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8.1 Test Limit

FCC Part15(15.247), Subpart C					
Section	Test Item	Limit	Frequency Range (MHz)	Result	
15.247(b)(3)	Peak Output Power	1 watt or 30dBm	2400-2483.5	PASS	

8.2 Test Procedure

1. The EUT was placed on a turn table which is 0.8m above ground plane.

2. The EUT was directly connected to the Power meter.

8.3 Measurement Equipment Used

Used a Power meter.

8.4 Test Result

PASS

All the test modes completed for test.

	1	Output	Output	Output	Output	Output		
Туре	Channel	power	power	power	power	power	Limit	Pocult
		PK (dBm)	PK (dBm)	PK (dBm)	PK (dBm)	Total	(dBm)	Result
		ANT A	ANT B	ANT C	ANT D	(dBm) 🚽		
	01	12.14	12.06	12.23	11.87	18.10		
802.11b	06	12.01	12.14	11.94	11.49	17.92	28.98	Pass
	11 🔪	11.98	11.81	11.64	11.35	17.72		26
802.11g	01	11.54	11.42	11.21	11.04	17.33		2
	06	11.65	11.34	11.05	11.31	17.36	28.98	Pass
	11	11.96	11.24	11.34	11.65	17.58		
802.11n(HT20)	01	12.68	12.38	12.36	12.15	18.42		
	06	12.11	12.14	12.47	12.31	18.28	28.98	Pass
	_w 11	12.36	12.68	12.30	12.14	18.40		15

Note:

1) Measured output power at difference data rate for each mode and recorded worst case for each mode.

2). Test results including cable loss;

3). 802.11b ,802.11g mode the ANT A, ANT B, ANT C and ANT D can not TX and RX at the same time;

4). 802.11n(20) mode the ANT A, ANT B, ANT C and ANT D can TX and RX at the same time;

5). Directional gain=GANT +10log(N)dbi =1.0+10log4=7.02dbi;

6). For power test the duty cycle is 100% in continous transmitting mode.

7).TX means Transmitter; RX means Receive.

9. OUT OF BAND EMISSIONS TEST

9.1 Test Limit

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20dB.

9.2 Test Procedure

- 1. The EUT was placed on a turn table which is 0.8m above ground plane.
- 2. Set EUT as TX operation and connect directly to the spectrum analyzer.
- 3. Based on FCC Part15 C Section 15.247: RBW=100KHz, VBW=300KHz.
- 4. Set detected by the spectrum analyzer with peak detector.

9.3 Test Setup



9.4 Test Result

PASS

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ANT B



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	802.11	n HT20		
Frequency (MHz)	Delta Peak to Band emission (dBc)	Limit (dBc)	Verdict	
2400.00	38.253	20	PASS	
2483.50	49.553	20	PASS	
Start Freq 2.310000000 GHz Start Freq 2.310000000 GHz File File	Alton Autor Avg Type: Log-Per Avg Type: Log-Per Autor Tune Frequency Autor Tune Center Freq 2.35000000 GHz Stop 2.42000 GHz Stop 2.42000 GHz Stop 2.42000 GHz Autor Tune Center Freq 2.42000000 GHz Stop 7.42000 GHz Autor Tune Center Freq 2.42000000 GHz Stop 7.42000 GHz Autor Tune Center Freq 2.42000000 GHz Stop 7.42000 GHz Center Freq 2.42000000 GHz Center Freq Center Freq 2.42000000 GHz Center Freq 2.42000000 GHz Center Freq 2.42000000 GHz Center Freq Center Freq Center Freq Center Freq Center Freq Center Freq Center Freq 2.42000000 GHz Center Freq Center Freq	Bit Mark Start Freq 2.45000000 GHz Start Freq 2.45000000 GHz Trig: Free Run Start Freq 2.45000000 GHz If Gala Cov Trig: Free Run Atter: 30 dB 10 dBdv Ref 20.00 dBm If Gala Cov Trig: Free Run Atter: 30 dB 10 dBdv Ref 20.00 dBm If Gala Cov Trig: Free Run Atter: 30 dB 10 dBdv Ref 20.00 dBm If Gala Cov Trig: Free Run If Gala Cov 10 dBdv Ref 20.00 dBm If Gala Cov Trig: Free Run If Gala Cov 10 dBdv Ref 20.00 dBm If Gala Cov If Gala Cov If Gala Cov 10 dDv If Cov If Gala Cov If Gala Cov If Gala Cov 11 dV If Cov Zov If Gala Cov If Gala Cov 10 dV If Cov Zov If Gala Cov If Gala Cov 10 dV If Cov Zov If Cov If Cov 10 dV If Cov If Cov If Cov If Cov 10 dV If Cov If Cov If Cov If Cov 10 dV If Co	Argin Arrow 1950/13 Arrow Trace 1950/13 Arrow Frequency Arg Type: Log-Per Argin/did:=100100 Trace 133 arrow Auto Tune Mkr1 2.465 25 GHz 2.663 dBm Auto Tune Center Freq 2.47500000 GHz Auto Tune Stop 2.50000 GHz Sweep 4.800 ms (1001 pts) Stop Freq 2.50000000 GHz Stop Freq 2.50000000 GHz Stop Freq 2.60000000 GHz NCTON Function width Function width Function width Mark INCTON Function width Function width Center Freq 2.500000000 GHz Stop Freq 2.600000000 GHz Stop Freq 2.600000000 GHz Stop 2.50000 GHz Stop Freq 2.60000000 GHz CF Step 5.00000 GHz Stop Freq 2.60000000 GHz Stop 2.50000 GHz Freq Offset 0 Hz Grade Type Log Lin	
24	12	2462		



	802	.11g	- 1
Frequency (MHz)	Delta Peak to Band emission (dBc)	Limit (dBc)	Verdict
2400.00	35.452	20	PASS
2483.05	53.45	20	PASS
Keysigi Spectrum Analyzer - Serget SA	Avg Type Log Per Avg Ty	Keysight Spectrum Analyzer Swept Sa 37 Start Freq 2.450000000 GHz FRO: Fast - 10 dElduv Ref 20.00 dBm 10 0 delduv Ref 20.00 dBm 10 0 delduv 10 10 10 10 10 10 10 10 10 10	ALISN AUTO Avg Type: Log-Per Avg Type: Log-Per AvgHold:>100100 Mkr1 2.463 25 GHz 1.983 dBm Center Freq 2.47500000 GHz
400 400 400 400 400 400 400 400	Start Freq 2.31000000 GHz Stop Freq 2.42000000 GHz		Start Freq 2.45000000 GHz 250000000 GHz
Start 2.31000 GHz #Res BW 100 kHz 100 kHz 2 #V 100 kHz 2 V 1 2 2413 29 GHz 2 V 1 2 241	Stop 2.42000 GHz CF Step 11.00000 MHz Man Man Man Finction value Freq Offset 0 Hz Scale Type Bratus	Start 2.45000 GHz #VBW 300 KHz #Res BW 100 KHz #VBW 300 KHz Tom NOCE FIC SCU 2.443 26 GHz 1 983 dBm 3 1 2.443 50 GHz 51 467 dBm 3 1 2.443 50 GHz 51 467 dBm 4 1 2.443 50 GHz 51 467 dBm 5 1 1 2.443 50 GHz 51 467 dBm 6 1 1 1 1 1 7 1 1 2.443 50 GHz 51 467 dBm 1 6 1 1 1 1 1 1 1 7 1	Stop 2.50000 GHz Sweep 4.800 ms (1001 pts) Action PUNCTON WUEF PUNCTON WUEF BEALD
24	12	24	62



ANT D



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	802.11	n HT20	-1
Frequency (MHz)	Delta Peak to Band emission (dBc)	Limit (dBc)	Verdict
2400.00	31.000	20	PASS
2483.50	44.719	20	PASS
Comparing Spectrum Analgers Savers SA So 20 0 0 0 C Start Freq 2.310000000 GHz From Factors	Autor anno Avg Type: Log-Per Avg Hold->100100 Tree Must 12,413,29 GHz 3.813 dBm	Knyojet Spentan Adayer Sept 5A Sept 50 0 CZ Start Freq 2.450000000 GHz FR0: Feet CP If Girlin Cov Trig: Free Rin If Califold Ref 20.00 dBm	Autor Surro Avg Type: Log-Pur Avg Heid-100100 Type Mkr1 2.463 25 GHz 3.745 GHz
	2.36500000 GHz	100 000 000	Center Freq 2.47500000 GHz
200	Start Freq 2.31000000 GHz	000 0000000000000000000000000000000000	Start Freq 2.45000000 GHz
-500 particular	Stop Freq 2.420000000 GHz	400 460 700	Stop Freq 2.50000000 GHz
Start 2.31000 GHz #VBW 300 kHz #Res BW 100 kHz #VBW 300 kHz Imm Model TRC SCL X Y Imm Model TRC SCL X Y	Stop 2.42000 GHz CF Step 11.000000 MHz Sweep 10.53 ms (1001 pts) 11.000000 MHz NCTION FUNCTION WIDTH FUNCTION VALUE	Start 2.45000 GHz #Res BW 100 kHz #VBW 300 kHz MR WORE TRC:SLL X Y FW FUNCTION OF TRC:SLL X Y FW	Stop 2,50000 GHz Sweep 4.800 ms (1001 pts) CTION FUNCTION VALUE Auto Man
2 N 1 1 2.400.000 GHz -27.187 dBm 4 5 6	Freq Offset 0 Hz	N 1 7 2.483 50 GHz -3/190 dBm 3 1 1 2.483 50 GHz -40.974 dBm 4 5 5 5 5	Freq Offset 0 Hz
	Log Lin		Log Lin
24	12	246	, protection 52

10. SPURIOUS RF CONDUCTED EMISSION

- 10.1 Test Limit
 - 1. Below -20dB of the highest emission level in operating band.

2. Fall in the restricted bands listed in section 15.205. The maximum permitted average field strength is listed in section 15.209.

3.For below 30MHz,For 9KHz-150kHz,150K-10MHz,We use the RBW 1KHz,10KHz, So the limit need to calculated by "10lg(BW1/BW2)". for example For9KHz-150kHz,RBW 1KHz, The Limit= the highest emission level-20-10log(100/1)= the highest emission level-40.

10.2 Test Procedure

The Spurious RF conducted emissions compliance of RF radiated emission should be measured by following the guidance in ANSI C63.10-2013, For 9KHz-150kHz, Set RBW=1kHz and VBW= 3KHz; For 150KHz-10MHz, Set RBW=10kHz and VBW= 30KHz:For 10MHz-25GHz, Set RBW=100kHz and VBW= 300KHz in order to measure the peak field strength, and mwasure frequeny range from 9KHz to 25GHz.

10.3 Test Setup



10.4 Test Result

PASS

Remark: The measurement frequency range is from 9KHz to the 10th harmonic of the fundamental frequency. The lowest, middle and highest channels are tested to verify the spurious emissions and bandege measurement data.and record the worstest data for Antenna B in report.



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11. ANTENNA REQUIREMENT

Standard Applicable: For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

Antenna Connected Construction

The product uses four External Antennas, The gain of each antenna used for transmitting is 1.0dBi.



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12. PHOTOGRAPH OF TEST

12.1 Radiated Emission

LN





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12.2 Conducted Emission



End of Report

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