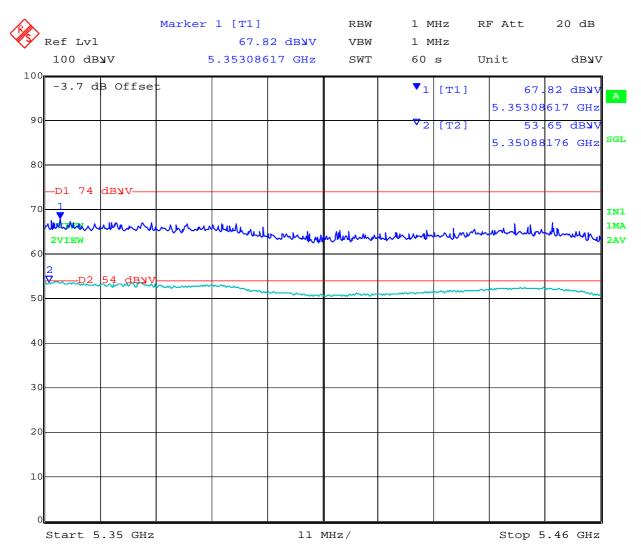


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7.6.14 <u>AP-ANT-12 - Transmitter Band edge spurious emissions</u>

5745 MHz - 802.11a; 5350 - 5460 MHz



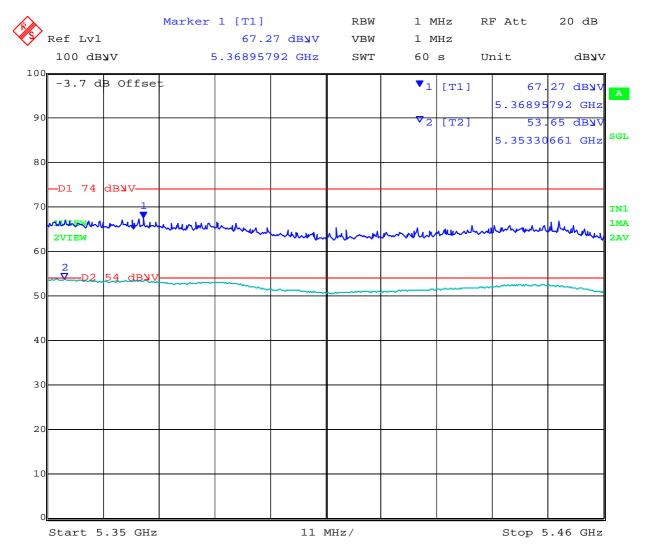
Date: 28.APR.2010 12:37:22



To: FCC 47 CFR Part 15.247 & IC RSS-210

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5745 MHz - 802.11n HT-20; 5350 - 5460 MHz



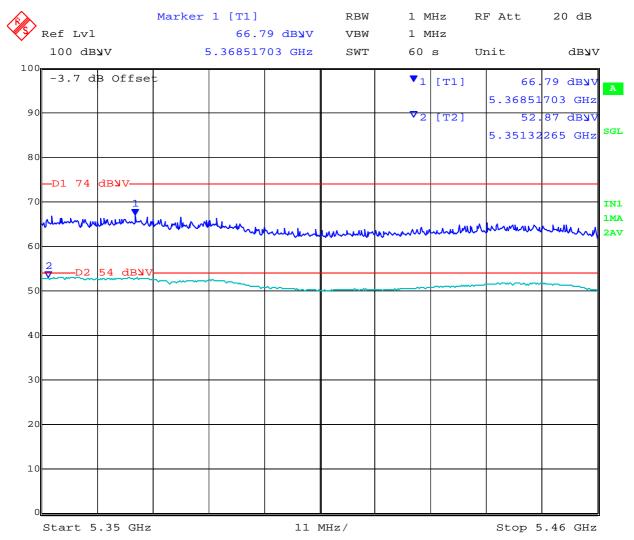
Date: 28.APR.2010 12:42:47



To: FCC 47 CFR Part 15.247 & IC RSS-210

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5755 MHz - 802.11n HT-40; 5350 - 5460 MHz



Date: 28.APR.2010 12:47:17

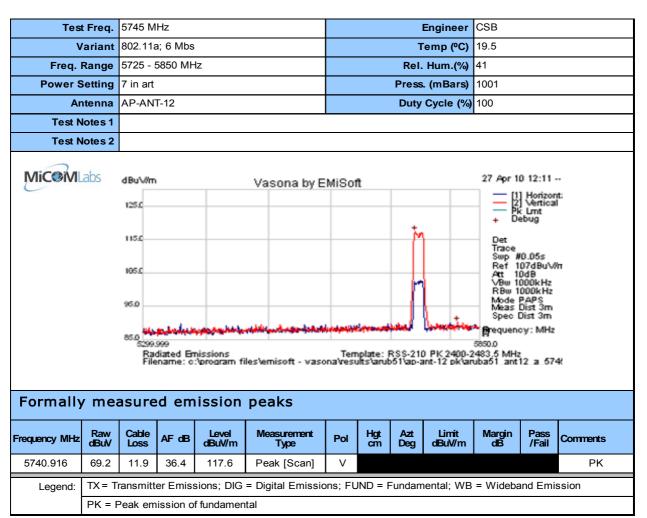


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7.6.15 AP-ANT-12 - Transmitter Peak Emissions (RSS-210/RSS-GEN)

5725 - 5850 MHz: 802.11a





Legend:

PK = Peak emission of fundamental

Title: Aruba AP-92/93 802.11a/b/g/n Wireless AP

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Test	Freq.	5785 M	Hz						Engineer	CSB		
٧	ariant	802.11	a; 6 Mbs					Т	emp (°C)	19.5		
Freq. I	Range	5725 - :	5850 MF	lz				Rel.	Hum.(%)	41		
Power S	etting	6.5 in a	rt					Press	. (mBars)	1001		
An	tenna	AP-AN	T-12					Duty	Cycle (%)	100		
Test N	otes 1											
Test N	otes 2											
MiC®ML			on of the second		Vasona by E	and the same	سه زيد اولي	RSS-210 51\ap-a		Det Trace Swp # Ret 1 New 1 Ne	Horizont Vertical Curnt Abug 10.05s 07dBu\/0 0dB 0dB 0dB 0dB 0dB 0dB 0dB 0dB 10 10 10 10 10 10 10 10 10 10 10 10 10	: 7
Formally	meas	ured 6	emissio	on peaks	8							
Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments
5784.000	69.5	12.0	36.5	118.0	Peak [Scan]	V						PK

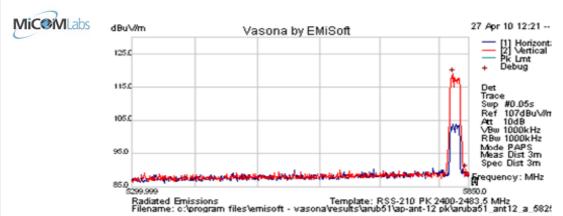
TX = Transmitter Emissions; DIG = Digital Emissions; FUND = Fundamental; WB = Wideband Emission



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Test Freq.	5825 MHz	Engineer	CSB
Variant	802.11a; 6 Mbs	Temp (°C)	19.5
Freq. Range	5725 - 5850 MHz	Rel. Hum.(%)	41
Power Setting	6.5 in art	Press. (mBars)	1001
Antenna	AP-ANT-12	Duty Cycle (%)	100
Test Notes 1			
Test Notes 2			



Formally measured emission peaks

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments
5822.500	70.5	12.0	36.6	119.1	Peak [Scan]	V						PK

Legend:

TX = Transmitter Emissions; DIG = Digital Emissions; FUND = Fundamental; WB = Wideband Emission

PK = Peak emission of fundamental

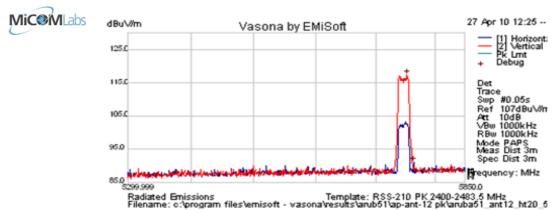


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5725 - 5850 MHz: 802.11n HT-20

Test Freq.	5745 MHz	Engineer	CSB
Variant	802.11n HT-20; 6.5 MCS	Temp (°C)	19.5
Freq. Range	5725 - 5850 MHz	Rel. Hum.(%)	41
Power Setting	6.5 in art	Press. (mBars)	1001
Antenna	AP-ANT-12	Duty Cycle (%)	100
Test Notes 1			
Test Notes 2			



Formally measured emission peaks

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments	
5751.916	69.1	11.9	36.5	117.4	Peak [Scan]	٧						PK	

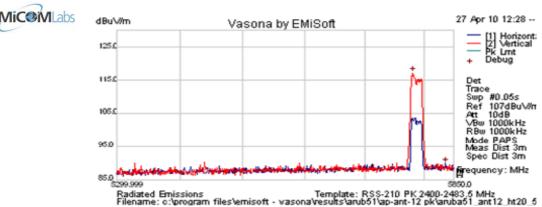
Legend: TX = Transmitter Emissions; DIG = Digital Emissions; FUND = Fundamental; WB = Wideband Emission
PK = Peak emission of fundamental



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Test Freq.	5785 MHz	Engineer	CSB
Variant	802.11n HT-20; 6.5 MCS	Temp (°C)	19.5
Freq. Range	5725 - 5850 MHz	Rel. Hum.(%)	41
Power Setting	6.5 in art	Press. (mBars)	1001
Antenna	AP-ANT-12	Duty Cycle (%)	100
Test Notes 1			
Test Notes 2			
MiC®M Labs	dBu√/m Vasona by E	MiSoft	27 Apr 10 12:28 [1] Horizont:



Formally measured emission peaks

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments
5780.333	68.9	12.0	36.5	117.3	Peak [Scan]	V						PK

Legend

TX = Transmitter Emissions; DIG = Digital Emissions; FUND = Fundamental; WB = Wideband Emission

PK = Peak emission of fundamental

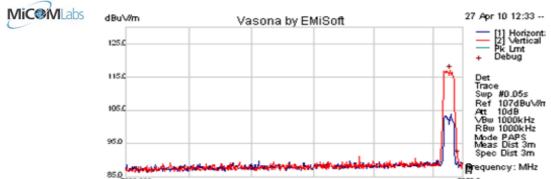


To: FCC 47 CFR Part 15.247 & IC RSS-210

Template: RSS-210 PK 2400-2483.5 MHz Vesuits\arub51\ap-ant-12 pk\aruba51_ant12_ht20_5

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Test Freq.	5825 MHz	Engineer	CSB
Variant	802.11n HT-20; 6.5 MCS	Temp (°C)	19.5
Freq. Range	5725 - 5850 MHz	Rel. Hum.(%)	41
Power Setting	6.5 in art	Press. (mBars)	1001
Antenna	AP-ANT-12	Duty Cycle (%)	100
Test Notes 1			
Test Notes 2			



Radiated Emissions Filename: o:\program files\emisoft - vasona\r

Formally measured emission peaks

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments
5828.000	68.5	12.0	36.6	117.1	Peak [Scan]	V						PK

Legend: TX = Transmitter Emissions; DIG = Digital Emissions; FUND = Fundamental; WB = Wideband Emission

PK = Peak emission of fundamental

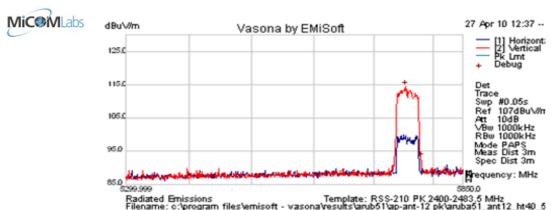


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5725 - 5850 MHz: 802.11n HT-40

Test Freq.	5755 MHz	Engineer	CSB
Variant	802.11n HT-40; 13.5 MCS	Temp (°C)	19.5
Freq. Range	5725 - 5850 MHz	Rel. Hum.(%)	41
Power Setting	6 in art	Press. (mBars)	1001
Antenna	AP-ANT-12	Duty Cycle (%)	100
Test Notes 1			
Test Notes 2			



Formally measured emission peaks

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments	
5752.833	66.2	11.9	36.5	114.6	Peak [Scan]	V						PK	

Legend: TX = Transmitter Emissions; DIG = Digital Emissions; FUND = Fundamental; WB = Wideband Emission

PK = Peak emission of fundamental



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Test Freq.	5785 MHz	Engineer	CSB		
Variant	802.11n HT-40; 13.5 MCS	Temp (°C)	19.5		
Freq. Range	5725 - 5850 MHz	Rel. Hum.(%)	41		
Power Setting	6.5 in art	Press. (mBars)	1001		
Antenna	AP-ANT-12	Duty Cycle (%)	100		
Test Notes 1					
Test Notes 2					
MiC©iM Labs	115.0 115.0 105.0 95.0	MISOR	27 Apr 10 12:46 [1] Horizont: [2] Vertical Pik Lmt Debug Det Trace Swp #0.05s Ref 107dBu\/m At 10dB VBw 1000kHz RBw 1000kHz Mode PAPS Meas Dist 3m Spec Dist 3m Frequency: MHz		

Formally measured emission peaks

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments
5783.083	66.7	12.0	36.5	115.2	Peak [Scan]	V						PK

Legend

TX = Transmitter Emissions; DIG = Digital Emissions; FUND = Fundamental; WB = Wideband Emission

PK = Peak emission of fundamental



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Test Freq.	5815 MHz	Engineer	CSB
Variant	802.11n HT-40; 13.5 MCS	Temp (°C)	19.5
Freq. Range	5725 - 5850 MHz	Rel. Hum.(%)	41
Power Setting	6.5 in art	Press. (mBars)	1001
Antenna	AP-ANT-12	Duty Cycle (%)	100
Test Notes 1			
Test Notes 2			
MiC ⊕ M Labs	dBu\/m Vasona by E 125.0 115.0 106.0 85.0 85.0 85.0 83.0 8	A Contractive Special Cont	27 Apr 10 12:49 [1] Horizont: [2] Vertical Pk Lmt Debug Det Trace Swp #0.05s Ref 107dBu\/m Att 10dB \VBw 1000kHz RBw 1000kHz Mode PAPS Meas Dist 3m Spec Dist 3m Brequency: MHz 5850.0 2483,5 MHz

Formally measured emission peaks

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments
5811.500	66.0	12.0	36.5	114.6	Peak [Scan]	V						PK

Legend

TX = Transmitter Emissions; DIG = Digital Emissions; FUND = Fundamental; WB = Wideband Emission

PK = Peak emission of fundamental



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7.6.16 Receiver Radiated Spurious Emissions

Specification

Industry Canada RSS-Gen §4.10,

The search for spurious emissions shall be from the lowest frequency internally generated or used in the receiver (e.g. local oscillator, intermediate or carrier frequency), or 30 MHz, whichever is the higher, to at least 3 times the highest tunable or local oscillator frequency, whichever is the higher, without exceeding 40 GHz.

RSS-Gen §6

The following receiver spurious emission limits shall be complied with;

(a) If a radiated measurement is made, all spurious emissions hall comply with the limits of Table 1.

Frequency	Field Strength	Field Strength	Measurement Distance
(MHz)	(μV/m)	(dBμV/m)	(meters)
30-88	100	40.0	3
88-216	150	43.5	3
216-960	200	46.0	3
Above 960	500	54.0	3

Laboratory Measurement Uncertainty for Radiated Emissions

Measurement uncertainty	+5.6/ -4.5 dB
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Traceability

Method	Test Equipment Used
Measurements were made per work instruction WI-03 'Measurement of Radiated Emissions'	0088, 0158, 0134, 0304, 0311, 0315, 0310, 0312



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Measurement Results for Receiver Emissions

Variant Receive in Test Utility Temp (%C) 19	Test	Freq.	2437 M	Hz						Engineer	CSB		
Power Setting Not Applicable in Receive Mode Press. (mBars) 1011 Antenna Integral Antenna's connected during testing Test Notes 1 AC Powered Test Notes 2 MiccMLabs dBuV Vasona by EMISoft 02 Apr 10 08:51 100 Apr	V	ariant	Receive	e in Test	Utility				Т	emp (°C)	19		
Antenna Integral Antenna's connected during testing Test Notes 1 AC Powered Test Notes 2 MiCOM Labs dBuV Vasona by EMISOft 02 Apr 10 08:51 [1] Horizont Pack Limit Debug Limit Deb	Freq. F	Range	1000 M	Hz - 180	00 MHz			Rel. Hum.(%)			35		
Test Notes 2 MicoMLabs dBuV Vasona by EMISoft 02 Apr 10 08:51 [1] Horizont Pack Limit Debug Vertical Pack Limit Debug Reak Limit Debug Baddated Emissions Frequency: MHz Frequency: MHz Frequency: MHz Baddated Emissions Filename: k:k:compliance management aruba aruba 1 - scapa foc ic eutrest program/north americ Formally measured emission peaks Frequency May Cable AF dB dBuV/m Measurement Type Pol Hgt Azt Limit Margin dB V/Fail Comments No Receiver Emissions within 6dB of limit. Legend: TRANS = Transient Emission; RB = Restricted Band; NRB = Non-Restricted Band;	Power S	etting	Not App	olicable i	n Receive	Mode	Press. (mBars)			1011			
Test Notes 2 MicoMLabs dBuV Vasona by EMISoft 02 Apr 10 08:51 12 Vertical Photoport Pho	An	tenna	Integral	egral Antenna's connected during testing									
Vasona by EMiSoft 02 Apr 10 08:51 11 Horizont: 21 Vertical Pack Umit Pack Pack Pack Pack Pack Pack Pack Pack	Test No	otes 1	AC Pov	Powered									
Formally measured emission peaks Frequency Raw Gable AF dB Level Measurement Type Pol Raw Deg dBuV/m Margin GBuV/m Margin GBuV/	Test No	otes 2											
Frequency MHz Cable Loss AF dB Level dBuV/m Type Pol cm Deg dBuV/m Margin dB Comments No Receiver Emissions within 6dB of limit. Legend: TRANS = Transient Emission; RB = Restricted Band; NRB = Non-Restricted Band;	MiceML	70.0 70.0											
MHz dBuV Loss AF dB dBuV/m Type Pol cm Deg dBuV/m dB /Fail Comments No Receiver Emissions within 6dB of limit. Legend: TRANS = Transient Emission; RB = Restricted Band; NRB = Non-Restricted Band;	Formally r	meas	ured e	emissi	on peal	cs							
Legend: TRANS = Transient Emission; RB = Restricted Band; NRB = Non-Restricted Band;		7.7		AF dB			Pol				_		Comments
- ·	No Receiver Er	mission	s within	6dB of li	mit.	_							
BE = Emission in Restricted Band Nearest Transmission Band Edge: FUND = Fundamental Freq	Legend:	TRANS	= Trans	sient Em	ission; RB	= Restricted Bar	nd; NR	B = No	n-Restr	icted Band	d;		
		BE = E	mission	in Restri	cted Band	Nearest Transm	ission	Band E	dge; F	UND = Fur	ndamental	Freq.	

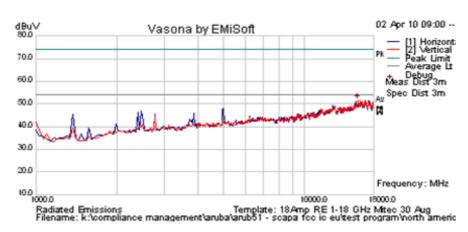


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Test Freq.	5785 MHz	Engineer	CSB				
Variant	Receive in Test Utility	Temp (°C)	19				
Freq. Range	1000 MHz - 18000 MHz	Rel. Hum.(%)	35				
Power Setting	Not Applicable in Receive Mode	1011					
Antenna	Integral Antenna's connected during testing	ntegral Antenna's connected during testing					
Test Notes 1	AC Powered						
Test Notes 2							





Formally measured emission peaks

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments
------------------	-------------	---------------	-------	-----------------	---------------------	-----	-----------	------------	-----------------	--------------	---------------	----------

No Receiver Emissions within 6dB of limit.

Legend: TRANS = Transient Emission; RB = Restricted Band; NRB = Non-Restricted Band;

BE = Emission in Restricted Band Nearest Transmission Band Edge; FUND = Fundamental Freq.



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7.6.17 Measurement Results: Radiated Spurious Emissions – Below 1 GHz

Specification

Limits

§15.205 (a) Except as shown in paragraph (d) of 15.205 (a), only spurious emissions are permitted in any of the frequency bands listed.

§15.205 (a) Except as shown in paragraphs (d) and (e) of this section, the field strength of emissions appearing within these frequency bands shall not exceed the limits shown in Section §15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in Section 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.

§15.209 (a) Except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table.

§15.209 (a) and RSS-Gen §2.2 Limit Matrix

Frequency(MHz)	Field Strength (μV/m)	Field Strength (dBμV/m)	Measurement Distance (meters)
30-88	100	40.0	3
88-216	150	43.5	3
216-960	200	46.0	3
Above 960	500	54.0	3

Laboratory Measurement Uncertainty for Radiated Emissions

Measurement uncertainty	+5.6/ -4.5 dB

Traceability

Method	Test Equipment Used
Measurements were made per work instruction WI-03 'Measurement of Radiated Emissions'	0088, 0158, 0134, 0304, 0311, 0315, 0310, 0312



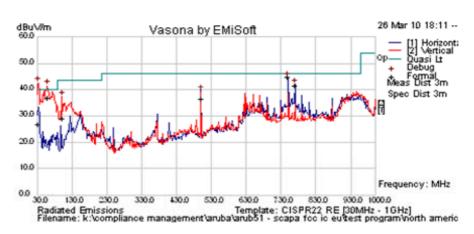
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Note: No radio emissions were present below 1 GHz. Emissions were investigated while the unit was transmitting at maximum power and in receive mode for both AC Adaptor powered and POE (Power Over Ethernet) configuration.

Test Freq.	2437 MHz	Engineer	CSB			
Variant	Digital Emissions	Temp (°C)	23			
Freq. Range	30 MHz - 1000 MHz	Rel. Hum.(%)	38			
Power Setting	N/A - Receive Mode	Press. (m Bars)	1013			
Antenna	Integral Antennas					
Test Notes 1	AC Pow er - 120V AC; 60 Hz					
Test Notes 2						





Formally measured emission peaks

Frequency M Hz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	M easurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	M argin dB	Pass /Fail	Comments
33.051	35.2	3.4	-11.8	26.8	Quasi Max	V	261	113	40	-13.2	Pass	DIG
60.938	56.8	3.8	-23.8	36.9	Quasi Max	V	134	77	40	-3.1	Pass	DIG
103.311	44.8	4.2	-19.9	29.1	Quasi Max	V	98	102	43.5	-14.4	Pass	DIG
499.984	42.8	6.0	-12.6	36.3	Quasi Max	Н	98	142	46	-9.8	Pass	DIG
749.984	46.9	6.9	-9.0	44.8	Quasi Max	Н	109	350	46	-1.2	Pass	DIG
769.990	43.2	7.0	-8.8	41.4	Quasi Max	Н	109	353	46	-4.6	Pass	DIG

Legend: DIG = Digital Device Emission; TX = Transmitter Emission; FUND = Fundamental Frequency

NRB = Non-Restricted Band, Limit is 20 dB below Fundamental; RB = Restricted Band



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Test Freq.	2437 MHz - Rx Mode	Engineer	CSB				
Variant	Digital Emissions	Temp (°C)	21.5				
Freq. Range	30 MHz - 1000 MHz	Rel. Hum.(%)	36				
Power Setting	N/A	Press. (m Bars)	1008				
Antenna	Integral Antenna	Integral Antenna					
Test Notes 1	EUT pow ered via PoE (Pow er Over Ethernet) - Pow erDsine 7001G						
Test Notes 2							





Formally measured emission peaks

Frequency M Hz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	M easurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	M argin dB	Pass /Fail	Comments
40.261	46.0	3.6	-17.0	32.6	Quasi Max	V	101	176	40	-7.4	Pass	DIG
50.782	54.4	3.7	-23.2	35.0	Quasi Max	V	98	113	40	-5.0	Pass	DIG
305.043	40.3	5.2	-16.7	28.9	Quasi Max	Н	99	48	46	-17.1	Pass	DIG
499.989	46.8	6.0	-12.6	40.2	Quasi Max	V	116	228	46	-5.8	Pass	DIG
906.845	33.7	7.3	-7.2	33.9	Quasi Max	V	132	14	46	-12.1	Pass	DIG
999.988	37.7	7.7	-6.1	39.2	Quasi Max	V	108	353	54	-14.8	Pass	DIG

Legend: DIG = Digital Device Emission; TX = Transmitter Emission; FUND = Fundamental Frequency

NRB = Non-Restricted Band, Limit is 20 dB below Fundamental; RB = Restricted Band



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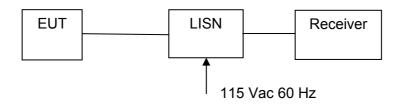
7.7 AC Wireline Conducted Emissions (150 kHz – 30 MHz)

FCC, Part 15 Subpart C §15.407(b)(6)/15.207 Industry Canada RSS-Gen §7.2.2

Test Procedure

The EUT is configured in accordance with ANSI C63.4. The conducted emissions are measured in a shielded room with a spectrum analyzer in peak hold in the first instance. Emissions closest to the limit are measured in the quasi-peak mode (QP) with the tuned receiver using a bandwidth of 9 kHz. The emissions are maximized further by cable manipulation. The highest emissions relative to the limit are listed.

Test Measurement Set up



Measurement set up for AC Wireline Conducted Emissions Test

Specification

Limit



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§15.407 (b)(6); Any U-NII devices using an AC power line are required to comply also with the limits set forth in Section 15.207.

§15.207 (a) Except as shown in paragraphs (b) and (c) of this section, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50 $\mu\Omega$ line impedance stabilization network (LISN), see §15.207 (a) matrix below. Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal.

RSS-Gen §7.2.2

The radio frequency voltage that is conducted back into the AC power lines in the frequency range of 0.15 MHz to 30 MHz shall not exceed the limits shown in the table below. The tighter limit applies at the frequency range boundaries.



Title: Aruba AP-92/93 802.11a/b/g/n Wireless AP **To:** FCC 47 CFR Part 15.247 & IC RSS-210

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§15.207 (a) and RSS-Gen §7.2.2 Limit Matrix

The lower limit applies at the boundary between frequency ranges

Frequency of Emission (MHz)	Conducted Limit (dBμV)				
	Quasi-peak	Average			
0.15-0.5	66 to 56*	56 to 46*			
0.5-5	56	46			
5-30	60	50			

^{*} Decreases with the logarithm of the frequency

Laboratory Measurement Uncertainty for Conducted Emissions

Measurement uncertainty	±2.64 dB

Traceability

Method	Test Equipment Used
Measurements were made per work instruction WI-EMC-01 'Measurement of Conducted Emissions'	0158, 0184, 0287, 0190, 0293, 0307



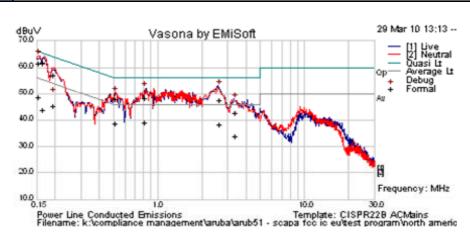
To: FCC 47 CFR Part 15.247 & IC RSS-210

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Measurement Results for AC Wireline Conducted Emissions (150 kHz – 30 MHz)

Test Freq.	2437 - Rx Mode	Engineer	CSB			
Variant	Variant AC Line Emissions		22			
Freq. Range	0.150 MHz - 30 MHz	Rel. Hum.(%)	38			
Power Setting	N/A	Press. (mBars)	1006			
Antenna	Integral Antennas					
Test Notes 1	AC Powered - 120V AC 60Hz					
Test Notes 2						





Formally measured emission peaks

Frequency MHz	Raw dBuV	Cable Loss	Factors dB	Level dBuV	Measurement Type	Line	Limit dBuV	Margin dB	Pass /Fail	Comments
0.155	38.8	9.9	0.1	48.8	Average	Neutral	55.73	-7.0	Pass	DIG
0.155	51.6	9.9	0.1	61.6	Quasi Peak	Neutral	65.73	-4.2	Pass	DIG
0.167	33.8	9.9	0.1	43.7	Average	Neutral	55.11	-11.4	Pass	DIG
0.167	51.7	9.9	0.1	61.7	Quasi Peak	Neutral	65.11	-3.4	Pass	DIG
0.194	35.4	9.9	0.1	45.3	Average	Neutral	53.86	-8.5	Pass	DIG
0.194	47.2	9.9	0.1	57.1	Quasi Peak	Neutral	63.86	-6.7	Pass	DIG
0.516	28.6	9.9	0.1	38.6	Average	Neutral	46	-7.4	Pass	DIG
0.516	37.8	9.9	0.1	47.9	Quasi Peak	Neutral	56	-8.2	Pass	DIG
0.828	38.4	9.9	0.1	48.4	Quasi Peak	Neutral	56	-7.6	Pass	DIG
0.828	29.1	9.9	0.1	39.1	Average	Neutral	46	-6.9	Pass	DIG
2.661	28.2	10.1	0.1	38.4	Average	Live	46	-7.6	Pass	DIG
2.661	37.3	10.1	0.1	47.6	Quasi Peak	Live	56	-8.5	Pass	DIG

Legend: DIG = Digital Device Emission; TX = Transmitter Emission; FUND = Fundamental Frequency

NRB = Non-Restricted Band, Limit is 20 dB below Fundamental; RB = Restricted Band

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rest Freq.	2437 - Rx Mode		CSB
Variant	AC Line Emissions		22
Freq. Range	0.150 MHz - 30 MHz		38
Power Setting	N/A		1006
Antenna	Integral Antennas		
Test Notes 1	AC Powered - 120V AC 60Hz		
Test Notes 2	Red trace = Neautral, AVG Detector; Blue tra	ce = Live, AVG Detector	
	Vasona by EM	· · · · · · · · · · · · · · · · · · ·	— [1] Single — [2] Neutral — Quasi It op — Awerage It + Debug + Formal



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8 TEST EQUIPMENT DETAILS

Asset #	Instrument	Manufacturer	Part #	Serial #
0088	Spectrum Analyzer	Hewlett Packard	8564E	3410A00141
0134	Amplifier	Com Power	PA 122	181910
0158	Barometer /Thermometer	Control Co.	4196	E2846
0287	EMI Receiver	Rhode & Schwartz	ESIB 40	100201
0252	SMA Cable	Megaphase	Sucoflex 104	None
0310	2m SMA Cable	Micro-Coax	UFA210A-0-0787- 3G03G0	209089-001
0312	3m SMA Cable	Micro-Coax	UFA210A-1-1181- 3G0300	209092-001
0313	Coupler	Hewlett Packard	86205A	3140A01285
0314	30dB N-Type Attenuator	ARRA	N9444-30	1623
0070	Power Meter	Hewlett Packard	437B	3125U11552
0116	Power Sensor	Hewlett Packard	8485A	3318A19694
0117	Power Sensor	Hewlett Packard	8487D	3318A00371
0184	Pulse Limiter	Rhode & Schwartz	ESH3Z2	357.8810.52
0190	LISN	Rhode & Schwartz	ESH3Z5	836679/006
0293	BNC Cable	Megaphase	1689 1GVT4	15F50B001
0301	5.6 GHz Notch Filter	Micro-Tronics	RBC50704	001
0302	5.25 GHz Notch Filter	Micro-Tronics	BRC50703	002
0303	5.8 GHz Notch Filter	Micro-Tronics	BRC50705	003
0304	2.4GHzHz Notch Filter	Micro-Tronics		001
0307	BNC Cable	Megaphase	1689 1GVT4	15F50B002
0335	1-18GHz Horn Antenna	ETS- Lindgren	3117	00066580
0337	Amplifier	MiCOM Labs		
0338	Antenna	Sunol Sciences	JB-3	A052907



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