



FCC RF Test Report

APPLICANT : Lenovo(Shanghai) Electronics Technology Co., Ltd.
EQUIPMENT : Portable Tablet Computer
BRAND NAME : Lenovo
MODEL NAME : Lenovo YB1-X91F
FCC ID : O57YB1X91F
STANDARD : FCC Part 15 Subpart E §15.407
CLASSIFICATION : (NII) Unlicensed National Information Infrastructure

The product was received on Mar. 21, 2016 and testing was completed on Apr. 26, 2016. We, SPORTON INTERNATIONAL (KUNSHAN) INC., would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL (KUNSHAN) INC., the test report shall not be reproduced except in full.

James Huang

Prepared by: James Huang / Manager



Approved by: Jones Tsai / Manager

SPORTON INTERNATIONAL (KUNSHAN) INC.
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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR631602-01D	Rev. 01	Initial issue of report	Apr. 28, 2016



SUMMARY OF TEST RESULT

Report Section	FCC Rule	IC Rule	Description	Limit	Result	Remark
3.1	2.1049 15.403(j)	RSS-247 Section 6	26dB & 99% Bandwidth	-	Pass	-
3.2	15.407(a)	RSS-247 Section 6	Maximum Conducted Output Power	FCC ≤24 dBm (depend on band) IC RSS-247 Section 6 Limit	Pass	-
3.3	15.407(a)	RSS-247 Section 6	Power Spectral Density	FCC ≤11 dBm (depend on band) IC RSS-247 Section 6 Limit	Pass	-
3.4	15.407(b)	RSS-247 Section 6	Unwanted Emissions	≤ -17, -27 dBm (depend on band)&15.209(a)	Pass	Under limit 2.64 dB at 5469.520 MHz
3.5	15.207	RSS-Gen 8.8	AC Conducted Emission	15.207(a)	Pass	Under limit 3.41 dB at 0.590 MHz
3.6	15.407(g)	-	Frequency Stability	Within Operation Band	Pass	-
3.7	15.407(c)	RSS-247 6.4(2)	Automatically Discontinue Transmission	Discontinue Transmission	Pass	-
3.8	15.203 & 15.407(a)	N/A	Antenna Requirement	N/A	Pass	-



1 General Description

1.1 Applicant

Lenovo(Shanghai) Electronics Technology Co., Ltd.

NO.68 BUILDING, 199 FENJU RD, China (Shanghai) Pilot Free Trade Zone, 200131, CHINA

1.2 Manufacturer

Lenovo PC HK Limited

23/F, Lincoln House, Taikoo Place 979 King's Road, Quarry Bay, Hong Kong

1.3 Feature of Equipment Under Test

Product Feature & Specification	
Equipment	Portable Tablet Computer
Brand Name	Lenovo
Model Name	Lenovo YB1-X91F
FCC ID	O57YB1X91F
EUT supports Radios application	WLAN2.4GHz 802.11b/g/n HT20/ WLAN5GHz 802.11a/n HT20/HT40/ WLAN5GHz 802.11ac VHT20/VHT40/VHT80/ Bluetooth v3.0+EDR/Bluetooth v4.0 LE
HW Version	Lenovopad YB1-X91F
SW Version	LenovoYETI_W10_S100_160301_001
EUT Stage	Identical Prototype

Remark: The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.



1.4 Product Specification of Equipment Under Test

Product Specification subjective to this standard	
Tx/Rx Frequency Range	5180 MHz ~ 5240 MHz 5260 MHz ~ 5320 MHz 5500 MHz ~ 5700 MHz
Maximum Output Power to Antenna	<p><5180 MHz ~ 5240 MHz> 802.11a : 15.47 dBm / 0.0352 W 802.11n HT20 : 12.34 dBm / 0.0171 W 802.11n HT40 : 12.73 dBm / 0.0187 W 802.11ac VHT20 : 14.57 dBm / 0.0286 W 802.11ac VHT40 : 11.45 dBm / 0.0140 W 802.11ac VHT80 : 12.31 dBm / 0.0170 W</p> <p><5260 MHz ~ 5320 MHz> 802.11a : 15.40 dBm / 0.0347 W 802.11n HT20 : 12.22 dBm / 0.0167 W 802.11n HT40 : 13.61 dBm / 0.0230 W 802.11ac VHT20 : 14.25 dBm / 0.0266 W 802.11ac VHT40 : 12.46 dBm / 0.0176 W 802.11ac VHT80 : 13.36 dBm / 0.0217 W</p> <p><5500 MHz ~ 5700 MHz> 802.11a : 15.94 dBm / 0.0393 W 802.11n HT20 : 12.81 dBm / 0.0191 W 802.11n HT40 : 13.93 dBm / 0.0247 W 802.11ac VHT20 : 13.96 dBm / 0.0249 W 802.11ac VHT40 : 12.98 dBm / 0.0199 W 802.11ac VHT80 : 11.52 dBm / 0.0142 W</p>
99% Occupied Bandwidth	<p><5180 MHz ~ 5240 MHz> 802.11a : 18.33 MHz 802.11n HT20 : 19.13 MHz 802.11n HT40 : 36.76 MHz 802.11ac VHT20: 18.98 MHz 802.11ac VHT40 : 37.16 MHz 802.11ac VHT80 : 75.76 MHz</p> <p><5260 MHz ~ 5320 MHz> 802.11a : 18.28 MHz 802.11n HT20 : 19.13 MHz 802.11n HT40 : 36.76 MHz 802.11ac VHT20: 19.08 MHz 802.11ac VHT40 : 37.06 MHz 802.11ac VHT80 : 75.76 MHz</p> <p><5500 MHz ~ 5700 MHz> 802.11a : 18.33 MHz 802.11n HT20 : 19.18 MHz 802.11n HT40 : 36.76 MHz 802.11ac VHT20: 19.23 MHz 802.11ac VHT40 : 37.16 MHz 802.11ac VHT80 : 75.76 MHz</p>



Antenna Type	PIFA Antenna		
Antenna Gain	<p><5180 MHz ~ 5240 MHz>: Chain Port 1 : 0.63 dBi Chain Port 2 : 0.03 dBi <5260 MHz ~ 5320 MHz>: Chain Port 1 : 1.20 dBi Chain Port 2 : 0.10 dBi <5500 MHz ~ 5700 MHz>: Chain Port 1 : 0.09 dBi Chain Port 2 : -1.58 dBi</p>		
Type of Modulation	802.11a/n : OFDM (BPSK / QPSK / 16QAM / 64QAM) 802.11ac : OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM)		
Antenna Function Description		Chain Port 1	Chain Port 2
	802.11a	V	V
	802.11n/ac SISO	V	V
	802.11n/ac MIMO	V	V



1.5 Component List

Note: There are two types of EUT, the details refer the following table. According to the difference, we evaluate is not affect RF performance, so only choose sample 1 to perform RF test.

Component	Sample 1	Sample 2
CPU	Intel Intel® Atom™ x5-Z8550 Processor	Intel Intel® Atom™ x5-Z8550 Processor
Flash	Semtech W25Q64FWZPIG	Semtech W25Q64FWZPIG
eMMC	Samsung KLMCG8WEBD-B031	Samsung KLMCG4JENB-B041
DDR	Samsung K3QF2F20EM-AGCE	Micron MT52L256M64D2PP-107WT
LCD	INX P101KDA-AK0;10.1;IPS;1200×1920;MIPI;2.5	AUO B101UAN07.1;10.1;IPS1200×1920MIPI;2.5
TP	O-Film TP_GFF_OF/MCF-101-2292	GIS TP_GFF_GIS/TC101GFL11 V.A
Front Camera	Primax CCM L202V 2M OV2740 COB 24PIN BtoB	Primax CCM L202V 2M OV2740 COB 24PIN BtoB
Back Camera	Ofilm CCM L8858A20 8M OV8858 COB 31PIN ZIF	Ofilm CCM L8858A20 8M OV8858 COB 31PIN ZIF
Battery	CELXPERT L15C2P31 3.8V;32.3Wh;8500mAh; 2cell bty	CELXPERT L15C2P31 3.8V;32.3Wh;8500mAh; 2cell bty



1.6 Modification of EUT

No modifications are made to the EUT during all test items.

1.7 Testing Location

Test Site	SPORTON INTERNATIONAL (KUNSHAN) INC.			
Test Site Location	No. 3-2, PingXiang Road, Kunshan, Jiangsu Province, P. R. China TEL: +86-0512-5790-0158 FAX: +86-0512-5790-0958			
Test Site No.	Sporton Site No.			FCC/IC Registration No.
	TH01-KS	CO01-KS	03CH03-KS	306251/4086E

Note: The test site complies with ANSI C63.4 2014 requirement.

1.8 Applicable Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- FCC Part 15 Subpart E
- FCC KDB 789033 D02 General UNII Test Procedures New Rules v01r02
- FCC KDB 662911 D01 Multiple Transmitter Output v02r01.
- FCC KDB 644545 D03 Guidance for IEEE 802 11ac New Rules v01
- ANSI C63.10-2013

Remark:

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.



2 Test Configuration of Equipment Under Test

The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: conducted emission (150 kHz to 30 MHz) and radiated emission (9 kHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower). For radiated measurement, pre-scanned in four panels, X, Y, Z, Laptop. The worst cases (X/Y plane) were recorded in this report.

The final configuration from all the combinations and the worst-case data rates were investigated by measuring the maximum power across all the data rates and modulation modes under section 2.2.

Based on the worst configuration found above, the RF power setting is set individually to meet FCC compliance limit for the final conducted and radiated tests shown in section 2.3.

2.1 Carrier Frequency Channel

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
5180- 5240 MHz Band 1 (U-NII-1)	36	5180	44	5220
	38	5190	46	5230
	40	5200	48	5240
	42	5210		

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
5260-5320 MHz Band 2 (U-NII-2A)	52	5260	60	5300
	54	5270	62	5310
	56	5280	64	5320
	58	5290		

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
5500-5700 MHz Band 3 (U-NII-2C)	100	5500	112	5560
	102	5510	116	5580
	104	5520	132	5660
	106	5530	134	5670
	108	5540	136	5680
	110	5550	140	5700

Note: The above Frequency and Channel in boldface were 802.11n HT40.



2.2 Pre-Scanned RF Power

Preliminary tests were performed in different data rate and data rate associated with the highest power were chosen for full test in the following tables. Final Output Power equals to Measured Output Power adds the duty factor.

WLAN 5GHz 802.11a Average Power (dBm)											
Power vs. Channel				Power vs. Data Rate							
Channel	Frequency (MHz)	Chain Port	Data Rate	Channel	9Mbps	12Mbps	18Mbps	24Mbps	36Mbps	48Mbps	54Mbps
			6Mbps								
CH 36	5180	1	14.57	CH 48	14.54	14.55	14.67	14.90	14.84	14.93	14.86
CH 44	5220	1	14.58							15.01	
CH 48	5240	1	14.70							15.06	
CH 52	5260	1	14.70	CH 52	14.60	14.82	14.65	14.83	14.91	15.05	14.95
CH 60	5300	1	14.51							14.77	
CH 64	5320	1	14.53							14.84	
CH 100	5500	1	14.98	CH 140	14.86	14.93	14.88	14.94	15.02	15.17	15.04
CH 116	5580	1	14.07							14.21	
CH 140	5700	1	15.07							15.25	
CH 36	5180	2	14.65	CH 48	15.06	15.18	15.17	15.39	15.43	15.05	15.44
CH 44	5220	2	15.14							15.45	
CH 48	5240	2	15.39							15.47	
CH 52	5260	2	15.12	CH 64	15.03	15.09	15.13	15.34	15.22	15.34	15.22
CH 60	5300	2	15.06							15.38	
CH 64	5320	2	15.15							15.40	
CH 100	5500	2	15.88	CH 100	15.68	15.59	15.64	15.86	15.73	15.94	15.82
CH 116	5580	2	14.99							15.39	
CH 140	5700	2	15.39							15.59	



WLAN 5GHz 802.11n-HT20 Average Power (dBm)											
Power vs. Channel				Power vs. Data Rate							
Channel	Frequency (MHz)	Chain Port	MCS Index	Channel	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
			MCS0								
CH 36	5180	1	11.24	CH 48	11.84	11.90	12.15	12.13	12.17	12.16	11.60
CH 44	5220	1	11.79								11.98
CH 48	5240	1	11.88								12.19
CH 52	5260	1	11.38	CH 64	11.39	11.45	11.75	11.73	11.77	11.81	11.62
CH 60	5300	1	11.12								11.82
CH 64	5320	1	11.42								11.89
CH 100	5500	1	12.68	CH 100	12.45	12.59	12.76	12.75	12.74	12.74	12.77
CH 116	5580	1	11.72								12.27
CH 140	5700	1	12.83								12.73
CH 36	5180	2	10.53	CH 48	11.30	11.31	11.75	11.70	11.52	11.76	10.63
CH 44	5220	2	11.09								11.40
CH 48	5240	2	11.33								11.80
CH 52	5260	2	10.77	CH 64	10.90	10.93	11.27	11.23	11.30	11.32	11.06
CH 60	5300	2	10.89								11.20
CH 64	5320	2	11.00								11.35
CH 100	5500	2	12.40	CH 100	12.20	12.23	12.46	12.62	12.60	12.57	12.70
CH 116	5580	2	12.35								12.68
CH 140	5700	2	12.28								12.66
Channel	Frequency (MHz)	Chain Port	MCS Index	Channel	MCS9	MCS10	MCS11	MCS12	MCS13	MCS14	MCS15
			MCS8								
CH 36	5180	1+2(1)	8.98	CH 48	9.15	9.02	9.56	9.41	9.38	9.49	9.40
CH 44	5220	1+2(1)	9.13								9.52
CH 48	5240	1+2(1)	9.30								9.59
CH 52	5260	1+2(1)	8.65	CH 64	8.85	9.00	9.34	9.11	9.35	9.32	9.12
CH 60	5300	1+2(1)	8.89								9.36
CH 64	5320	1+2(1)	9.12								9.37
CH 100	5500	1+2(1)	9.48	CH 100	9.26	9.56	9.64	9.77	9.65	9.69	9.80
CH 116	5580	1+2(1)	9.44								9.65
CH 140	5700	1+2(1)	9.22								9.66
CH 36	5180	1+2(2)	8.69	CH 48	8.75	8.36	9.05	9.03	8.85	8.89	9.05
CH 44	5220	1+2(2)	8.50								9.00
CH 48	5240	1+2(2)	8.72								9.06
CH 52	5260	1+2(2)	8.30	CH 64	8.69	8.85	9.03	9.02	9.05	8.92	8.74
CH 60	5300	1+2(2)	8.86								9.03
CH 64	5320	1+2(2)	8.93								9.06
CH 100	5500	1+2(2)	9.56	CH 100	9.58	9.54	9.72	9.66	9.64	9.58	9.81
CH 116	5580	1+2(2)	9.51								9.73
CH 140	5700	1+2(2)	9.09								9.51
CH 36	5180	1+2	11.85	CH 48	11.96	11.72	12.32	12.23	12.13	12.21	12.23
CH 44	5220	1+2	11.84								12.27
CH 48	5240	1+2	12.03								12.34
CH 52	5260	1+2	11.49	CH 64	11.78	11.94	12.19	12.07	12.21	12.13	11.94
CH 60	5300	1+2	11.89								12.20
CH 64	5320	1+2	12.04								12.22
CH 100	5500	1+2	12.53	CH 100	12.43	12.56	12.69	12.72	12.65	12.64	12.81
CH 116	5580	1+2	12.49								12.70
CH 140	5700	1+2	12.17								12.59



WLAN 5GHz 802.11n-HT40 Average Power (dBm)											
Power vs. Channel				Power vs. Data Rate							
Channel	Frequency (MHz)	Chain Port	MCS Index	Channel	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
			MCS0								
CH 38	5190	1	11.87	CH 38	11.88	11.62	11.87	11.97	11.90	11.93	11.99
CH 46	5230	1	11.83								11.86
CH 54	5270	1	11.13	CH 62	11.19	11.18	11.24	11.27	11.30	11.35	11.29
CH 62	5310	1	11.22								11.42
CH 102	5510	1	10.93	CH 102	10.82	10.67	10.81	11.01	11.05	10.98	11.08
CH 110	5550	1	10.88								10.92
CH 134	5670	1	10.57								10.59
CH 38	5190	2	10.16								10.34
CH 46	5230	2	10.49	CH 46	10.55	10.56	10.65	10.68	10.72	10.70	10.73
CH 54	5270	2	11.10	CH 62	11.07	10.95	11.20	11.30	11.26	11.29	11.16
CH 62	5310	2	11.19								11.33
CH 102	5510	2	10.99	CH 102	10.80	10.79	10.87	11.03	10.85	10.95	11.10
CH 110	5550	2	10.89								11.01
CH 134	5670	2	10.43								10.59
CH 38	5190	2	10.16								10.34
Channel	Frequency (MHz)	Chain Port	MCS Index	Channel	MCS9	MCS10	MCS11	MCS12	MCS13	MCS14	MCS15
			MCS8								
CH 38	5190	1+2(1)	9.18	CH 46	9.59	9.61	9.74	9.80	9.72	9.79	9.53
CH 46	5230	1+2(1)	9.51								9.87
CH 54	5270	1+2(1)	10.48	CH 62	10.68	10.47	10.67	10.77	10.65	10.63	10.63
CH 62	5310	1+2(1)	10.74								10.88
CH 102	5510	1+2(1)	10.59	CH 110	10.64	10.50	10.76	10.92	10.69	10.78	10.81
CH 110	5550	1+2(1)	10.70								10.93
CH 134	5670	1+2(1)	10.51								10.72
CH 38	5190	1+2(2)	9.13								9.25
CH 46	5230	1+2(2)	9.51	CH 46	9.50	9.54	9.39	9.35	9.35	9.49	9.58
CH 54	5270	1+2(2)	10.13	CH 62	10.09	10.22	10.26	10.25	10.15	10.20	10.21
CH 62	5310	1+2(2)	10.27								10.31
CH 102	5510	1+2(2)	10.56	CH 110	10.78	10.82	10.87	10.87	10.89	10.88	10.73
CH 110	5550	1+2(2)	10.73								10.91
CH 134	5670	1+2(2)	10.47								10.56
CH 38	5190	1+2	12.16								12.40
CH 46	5230	1+2	12.52	CH 46	12.56	12.59	12.58	12.59	12.55	12.65	12.73
CH 54	5270	1+2	13.32	CH 62	13.41	13.36	13.48	13.53	13.41	13.43	13.43
CH 62	5310	1+2	13.52								13.61
CH 102	5510	1+2	13.58	CH 110	13.72	13.67	13.83	13.90	13.80	13.84	13.78
CH 110	5550	1+2	13.72								13.93
CH 134	5670	1+2	13.50								13.65
CH 38	5190	1+2	12.16								12.40



WLAN 5GHz 802.11ac VHT20 Average Power (dBm)																				
Power vs. Channel				Power vs. Data Rate																
Channel	Frequency (MHz)	Chain Port	MCS Index	Channel	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	MCS8								
			MCS0																	
CH 36	5180	1	10.41	CH 48	10.85	10.98	11.21	11.05	11.01	11.09	11.12	10.74								
CH 44	5220	1	10.88									11.28								
CH 48	5240	1	10.91									11.38								
CH 52	5260	1	11.16									11.57								
CH 60	5300	1	11.09									CH 64	11.22	11.25	11.49	11.56	11.42	11.55	11.58	11.44
CH 64	5320	1	11.19																	11.68
CH 100	5500	1	10.72																	10.99
CH 116	5580	1	9.49									CH 100	10.66	10.71	10.81	10.96	10.92	10.89	10.87	9.64
CH 140	5700	1	10.66																	10.88
CH 36	5180	2	10.49	CH 48	11.26	11.27	11.56	11.63	11.67	11.47	11.50									11.06
CH 44	5220	2	11.18									11.48								
CH 48	5240	2	11.29									11.68								
CH 52	5260	2	10.73									CH 64	10.94	11.03	11.18	11.15	11.06	11.12	11.10	10.88
CH 60	5300	2	10.83																	11.14
CH 64	5320	2	10.90																	11.19
CH 100	5500	2	10.73									CH 100	10.72	10.68	10.80	10.77	10.78	10.81	10.77	10.98
CH 116	5580	2	10.63																	10.82
CH 140	5700	2	10.29																	10.48
CH 36	5180	1+2(1)	11.43	CH 48	11.62	11.48	11.74	11.77	11.70	11.73	11.79	11.78								
CH 44	5220	1+2(1)	11.41									11.74								
CH 48	5240	1+2(1)	11.56									11.87								
CH 52	5260	1+2(1)	10.97									CH 64	11.08	11.10	11.35	11.50	11.53	11.46	11.40	11.25
CH 60	5300	1+2(1)	11.06																	11.44
CH 64	5320	1+2(1)	11.11																	11.59
CH 100	5500	1+2(1)	10.55									CH 100	10.49	10.59	10.82	10.86	10.98	10.92	10.99	11.01
CH 116	5580	1+2(1)	10.44																	10.87
CH 140	5700	1+2(1)	10.22																	10.81
CH 36	5180	1+2(2)	10.74	CH 48	10.93	10.69	11.11	11.11	11.18	11.22	11.21	11.10								
CH 44	5220	1+2(2)	10.92									11.05								
CH 48	5240	1+2(2)	10.98									11.23								
CH 52	5260	1+2(2)	10.27									CH 64	10.69	10.44	10.74	10.69	10.77	10.86	10.83	10.69
CH 60	5300	1+2(2)	10.35																	10.68
CH 64	5320	1+2(2)	10.56																	10.86
CH 100	5500	1+2(2)	10.56									CH 100	10.78	10.55	10.76	10.83	10.85	10.79	10.84	10.89
CH 116	5580	1+2(2)	10.49																	10.79
CH 140	5700	1+2(2)	10.36																	10.43
CH 36	5180	1+2	14.11	CH 48	14.30	14.11	14.45	14.46	14.46	14.49	14.52	14.47								
CH 44	5220	1+2	14.18									14.42								
CH 48	5240	1+2	14.29									14.57								
CH 52	5260	1+2	13.64									CH 64	13.90	13.79	14.06	14.13	14.17	14.18	14.14	13.99
CH 60	5300	1+2	13.73																	14.09
CH 64	5320	1+2	13.85																	14.25
CH 100	5500	1+2	13.56									CH 100	13.65	13.58	13.80	13.86	13.92	13.87	13.93	13.96
CH 116	5580	1+2	13.48																	13.84
CH 140	5700	1+2	13.30																	13.64



WLAN 5GHz 802.11ac VHT40 Average Power (dBm)													
Power vs. Channel				Power vs. Data Rate									
Channel	Frequency (MHz)	Chain Port	MCS Index MCS0	Channel	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	MCS8	MCS9
CH 38	5190	1	10.65	CH 46	10.98	10.96	10.96	11.02	10.99	10.92	10.95	10.93	10.74
CH 46	5230	1	10.95										11.03
CH 54	5270	1	11.33	CH 62	11.43	11.51	11.61	11.62	10.66	11.63	11.57	11.65	11.58
CH 62	5310	1	11.42										11.68
CH 102	5510	1	11.04	CH 102	10.99	11.06	10.96	11.00	10.98	11.05	11.06	10.97	11.09
CH 110	5550	1	10.88										10.92
CH 134	5670	1	10.75										10.84
CH 38	5190	2	10.22										CH 46
CH 46	5230	2	10.55	10.73									
CH 54	5270	2	11.11	CH 62	10.98	10.99	11.24	11.12	11.06	11.19	11.14	11.08	11.23
CH 62	5310	2	11.20										11.29
CH 102	5510	2	11.07	CH 102	10.99	10.88	11.00	11.06	11.05	11.03	10.96	10.98	11.08
CH 110	5550	2	10.85										10.92
CH 134	5670	2	10.43										10.47
CH 38	5190	1+2(1)	7.97										CH 46
CH 46	5230	1+2(1)	8.29	8.58									
CH 54	5270	1+2(1)	9.14	CH 62	9.41	9.23	9.44	9.43	9.40	9.35	9.51	9.55	9.49
CH 62	5310	1+2(1)	9.42										9.60
CH 102	5510	1+2(1)	9.76	CH 102	9.66	9.73	9.83	9.79	9.76	9.62	9.91	9.83	9.93
CH 110	5550	1+2(1)	9.53										9.79
CH 134	5670	1+2(1)	9.29										9.49
CH 38	5190	1+2(2)	7.64										CH 46
CH 46	5230	1+2(2)	8.17	8.30									
CH 54	5270	1+2(2)	8.78	CH 62	8.97	9.19	9.17	9.19	9.27	9.26	9.22	9.24	8.92
CH 62	5310	1+2(2)	9.10										9.30
CH 102	5510	1+2(2)	9.78	CH 102	9.71	9.72	9.97	9.90	9.90	9.95	9.98	9.91	10.01
CH 110	5550	1+2(2)	9.76										9.74
CH 134	5670	1+2(2)	9.30										9.47
CH 38	5190	1+2	10.82										CH 46
CH 46	5230	1+2	11.24	11.45									
CH 54	5270	1+2	11.98	CH 62	12.21	12.22	12.32	12.39	12.35	12.37	12.43	12.41	12.22
CH 62	5310	1+2	12.28										12.46
CH 102	5510	1+2	12.78	CH 102	12.70	12.73	12.91	12.86	12.84	12.80	12.96	12.88	12.98
CH 110	5550	1+2	12.66										12.77
CH 134	5670	1+2	12.31										12.49



WLAN 5GHz 802.11ac VHT80 Average Power (dBm)													
Power vs. Channel				Power vs. Data Rate									
Channel	Frequency (MHz)	Chain Port	MCS Index	Channel	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	MCS8	MCS9
			MCS0										
CH 42	5210	1	10.47	CH 42	10.45	10.42	10.74	10.97	10.98	10.78	10.80	10.88	11.03
CH 58	5290	1	11.08	CH 58	11.04	11.01	11.43	11.52	11.50	11.46	11.40	11.49	11.55
CH 106	5530	1	10.32	CH 122	10.50	10.39	10.77	10.85	10.76	10.70	10.83	10.71	10.74
CH 122	5610	1	10.37										10.88
CH 42	5210	2	10.96	CH 42	10.86	10.92	11.18	11.36	11.21	11.30	11.34	11.24	11.41
CH 58	5290	2	10.78	CH 58	10.68	10.72	11.11	11.20	11.07	11.10	11.21	10.99	11.24
CH 106	5530	2	10.37	CH 122	10.49	10.51	10.76	10.94	10.79	10.84	11.02	10.88	10.85
CH 122	5610	2	10.62										11.06
CH 42	5210	1+2(1)	8.99	CH 42	9.16	8.79	9.49	9.29	9.41	9.38	9.40	9.46	9.58
CH 58	5290	1+2(1)	9.95	CH 58	10.09	10.03	10.52	10.36	10.37	10.45	10.48	10.51	10.59
CH 106	5530	1+2(1)	7.87	CH 106	7.94	7.82	8.38	8.15	8.10	8.41	8.09	8.31	8.46
CH 122	5610	1+2(1)	7.80										8.38
CH 42	5210	1+2(2)	8.61	CH 42	8.59	8.51	8.99	8.97	8.95	8.89	8.81	8.92	9.00
CH 58	5290	1+2(2)	9.55	CH 58	9.39	9.48	10.00	10.05	10.01	9.98	9.91	10.03	10.09
CH 106	5530	1+2(2)	8.20	CH 106	8.13	7.89	8.50	8.53	8.41	8.48	8.46	8.55	8.57
CH 122	5610	1+2(2)	8.04										8.39
CH 42	5210	1+2	11.82	CH 42	11.90	11.67	12.26	12.15	12.19	12.15	12.12	12.21	12.31
CH 58	5290	1+2	12.77	CH 58	12.77	12.78	13.28	13.22	13.20	13.23	13.21	13.28	13.36
CH 106	5530	1+2	11.05	CH 106	11.05	10.87	11.45	11.36	11.27	11.45	11.29	11.44	11.52
CH 122	5610	1+2	10.93										11.39

Note: Chain Port 1+2 is a calculated result from sum of the power Chain Port 1+2(1) and Chain Port 1+2(2).



2.3 Test Mode

Final test mode of conducted test items and radiated spurious emissions are considering the modulation and worse data rates from the power table described in section 2.2.

Single Antenna

Modulation	Data Rate
802.11a	48 Mbps
802.11n HT20	MCS7
802.11n HT40	MCS7
802.11ac VHT20	MCS8
802.11ac VHT40	MCS9
802.11ac VHT80	MCS9

MIMO Antenna

Modulation	Data Rate
802.11n HT20	MCS15
802.11n HT40	MCS15
802.11ac VHT20	MCS8
802.11ac VHT40	MCS9
802.11ac VHT80	MCS9

Test Cases	
AC Conducted Emission	Mode 1 : Bluetooth Link + WLAN (5GHz) Link + Earphone + USB Cable (Charging from Adapter 12V) + HDMI Cable for Sample 1 Mode 2 : Bluetooth Link + WLAN (5GHz) Link + Earphone + USB Cable (Charging from Adapter 5.2V) + HDMI Cable for Sample 2
Remark:	
<ol style="list-style-type: none"> For Radiated TCs, the tests were performed with adapter, earphone, USB cable, Sample 1 The worst case of conducted emission is mode 1; only the test data of it was reported. 	



Ch. #		Band I : 5180-5240 MHz	Band II : 5260-5320 MHz	Band III : 5500-5700MHz
		802.11a	802.11a	802.11a
L	Low	36	52	100
M	Middle	44	60	116
H	High	48	64	140

Ch. #		Band I : 5180-5240 MHz	Band II : 5260-5320 MHz	Band III : 5500-5700MHz
		802.11n HT20	802.11n HT20	802.11n HT20
L	Low	36	52	100
M	Middle	44	60	116
H	High	48	64	140

Ch. #		Band I : 5180-5240 MHz	Band II : 5260-5320 MHz	Band III : 5500-5700MHz
		802.11n HT40	802.11n HT40	802.11n HT40
L	Low	38	54	102
M	Middle	-	-	110
H	High	46	62	134

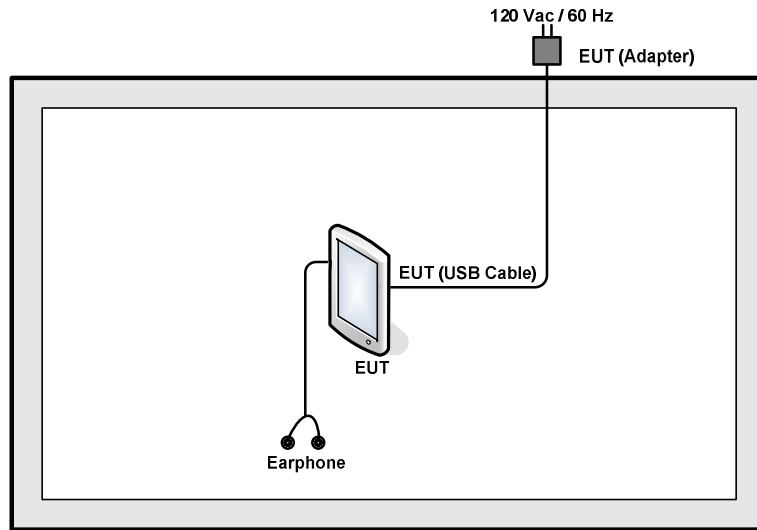
Ch. #		Band I : 5180-5240 MHz	Band II : 5260-5320 MHz	Band III : 5500-5700MHz
		802.11ac VHT20	802.11ac VHT20	802.11ac VHT20
L	Low	36	52	100
M	Middle	44	60	116
H	High	48	64	140

Ch. #		Band I : 5180-5240 MHz	Band II : 5260-5320 MHz	Band III : 5500-5700MHz
		802.11ac VHT40	802.11ac VHT40	802.11ac VHT40
L	Low	38	54	102
M	Middle	-	-	110
H	High	46	62	134

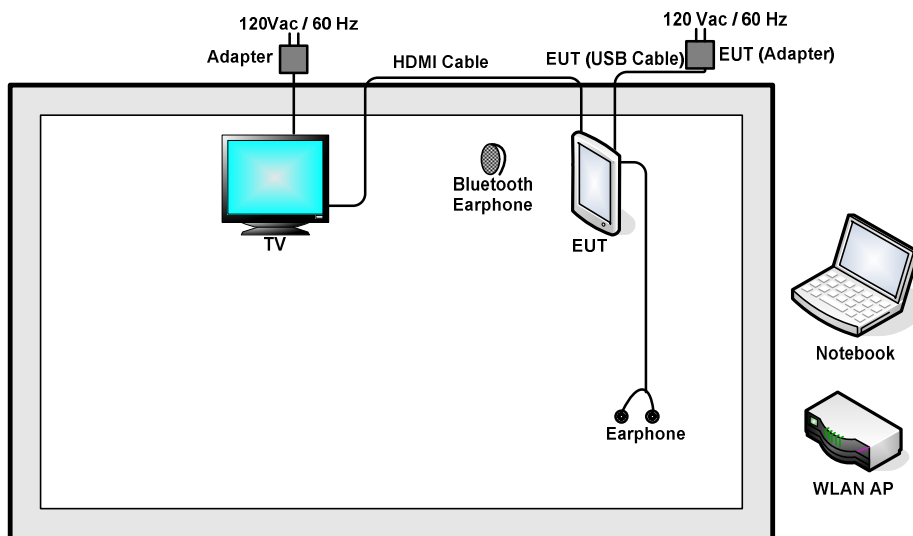
Ch. #		Band I : 5180-5240 MHz	Band II : 5260-5320 MHz	Band III : 5500-5700MHz
		802.11ac VHT80	802.11ac VHT80	802.11ac VHT80
L	Low	-	-	106
M	Middle	42	58	-
H	High	-	-	122

2.4 Connection Diagram of Test System

<WLAN Tx Mode>



<AC Conducted Emission Mode>





2.5 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	Notebook	Lenovo	G480	N/A	N/A	AC I/P: Unshielded, 1.8 m DC O/P: Shielded, 1.8 m
2.	WLAN AP	LINKSYS	WRT600N	Q87-WRT600NV11	N/A	Unshielded, 1.8 m
3.	Bluetooth Earphone	Lenovo	LBH 308	FCC DoC	N/A	N/A
4.	DC Power Supply	GW INSTEK	GPD-2303S	N/A	N/A	Unshielded, 1.8 m
5.	Earphone	Lenovo	LH102	N/A	Unshielded,1.2m	N/A
6.	Earphone	Lenovo	SH100	N/A	Unshielded,1.2m	N/A
7.	TV	Sony	KLV32V300A	FCC DoC	N/A	Unshielded, 1.8 m
8.	HDMI Cable	N/A	N/A	N/A	Shielded,1.5m	N/A

2.6 EUT Operation Test Setup

For WLAN RF test items, an engineering test program was provided and enabled to make EUT continuously transmit/receive.

For AC power line conducted emissions, the EUT was set to connect with the Notebook under large package sizes transmission.



2.7 Measurement Results Explanation Example

For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss between EUT conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly the EUT RF output level.

Example:

The spectrum analyzer offset is derived from RF cable loss.

Offset = RF cable loss.

Following shows an offset computation example with cable loss 7.0 dB.

Offset (dB) = RF cable loss(dB).
= 7.0 (dB)

3 Test Result

3.1 26dB & 99% Occupied Bandwidth Measurement

3.1.1 Description of 26dB & 99% Occupied Bandwidth

This section is for reporting purpose only.

There is no restriction limits for bandwidth.

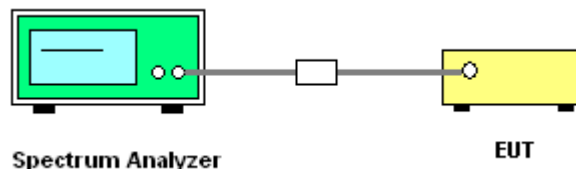
3.1.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.1.3 Test Procedures

1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v01r02. Section C) Emission bandwidth
2. Set RBW = approximately 1% of the emission bandwidth.
3. Set the VBW > RBW.
4. Detector = Peak.
5. Trace mode = max hold
6. Measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.
7. For 99% Bandwidth Measurement, the spectrum analyzer's resolution bandwidth (RBW) is set 1MHz and set the Video bandwidth (VBW) $\geq 3 * RBW$.
8. Measure and record the results in the test report.

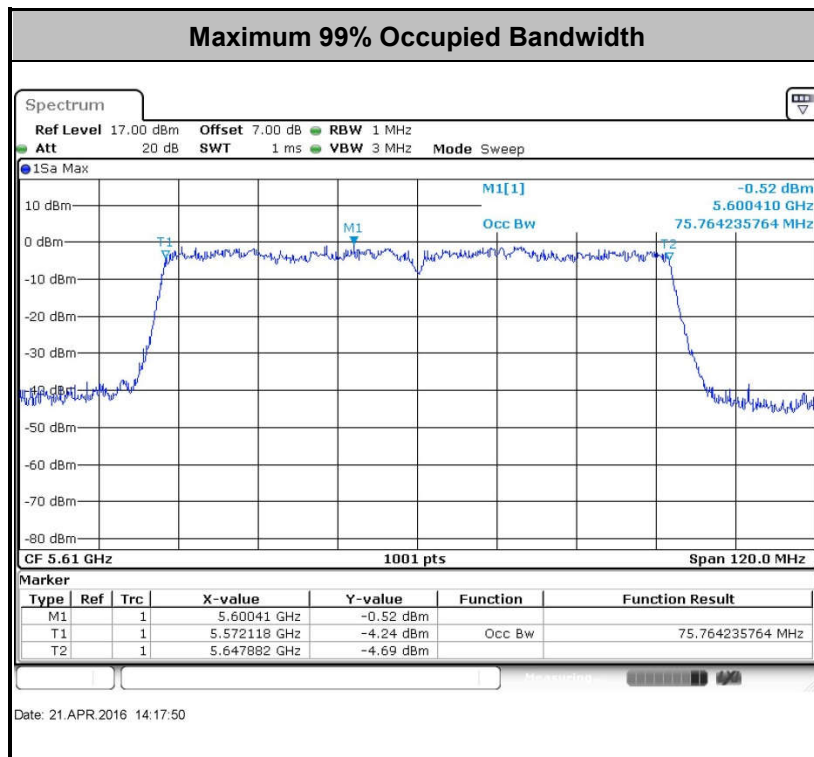
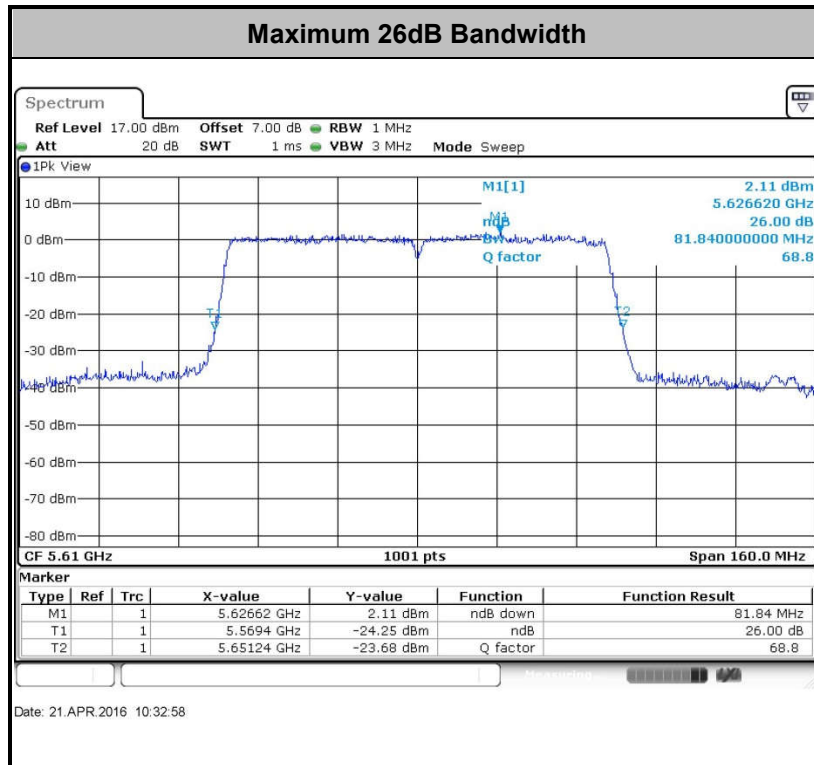
3.1.4 Test Setup





3.1.5 Test Result of 26dB & 99% Occupied Bandwidth

Please refer to Appendix A.



Note : The occupied channel bandwidth is maintained within the band of operation for all of the modulations.



3.2 Maximum Conducted Output Power Measurement

3.2.1 Limit of Maximum Conducted Output Power

<FCC 14-30 CFR 15.407>

For mobile and portable client devices in the 5.15–5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW.

For the 5.25–5.35 GHz and 5.47–5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or $11 \text{ dBm} + 10 \log B$, where B is the 26 dB emission bandwidth in megahertz.

If transmitting antennas of directional gain greater than 6 dBi are used, the peak output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Note that U-NII-2 band, devices with a maximum e.i.r.p. greater than 500 mW shall implement TPC in order to have the capability to operate at least 6 dB below the maximum permitted e.i.r.p. of 1 W.

3.2.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

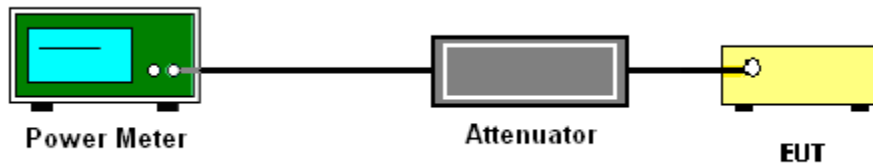
3.2.3 Test Procedures

The testing follows Method PM of FCC KDB 789033 D02 General UNII Test Procedures New Rules v01r02.

Method PM (Measurement using an RF average power meter):

1. Measurement is performed using a wideband RF power meter.
2. The EUT is configured to transmit continuously with a consistent duty cycle at its maximum power control level.
3. Measure the average power of the transmitter, and the average power is corrected with duty factor, $10 \log(1/x)$, where x is the duty cycle.

3.2.4 Test Setup



3.2.5 Test Result of Maximum Conducted Output Power

Please refer to Appendix A.



3.3 Power Spectral Density Measurement

3.3.1 Limit of Power Spectral Density

<FCC 14-30 CFR 15.407>

For mobile and portable client devices in the 5.15–5.25 GHz band, the maximum power spectral density shall not exceed 11dBm in any 1 megahertz band.

For the 5.25–5.35 GHz and 5.47–5.725 GHz bands, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band.

If transmitting antennas of directional gain greater than 6 dBi are used, the peak output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

3.3.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.3.3 Test Procedures

The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v01r02.
Section F) Maximum power spectral density.

Method SA-2

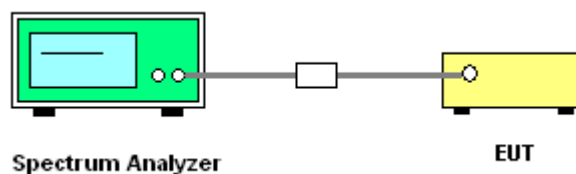
(trace averaging across on and off times of the EUT transmissions, followed by duty cycle correction).

1. The testing follows Method SA-2 of FCC KDB 789033 D02 General UNII Test Procedures New Rules v01r02.
 - Measure the duty cycle.
 - Set span to encompass the entire emission bandwidth (EBW) of the signal.
 - Set RBW = 1 MHz.
 - Set VBW \geq 3 MHz.
 - Number of points in sweep \geq 2 Span / RBW.
 - Sweep time = auto.
 - Detector = RMS
 - Trace average at least 100 traces in power averaging mode.
 - Add $10 \log(1/x)$, where x is the duty cycle, to the measured power in order to compute the average power during the actual transmission times. For example, add $10 \log(1/0.25) = 6$ dB if the duty cycle is 25 percent.
2. The RF output of EUT was connected to the spectrum analyzer by a low loss cable.
3. Each plot has already offset with cable loss, and attenuator loss. Measure the PPSD and record it.
4. For MIMO mode, calculation method follows FCC KDB 662911 D01 Multiple Transmitter Output v02r01.

Method (1): Measure and sum the spectra across the outputs.

The total final Power Spectral Density is from a device with 2 transmitter outputs. The spectrum measurements of the individual outputs are all performed with the same span and number of points, the spectrum value in the first spectral bin of output 1 is summed with that in the first spectral bin of output 2 to obtain the value for the first frequency bin of the summed spectrum.

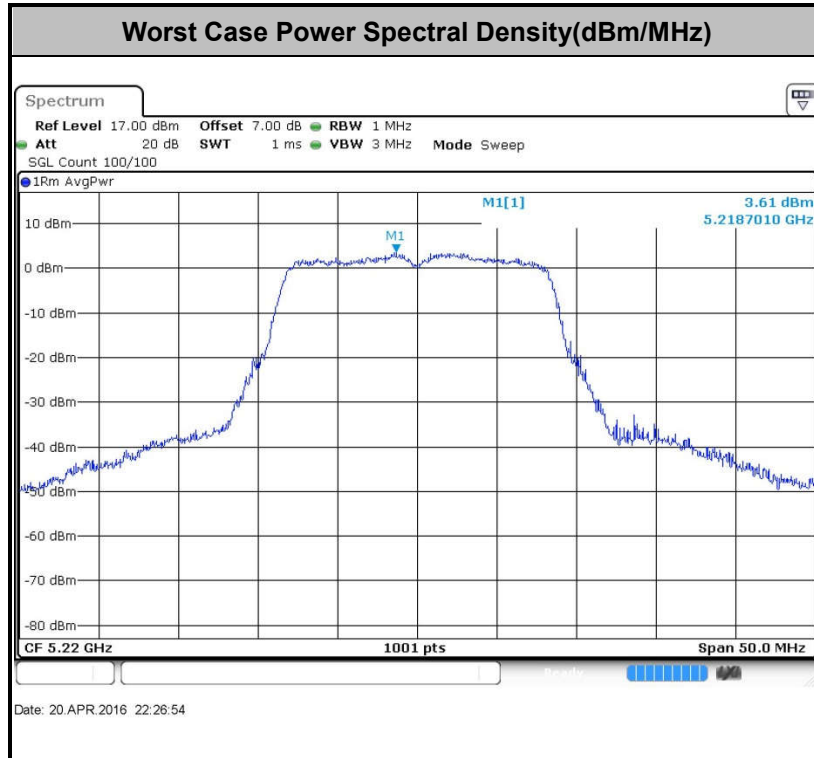
3.3.4 Test Setup





3.3.5 Test Result of Power Spectral Density

Please refer to Appendix A.



Note: Average Power Density (dB) = Measured value+ Duty Factor



3.4 Unwanted Radiated Emission Measurement

This section as specified in FCC Part 15.407(b) is to measure unwanted emissions through radiated measurement for band edge spurious emissions and out of band emissions measurement. The unwanted emissions shall comply with 15.407(b)(1) to (6), and restricted bands per FCC Part15.205.

3.4.1 Limit of Unwanted Emissions

(1) For transmitters operating in the 5150-5250 MHz band: all emissions outside of the 5150-5350 MHz band shall not exceed an EIRP of -27dBm/MHz.

For transmitters operating in the 5250-5350 MHz band: all emissions outside of the 5150-5350 MHz band shall not exceed an EIRP of -27 dBm/MHz. Devices operating in the 5250-5350 MHz band that generate emissions in the 5150-5250 MHz band must meet all applicable technical requirements for operation in the 5150-5250 MHz band (including indoor use) or alternatively meet an out-of-band emission EIRP limit of -27 dBm/MHz in the 5150-5250 MHz band.

For transmitters operating in the 5470-5600 MHz and 5650-5725MHz band: all emissions outside of the 5470-5600 MHz and 5650-5725MHz band shall not exceed an EIRP of -27 dBm/MHz.

(2) Unwanted spurious emissions fallen in restricted bands per FCC Part15.205 shall comply with the general field strength limits set forth in § 15.209 as below table

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 – 0.490	2400/F(kHz)	300
0.490 – 1.705	24000/F(kHz)	30
1.705 – 30.0	30	30
30 – 88	100	3
88 – 216	150	3
216 - 960	200	3
Above 960	500	3

Note: The following formula is used to convert the EIRP to field strength.

$$E = \frac{1000000\sqrt{30P}}{3} \mu\text{V/m, where P is the eirp (Watts)}$$



EIRP (dBm)	Field Strength at 3m (dBµV/m)
-17	78.3
- 27	68.3

(3) KDB789033 D02 v01r02 G)2)c) As specified in 15.407(b), emissions above 1000 MHz that are outside of the restricted bands are subject to a peak emission limit of -27 dBm/MHz (or -17 dBm/MHz as specified in 15.407(b)(4)). However, an out-of-band emission that complies with both the average and peak limits of 15.209 is not required to satisfy the -27 dBm/MHz or -17 dBm/MHz peak emission limit.

3.4.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.4.3 Test Procedures

1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v01r02. Section G) Unwanted emissions measurement.

(1) Procedure for Unwanted Emissions Measurements Below 1000MHz

- RBW = 120 kHz
- VBW = 300 kHz
- Detector = Peak
- Trace mode = max hold

(2) Procedure for Peak Unwanted Emissions Measurements Above 1000 MHz

- RBW = 1 MHz
- VBW ≥ 3 MHz
- Detector = Peak
- Sweep time = auto
- Trace mode = max hold

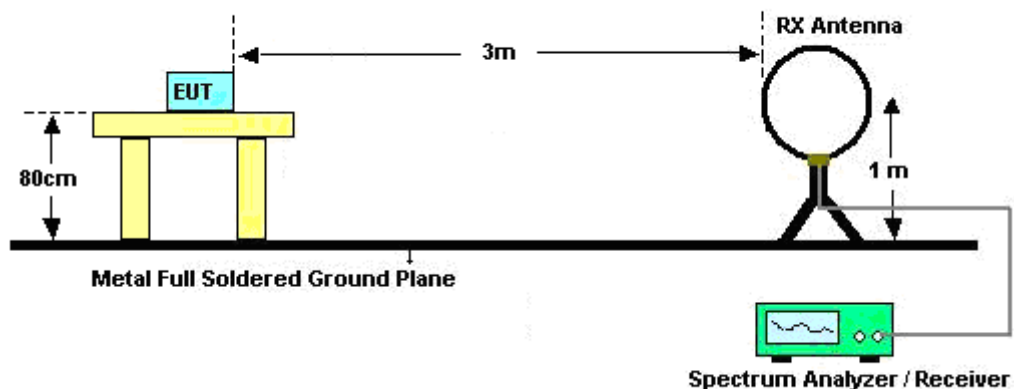
(3) Procedures for Average Unwanted Emissions Measurements Above 1000MHz

- RBW = 1 MHz
- VBW = 10 Hz, when duty cycle is no less than 98 percent.
- VBW ≥ 1/T, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.

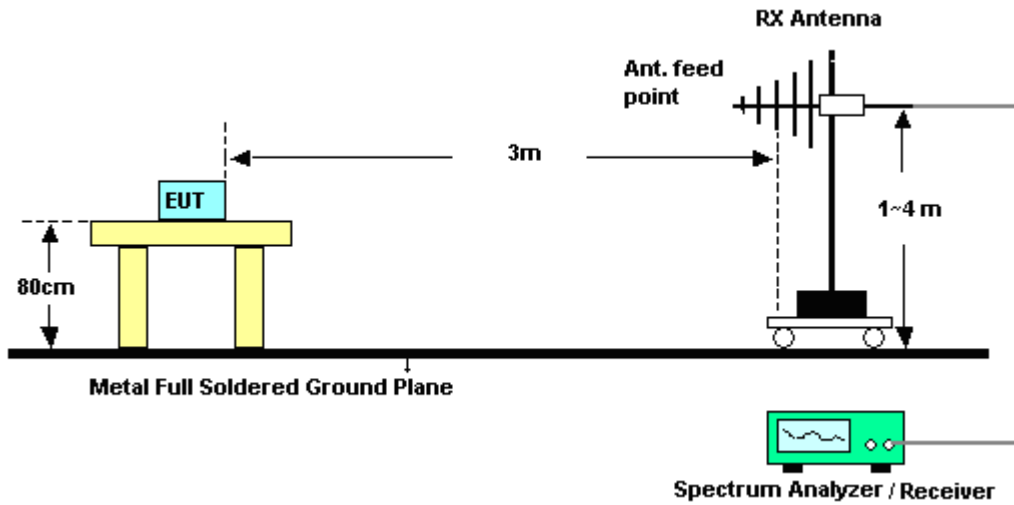
2. The EUT was placed on a turntable with 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz respectively above ground.
3. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
4. The antenna is a broadband antenna and its height is adjusted between one meter and four meters above ground to find the maximum value of the field strength for both horizontal polarization and vertical polarization of the antenna.
5. For each suspected emission, the EUT was arranged to its worst case and then adjust the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading.
6. For testing below 1GHz, if the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then peak values of EUT will be reported, otherwise, the emissions will be repeated one by one using the CISPR quasi-peak method and reported.
7. For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than average limit (that means the emission level in average mode also complies with the limit in average mode), then peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.

3.4.4 Test Setup

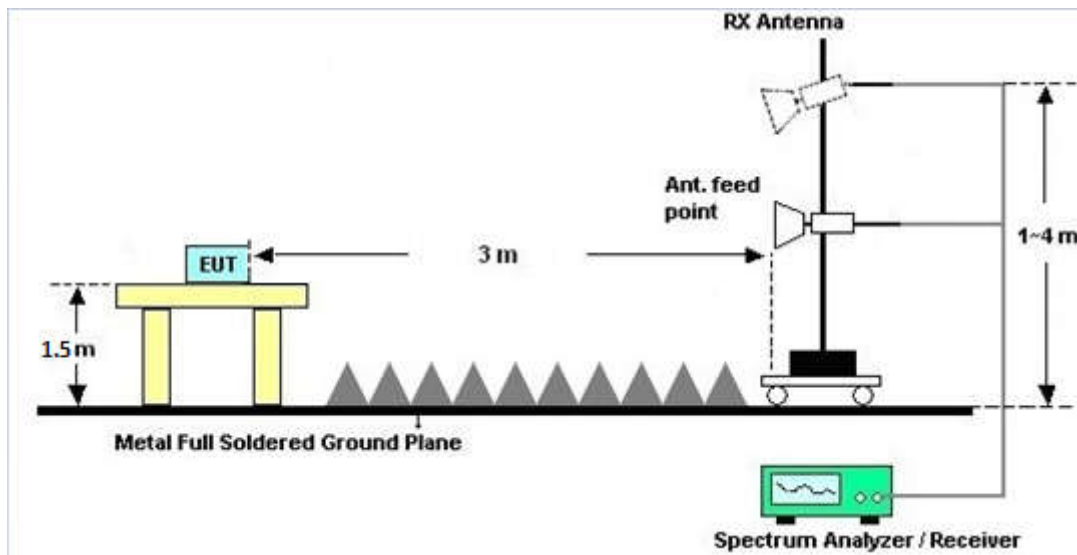
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



3.4.5 Test Results of Radiated Emissions (9 kHz ~ 30 MHz)

The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line per 15.31(o) was not reported.



3.4.6 Test Result of Radiated Band Edges

Please refer to Appendix B.

3.4.7 Duty Cycle

Please refer to Appendix D.

3.4.8 Test Result of Unwanted Radiated Emission (30MHz ~ 10th Harmonic)

Please refer to Appendix B.



3.5 AC Conducted Emission Measurement

3.5.1 Limit of AC Conducted Emission

For equipment 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.

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.

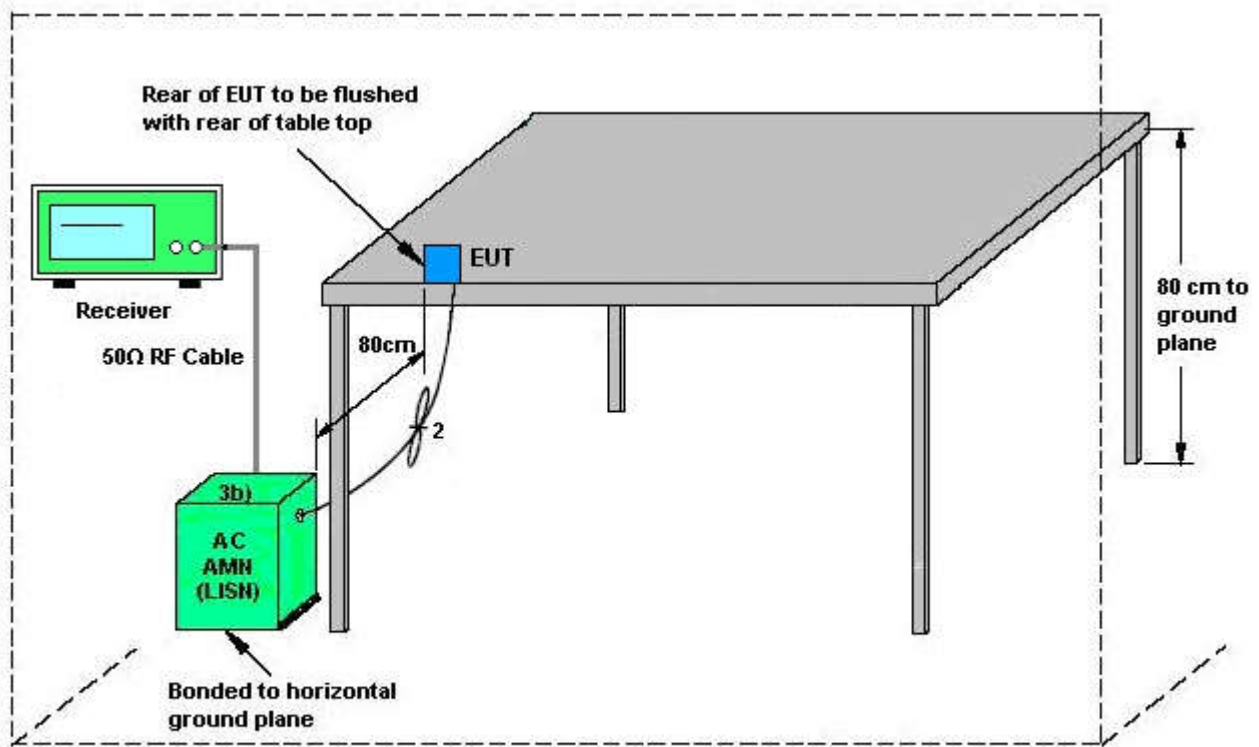
3.5.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.5.3 Test Procedures

1. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
5. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
6. Both sides of AC line were checked for maximum conducted interference.
7. The frequency range from 150 kHz to 30 MHz was searched.
8. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.

3.5.4 Test Setup

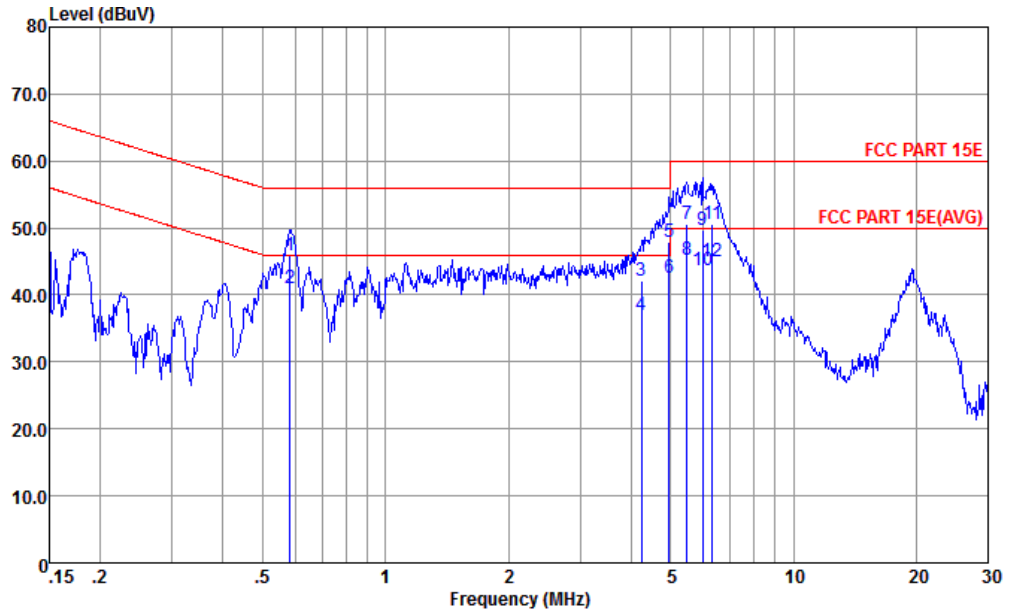


AMN = Artificial mains network (LISN)
AE = Associated equipment
EUT = Equipment under test
ISN = Impedance stabilization network



3.5.5 Test Result of AC Conducted Emission

Test Mode :	Mode 1	Temperature :	22~24°C
Test Engineer :	Amos Zhang	Relative Humidity :	44~46%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	Bluetooth Link + WLAN (5GHz) Link + Earphone + USB Cable (Charging from Adapter 12V) + HDMI Cable for Sample 1		

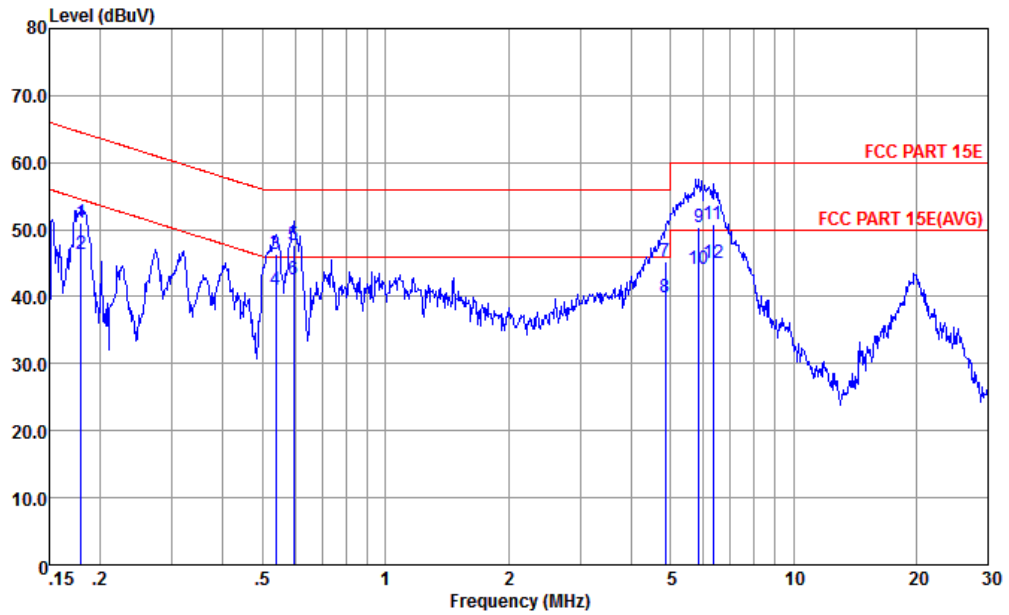


Site : CO01-KS
 Condition : FCC PART 15E LISN-L-20151024 LINE
 mode : Mode 1

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.58	45.99	-10.01	56.00	35.60	0.23	10.16	QP
2	0.58	40.89	-5.11	46.00	30.50	0.23	10.16	Average
3	4.25	42.16	-13.84	56.00	31.80	0.19	10.17	QP
4	4.25	36.96	-9.04	46.00	26.60	0.19	10.17	Average
5	4.95	47.87	-8.13	56.00	37.50	0.19	10.18	QP
6 *	4.95	42.47	-3.53	46.00	32.10	0.19	10.18	Average
7	5.48	50.59	-9.41	60.00	40.20	0.20	10.19	QP
8	5.48	45.19	-4.81	50.00	34.80	0.20	10.19	Average
9	5.99	49.71	-10.29	60.00	39.30	0.21	10.20	QP
10	5.99	43.61	-6.39	50.00	33.20	0.21	10.20	Average
11	6.32	50.62	-9.38	60.00	40.19	0.22	10.21	QP
12	6.32	45.02	-4.98	50.00	34.59	0.22	10.21	Average



Test Mode :	Mode 1	Temperature :	22~24°C
Test Engineer :	Amos Zhang	Relative Humidity :	44~46%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	Bluetooth Link + WLAN (5GHz) Link + Earphone + USB Cable (Charging from Adapter 12V) + HDMI Cable for Sample 1		



Site : CO01-KS
 Condition : FCC PART 15E LISN-N-20151024 NEUTRAL
 mode : Mode 1

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.18	51.03	-13.47	64.50	40.60	0.31	10.12	QP
2	0.18	46.33	-8.17	54.50	35.90	0.31	10.12	Average
3	0.54	46.29	-9.71	56.00	35.81	0.32	10.16	QP
4	0.54	41.09	-4.91	46.00	30.61	0.32	10.16	Average
5	0.59	47.59	-8.41	56.00	37.10	0.33	10.16	QP
6 *	0.59	42.59	-3.41	46.00	32.10	0.33	10.16	Average
7	4.85	45.14	-10.86	56.00	34.60	0.36	10.18	QP
8	4.85	39.84	-6.16	46.00	29.30	0.36	10.18	Average
9	5.87	50.32	-9.68	60.00	39.79	0.33	10.20	QP
10	5.87	44.12	-5.88	50.00	33.59	0.33	10.20	Average
11	6.35	50.82	-9.18	60.00	40.30	0.31	10.21	QP
12	6.35	45.12	-4.88	50.00	34.60	0.31	10.21	Average

3.6 Frequency Stability Measurement

3.6.1 Limit of Frequency Stability

Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

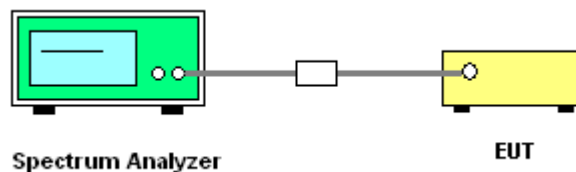
3.6.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.6.3 Test Procedures

1. To ensure emission at the band edge is maintained within the authorized band, those values shall be measured by radiation emissions at upper and lower frequency points, and finally compensated by frequency deviation as procedures below.
2. The EUT was operated at the maximum output power, and connected to the spectrum analyzer, which is set to maximum hold function and peak detector. The peak value of the power envelope was measured and noted. The upper and lower frequency points were respectively measured relatively 10dB lower than the measured peak value.
3. The frequency deviation was calculated by adding the upper frequency point and the lower frequency point divided by two. Those detailed values of frequency deviation are provided in table below.

3.6.4 Test Setup



3.6.5 Test Result of Frequency Stability

Please refer to Appendix A.



3.7 Automatically Discontinue Transmission

3.7.1 Limit of Automatically Discontinue Transmission

The device shall automatically discontinue transmission in case of either absence of information to transmit or operational failure. These provisions are not intended to preclude the transmission of control or signaling information or the use of repetitive codes used by certain digital technologies to complete frame or burst intervals. Applicants shall include in their application for equipment authorization to describe how this requirement is met.

3.7.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.7.3 Test Result of Automatically Discontinue Transmission

While the EUT is not transmitting any information, the EUT can automatically discontinue transmission and become standby mode for power saving. The EUT can detect the controlling signal of ACK message transmitting from remote device and verify whether it shall resend or discontinue transmission.



3.8 Antenna Requirements

3.8.1 Standard Applicable

According to FCC 47 CFR Section 15.407(a)(1)(2) ,if transmitting antenna directional gain is greater than 6 dBi, both the peak transmit power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

3.8.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.

3.8.3 Antenna Gain

FCC KDB 662911 D01 Multiple Transmitter Output v02r01

For CDD transmissions, directional gain is calculated as

Directional gain = $G_{ANT} + \text{Array Gain}$, where Array Gain is as follows.

For power spectral density (PSD) measurements on all devices,

Array Gain = $10 \log(N_{ANT}/N_{SS}=1)$ dB.

For power measurements on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$.

Directional gain may be calculated by using the formulas applicable to equal gain antennas with G_{ANT} set equal to the gain of the antenna having the highest gain;

The EUT supports CDD mode.

The power and PSD limit should be modified if the directional gain of EUT is over 6 dBi,

The directional gain “DG” is calculated as following table.

			DG for Power (dBi)	DG for PSD (dBi)	Power Limit Reduction (dB)	PSD Limit Reduction (dB)
	Ant 1 (dBi)	Ant 2 (dBi)				
Band I	0.63	0.03	0.63	3.35	0.00	0.00
Band II	1.20	0.10	1.20	3.68	0.00	0.00
Band III	0.09	-1.58	0.09	2.31	0.00	0.00

Power limit reduction = Composite gain – 6dBi, (min = 0)

PSD limit reduction = Composite gain + PSD Array gain – 6dBi, (min = 0)



4 List of Measuring Equipments

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSV30	101338	9kHz~30GHz	May 04, 2015	Mar. 29, 2016~ Apr. 21, 2016	May 03, 2016	Conducted (TH01-KS)
Spectrum Analyzer	R&S	FSP40	100319	9kHz~40GHz	Oct. 24, 2015	Mar. 29, 2016~ Apr. 21, 2016	Oct. 23, 2016	Conducted (TH01-KS)
Pulse Power Sensor	Anritsu	MA2411B	0917070	30MHz~40GHz	Jan. 20, 2016	Mar. 29, 2016~ Apr. 21, 2016	Jan. 19, 2017	Conducted (TH01-KS)
Power Meter	Anritsu	ML2495A	1005002	50MHz Bandwidth	Jan. 20, 2016	Mar. 29, 2016~ Apr. 21, 2016	Jan. 19, 2017	Conducted (TH01-KS)
Thermal Chamber	Ten Billion	TTC-B3S	TBN-960502	-40~+150°C	Oct. 24, 2015	Mar. 29, 2016~ Apr. 21, 2016	Oct. 23, 2016	Conducted (TH01-KS)
EMI Test Receiver	R&S	ESR7	101403	9kHz~7GHz; Max 30dBm	Sep. 10, 2015	Mar. 29, 2016~ Apr. 24, 2016	Sep. 09, 2016	Radiation (03CH03-KS)
EXA Spectrum Analyzer	Keysight	N9010A	MY55150244	10Hz-44GHz	Jun. 05, 2015	Mar. 29, 2016~ Apr. 24, 2016	Jun. 04, 2016	Radiation (03CH03-KS)
Loop Antenna	R&S	HFH2-Z2	100321	9kHz~30MHz	Nov. 07, 2015	Mar. 29, 2016~ Apr. 24, 2016	Nov. 06, 2016	Radiation (03CH03-KS)
Bilog Antenna	TeseQ	CBL6112D	23182	25MHz-2GHz	Mar. 12, 2016	Mar. 29, 2016~ Apr. 24, 2016	Mar. 11, 2017	Radiation (03CH03-KS)
Double Ridge Horn Antenna	ETS-Lindgren	3117	75959	1GHz~18GHz	Jan. 16, 2016	Mar. 29, 2016~ Apr. 24, 2016	Jan. 15, 2017	Radiation (03CH03-KS)
SHF-EHF Horn	com-power	AH-840	101070	18Ghz-40Ghz	Oct. 10, 2015	Mar. 29, 2016~ Apr. 24, 2016	Oct. 09, 2016	Radiation (03CH03-KS)
Amplifier	Burgeon	BPA-530	102212	0.01MHz-3000M Hz	Aug. 10, 2015	Mar. 29, 2016~ Apr. 24, 2016	Aug. 09, 2016	Radiation (03CH03-KS)
Amplifier	Agilent	8449B	3008A02370	1GHz~26.5GHz	Oct. 24, 2015	Mar. 29, 2016~ Apr. 24, 2016	Oct. 23, 2016	Radiation (03CH03-KS)
Amplifier	MITEQ	TTA1840-35-HG	1887435	18GHz~40GHz	Aug. 27, 2015	Mar. 29, 2016~ Apr. 24, 2016	Aug. 26, 2016	Radiation (03CH03-KS)
AC Power Source	Chroma	61601	F104090004	N/A	NCR	Mar. 29, 2016~ Apr. 24, 2016	NCR	Radiation (03CH03-KS)
Turn Table	ChamPro	EM 1000-T	060762-T	0~360 degree	NCR	Mar. 29, 2016~ Apr. 24, 2016	NCR	Radiation (03CH03-KS)
Antenna Mast	ChamPro	EM 1000-A	060762-A	1 m~4 m	NCR	Mar. 29, 2016~ Apr. 24, 2016	NCR	Radiation (03CH03-KS)
EMI Receiver	R&S	ESC17	100768	9kHz~7GHz	May 04, 2015	Apr. 26, 2016	May 03, 2016	Conduction (CO01-KS)
AC LISN	MessTec	AN3016	060103	9kHz~30MHz	Oct. 24, 2015	Apr. 26, 2016	Oct. 23, 2016	Conduction (CO01-KS)
AC LISN (for auxiliary equipment)	MessTec	AN3016	060105	9kHz~30MHz	Oct. 24, 2015	Apr. 26, 2016	Oct. 23, 2016	Conduction (CO01-KS)
AC Power Source	Chroma	61602	ABP000000811	AC 0V~300V, 45Hz~1000Hz	Oct. 24, 2015	Apr. 26, 2016	Oct. 23, 2016	Conduction (CO01-KS)

NCR: No Calibration Required



5 Uncertainty of Evaluation

Uncertainty of Conducted Emission Measurement (150kHz ~ 30MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	2.3 dB
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Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	4.5 dB
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Appendix A. Conducted Test Results

Test Engineer:	Issac Song	Temperature:	24~25	°C
Test Date:	2016/3/29~2016/4/21	Relative Humidity:	49~51	%

TEST RESULTS DATA
26dB and 99% OBW

Band I													
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	99% Bandwidth (MHz)		26 dB Bandwidth (MHz)		IC 99% Bandwidth Power Limit (dBm)		IC 99% Bandwidth EIRP Limit (dBm)		Note
					Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2	
11a	48Mbps	1	36	5180	18.23	18.28	22.23	22.28	-	-	22.61	22.62	
11a	48Mbps	1	44	5220	18.28	18.33	22.33	22.38	-	-	22.62	22.63	
11a	48Mbps	1	48	5240	17.43	17.38	19.78	19.93	-	-	22.41	22.40	
HT20	MCS7	1	36	5180	18.98	18.93	22.53	22.83	-	-	22.78	22.77	
HT20	MCS7	1	44	5220	19.08	19.08	22.68	22.68	-	-	22.81	22.81	
HT20	MCS7	1	48	5240	17.88	17.88	20.23	20.18	-	-	22.52	22.52	
HT40	MCS7	1	38	5190	36.56	36.76	40.55	40.55	-	-	23.01	23.01	
HT40	MCS7	1	46	5230	36.56	36.66	40.55	40.64	-	-	23.01	23.01	
VHT20	MCS8	1	36	5180	18.93	18.93	22.73	22.63	-	-	22.77	22.77	
VHT20	MCS8	1	44	5220	18.93	18.98	22.63	22.48	-	-	22.77	22.78	
VHT20	MCS8	1	48	5240	17.93	17.88	20.28	20.18	-	-	22.54	22.52	
VHT40	MCS9	1	38	5190	36.86	36.96	41.09	40.91	-	-	23.01	23.01	
VHT40	MCS9	1	46	5230	36.86	37.16	40.82	41.00	-	-	23.01	23.01	
VHT80	MCS9	1	42	5210	75.76	75.64	81.36	81.04	-	-	23.01	23.01	
HT20	MCS15	2	36	5180	18.88	18.88	22.33	22.78	-	-	22.76		
HT20	MCS15	2	44	5220	19.13	19.08	22.63	22.73	-	-	22.81		
HT20	MCS15	2	48	5240	17.83	17.88	20.08	20.23	-	-	22.51		
HT40	MCS15	2	38	5190	36.66	36.76	40.73	40.73	-	-	23.01		
HT40	MCS15	2	46	5230	36.66	36.76	40.37	40.64	-	-	23.01		
VHT20	MCS8	2	36	5180	18.88	18.93	22.58	22.68	-	-	22.76		
VHT20	MCS8	2	44	5220	18.93	18.98	22.58	22.48	-	-	22.77		
VHT20	MCS8	2	48	5240	17.88	17.88	20.18	20.28	-	-	22.52		
VHT40	MCS9	2	38	5190	36.66	36.56	40.64	40.73	-	-	23.01		
VHT40	MCS9	2	46	5230	36.56	36.66	40.55	40.64	-	-	23.01		
VHT80	MCS9	2	42	5210	75.64	75.76	81.20	81.52	-	-	23.01		

TEST RESULTS DATA
Average Power Table

FCC Band I														
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Duty Factor (dB)		Average Conducted Power (dBm)			FCC Conducted Power Limit (dBm)		DG (dBi)		Pass/Fail
					Ant 1	Ant 2	Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2	
11a	48Mbps	1	36	5180	1.79	1.79	14.93	15.05		21.00	21.00	0.63	0.03	Pass
11a	48Mbps	1	44	5220	1.79	1.79	15.01	15.45		21.00	21.00	0.63	0.03	Pass
11a	48Mbps	1	48	5240	1.79	1.79	15.06	15.47		21.00	21.00	0.63	0.03	Pass
HT20	MCS7	1	36	5180	2.06	2.03	11.60	10.63		21.00	21.00	0.63	0.03	Pass
HT20	MCS7	1	44	5220	2.06	2.03	11.98	11.40		21.00	21.00	0.63	0.03	Pass
HT20	MCS7	1	48	5240	2.06	2.03	12.19	11.80		21.00	21.00	0.63	0.03	Pass
HT40	MCS7	1	38	5190	2.44	2.48	11.99	10.34		21.00	21.00	0.63	0.03	Pass
HT40	MCS7	1	46	5230	2.44	2.48	11.86	10.73		21.00	21.00	0.63	0.03	Pass
VHT20	MCS8	1	36	5180	2.23	2.23	10.74	11.06		21.00	21.00	0.63	0.03	Pass
VHT20	MCS8	1	44	5220	2.23	2.23	11.28	11.48		21.00	21.00	0.63	0.03	Pass
VHT20	MCS8	1	48	5240	2.23	2.23	11.38	11.68		21.00	21.00	0.63	0.03	Pass
VHT40	MCS9	1	38	5190	3.10	3.24	10.74	10.35		21.00	21.00	0.63	0.03	Pass
VHT40	MCS9	1	46	5230	3.10	3.24	11.03	10.73		21.00	21.00	0.63	0.03	Pass
VHT80	MCS9	1	42	5210	4.09	4.23	11.03	11.41		21.00	21.00	0.63	0.03	Pass
HT20	MCS15	2	36	5180	2.85	2.89	9.40	9.05	12.23	21.00		0.63		Pass
HT20	MCS15	2	44	5220	2.85	2.89	9.52	9.00	12.27	21.00		0.63		Pass
HT20	MCS15	2	48	5240	2.85	2.89	9.59	9.06	12.34	21.00		0.63		Pass
HT40	MCS15	2	38	5190	3.40	3.30	9.53	9.25	12.40	21.00		0.63		Pass
HT40	MCS15	2	46	5230	3.40	3.30	9.87	9.58	12.73	21.00		0.63		Pass
VHT20	MCS8	2	36	5180	3.05	3.01	11.78	11.10	14.47	21.00		0.63		Pass
VHT20	MCS8	2	44	5220	3.05	3.01	11.74	11.05	14.42	21.00		0.63		Pass
VHT20	MCS8	2	48	5240	3.05	3.01	11.87	11.23	14.57	21.00		0.63		Pass
VHT40	MCS9	2	38	5190	3.93	3.93	8.07	7.90	10.99	21.00		0.63		Pass
VHT40	MCS9	2	46	5230	3.93	3.93	8.58	8.30	11.45	21.00		0.63		Pass
VHT80	MCS9	2	42	5210	4.45	4.61	9.58	9.00	12.31	21.00		0.63		Pass

TEST RESULTS DATA
Power Spectral Density

FCC Band I														
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Duty Factor (dB)		Average Power Density (dBm/MHz)			Average PSD Limit (dBm/MHz)		DG (dBi)		Pass /Fail
					Ant 1	Ant 2	Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2	
11a	48Mbps	1	36	5180	1.79	1.79	-	4.80		11.00	11.00	0.63	0.03	Pass
11a	48Mbps	1	44	5220	1.79	1.79	-	5.40		11.00	11.00	0.63	0.03	Pass
11a	48Mbps	1	48	5240	1.79	1.79	-	5.34		11.00	11.00	0.63	0.03	Pass
HT20	MCS7	1	36	5180	2.06	2.03	2.28	-		11.00	11.00	0.63	0.03	Pass
HT20	MCS7	1	44	5220	2.06	2.03	1.92	-		11.00	11.00	0.63	0.03	Pass
HT20	MCS7	1	48	5240	2.06	2.03	2.10	-		11.00	11.00	0.63	0.03	Pass
HT40	MCS7	1	38	5190	2.44	2.48	-1.70	-		11.00	11.00	0.63	0.03	Pass
HT40	MCS7	1	46	5230	2.44	2.48	-2.12	-		11.00	11.00	0.63	0.03	Pass
VHT20	MCS8	1	36	5180	2.23	2.23	-	0.75		11.00	11.00	0.63	0.03	Pass
VHT20	MCS8	1	44	5220	2.23	2.23	-	0.51		11.00	11.00	0.63	0.03	Pass
VHT20	MCS8	1	48	5240	2.23	2.23	-	0.50		11.00	11.00	0.63	0.03	Pass
VHT40	MCS9	1	38	5190	3.10	3.24	-2.49	-		11.00	11.00	0.63	0.03	Pass
VHT40	MCS9	1	46	5230	3.10	3.24	-2.09	-		11.00	11.00	0.63	0.03	Pass
VHT80	MCS9	1	42	5210	4.09	4.23	-	-3.90		11.00	11.00	0.63	0.03	Pass
HT20	MCS15	2	36	5180	2.85	2.89			1.21	11.00		3.35		Pass
HT20	MCS15	2	44	5220	2.85	2.89			1.04	11.00		3.35		Pass
HT20	MCS15	2	48	5240	2.85	2.89			1.18	11.00		3.35		Pass
HT40	MCS15	2	38	5190	3.40	3.30			-1.22	11.00		3.35		Pass
HT40	MCS15	2	46	5230	3.40	3.30			-0.94	11.00		3.35		Pass
VHT20	MCS8	2	36	5180	3.05	3.01			3.91	11.00		3.35		Pass
VHT20	MCS8	2	44	5220	3.05	3.01			3.82	11.00		3.35		Pass
VHT20	MCS8	2	48	5240	3.05	3.01			3.75	11.00		3.35		Pass
VHT40	MCS9	2	38	5190	3.93	3.93			-2.67	11.00		3.35		Pass
VHT40	MCS9	2	46	5230	3.93	3.93			-2.70	11.00		3.35		Pass
VHT80	MCS9	2	42	5210	4.61	4.45			-4.16	11.00		3.35		Pass

TEST RESULTS DATA
26dB and 99% OBW

Band II															
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	99% Bandwidth (MHz)		26 dB Bandwidth (MHz)		IC 99% Bandwidth Power Limit (dBm)		IC 99% Bandwidth EIRP Limit (dBm)		FCC 26dB Bandwidth Power Limit (dBm)		Note
					Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2	
11a	48Mbps	1	52	5260	17.38	17.43	19.83	19.88	23.40	23.41	29.40	29.41	23.97	23.98	
11a	48Mbps	1	60	5300	18.23	18.28	22.43	22.33	23.61	23.62	29.61	29.62	23.98	23.98	
11a	48Mbps	1	64	5320	18.23	18.28	22.43	22.38	23.61	23.62	29.61	29.62	23.98	23.98	
HT20	MCS7	1	52	5260	17.83	17.83	20.13	20.28	23.51	23.51	29.51	29.51	23.98	23.98	
HT20	MCS7	1	60	5300	19.03	18.88	22.83	22.63	23.79	23.76	29.79	29.76	23.98	23.98	
HT20	MCS7	1	64	5320	18.98	18.93	22.73	22.63	23.78	23.77	29.78	29.77	23.98	23.98	
HT40	MCS7	1	54	5270	36.56	36.76	40.64	40.64	23.98	23.98	30.00	30.00	23.98	23.98	
HT40	MCS7	1	62	5310	36.56	36.66	40.55	40.91	23.98	23.98	30.00	30.00	23.98	23.98	
VHT20	MCS8	1	52	5260	17.88	17.88	20.18	20.23	23.52	23.52	29.52	29.52	23.98	23.98	
VHT20	MCS8	1	60	5300	18.93	18.83	22.68	22.63	23.77	23.75	29.77	29.75	23.98	23.98	
VHT20	MCS8	1	64	5320	18.93	18.98	22.73	22.63	23.77	23.78	29.77	29.78	23.98	23.98	
VHT40	MCS9	1	54	5270	36.66	37.06	40.73	40.73	23.98	23.98	30.00	30.00	23.98	23.98	
VHT40	MCS9	1	62	5310	36.86	36.96	40.82	41.00	23.98	23.98	30.00	30.00	23.98	23.98	
VHT80	MCS9	1	58	5290	75.64	75.76	81.20	81.36	23.98	23.98	30.00	30.00	23.98	23.98	
HT20	MCS15	2	52	5260	17.88	17.88	20.13	20.33	23.52		29.52		23.98		
HT20	MCS15	2	60	5300	18.93	19.03	22.58	22.73	23.77		29.77		23.98		
HT20	MCS15	2	64	5320	18.93	19.13	22.38	22.83	23.77		29.77		23.98		
HT40	MCS15	2	54	5270	36.76	36.66	40.73	40.46	23.98		30.00		23.98		
HT40	MCS15	2	62	5310	36.66	36.76	40.82	40.55	23.98		30.00		23.98		
VHT20	MCS8	2	52	5260	17.83	17.88	20.23	20.18	23.51		29.51		23.98		
VHT20	MCS8	2	60	5300	18.93	18.88	22.53	22.78	23.76		29.76		23.98		
VHT20	MCS8	2	64	5320	19.08	18.88	22.68	22.53	23.76		29.76		23.98		
VHT40	MCS9	2	54	5270	36.56	36.66	40.73	40.55	23.98		30.00		23.98		
VHT40	MCS9	2	62	5310	36.56	36.56	40.64	40.46	23.98		30.00		23.98		
VHT80	MCS9	2	58	5290	75.76	75.64	81.20	81.04	23.98		30.00		23.98		

TEST RESULTS DATA
Average Power Table

FCC Band II														
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Duty Factor (dB)		Average Conducted Power (dBm)			FCC Conducted Power Limit (dBm)		DG (dBi)		Pass/Fail
					Ant 1	Ant 2	Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2	
11a	48Mbps	1	52	5260	1.79	1.79	15.05	15.34		23.97	23.98	1.20	0.10	Pass
11a	48Mbps	1	60	5300	1.79	1.79	14.77	15.38		23.98	23.98	1.20	0.10	Pass
11a	48Mbps	1	64	5320	1.79	1.79	14.84	15.40		23.98	23.98	1.20	0.10	Pass
HT20	MCS7	1	52	5260	2.06	2.03	11.62	11.06		23.98	23.98	1.20	0.10	Pass
HT20	MCS7	1	60	5300	2.06	2.03	11.82	11.20		23.98	23.98	1.20	0.10	Pass
HT20	MCS7	1	64	5320	2.06	2.03	11.89	11.35		23.98	23.98	1.20	0.10	Pass
HT40	MCS7	1	54	5270	2.44	2.48	11.29	11.16		23.98	23.98	1.20	0.10	Pass
HT40	MCS7	1	62	5310	2.44	2.48	11.42	11.33		23.98	23.98	1.20	0.10	Pass
VHT20	MCS8	1	52	5260	2.23	2.23	11.57	10.88		23.98	23.98	1.20	0.10	Pass
VHT20	MCS8	1	60	5300	2.23	2.23	11.44	11.14		23.98	23.98	1.20	0.10	Pass
VHT20	MCS8	1	64	5320	2.23	2.23	11.68	11.19		23.98	23.98	1.20	0.10	Pass
VHT40	MCS9	1	54	5270	3.10	3.24	11.58	11.23		23.98	23.98	1.20	0.10	Pass
VHT40	MCS9	1	62	5310	3.10	3.24	11.68	11.29		23.98	23.98	1.20	0.10	Pass
VHT80	MCS9	1	58	5290	4.09	4.23	11.55	11.24		23.98	23.98	1.20	0.10	Pass
HT20	MCS15	2	52	5260	2.85	2.89	9.12	8.74	11.94	23.98		1.20		Pass
HT20	MCS15	2	60	5300	2.85	2.89	9.36	9.03	12.20	23.98		1.20		Pass
HT20	MCS15	2	64	5320	2.85	2.89	9.37	9.06	12.22	23.98		1.20		Pass
HT40	MCS15	2	54	5270	3.40	3.30	10.63	10.21	13.43	23.98		1.20		Pass
HT40	MCS15	2	62	5310	3.40	3.30	10.88	10.31	13.61	23.98		1.20		Pass
VHT20	MCS8	2	52	5260	3.05	3.01	11.25	10.69	13.99	23.98		1.20		Pass
VHT20	MCS8	2	60	5300	3.05	3.01	11.44	10.68	14.09	23.98		1.20		Pass
VHT20	MCS8	2	64	5320	3.05	3.01	11.59	10.86	14.25	23.98		1.20		Pass
VHT40	MCS9	2	54	5270	3.93	3.93	9.49	8.92	12.22	23.98		1.20		Pass
VHT40	MCS9	2	62	5310	3.93	3.93	9.60	9.30	12.46	23.98		1.20		Pass
VHT80	MCS9	2	58	5290	4.45	4.61	10.59	10.09	13.36	23.98		1.20		Pass

TEST RESULTS DATA
Power Spectral Density

Band II														
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Duty Factor (dB)		Average Power Density (dBm/MHz)			Average PSD Limit (dBm/MHz)		DG (dBi)		Pass /Fail
					Ant 1	Ant 2	Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2	
11a	48Mbps	1	52	5260	1.79	1.79	-	4.82		11.00	11.00	1.20	0.10	Pass
11a	48Mbps	1	60	5300	1.79	1.79	-	4.70		11.00	11.00	1.20	0.10	Pass
11a	48Mbps	1	64	5320	1.79	1.79	-	4.42		11.00	11.00	1.20	0.10	Pass
HT20	MCS7	1	52	5260	2.06	2.03	1.09	-		11.00	11.00	1.20	0.10	Pass
HT20	MCS7	1	60	5300	2.06	2.03	1.31	-		11.00	11.00	1.20	0.10	Pass
HT20	MCS7	1	64	5320	2.06	2.03	0.80	-		11.00	11.00	1.20	0.10	Pass
HT40	MCS7	1	54	5270	2.44	2.48	-1.69	-		11.00	11.00	1.20	0.10	Pass
HT40	MCS7	1	62	5310	2.44	2.48	-1.96	-		11.00	11.00	1.20	0.10	Pass
VHT20	MCS8	1	52	5260	2.23	2.23	1.33	-		11.00	11.00	1.20	0.10	Pass
VHT20	MCS8	1	60	5300	2.23	2.23	0.78	-		11.00	11.00	1.20	0.10	Pass
VHT20	MCS8	1	64	5320	2.23	2.23	0.70	-		11.00	11.00	1.20	0.10	Pass
VHT40	MCS9	1	54	5270	3.10	3.24	-1.64	-		11.00	11.00	1.20	0.10	Pass
VHT40	MCS9	1	62	5310	3.10	3.24	-1.97	-		11.00	11.00	1.20	0.10	Pass
VHT80	MCS9	1	58	5290	4.09	4.23	-5.76	-		11.00	11.00	1.20	0.10	Pass
HT20	MCS15	2	52	5260	2.85	2.89			1.11	11.00		3.68		Pass
HT20	MCS15	2	60	5300	2.85	2.89			1.44	11.00		3.68		Pass
HT20	MCS15	2	64	5320	2.85	2.89			1.12	11.00		3.68		Pass
HT40	MCS15	2	54	5270	3.40	3.30			0.26	11.00		3.68		Pass
HT40	MCS15	2	62	5310	3.40	3.30			-0.06	11.00		3.68		Pass
VHT20	MCS8	2	52	5260	3.05	3.01			3.44	11.00		3.68		Pass
VHT20	MCS8	2	60	5300	3.05	3.01			3.67	11.00		3.68		Pass
VHT20	MCS8	2	64	5320	3.05	3.01			3.61	11.00		3.68		Pass
VHT40	MCS9	2	54	5270	3.93	3.93			-1.67	11.00		3.68		Pass
VHT40	MCS9	2	62	5310	3.93	3.93			-1.67	11.00		3.68		Pass
VHT80	MCS9	2	58	5290	4.61	4.45			-3.08	11.00		3.68		Pass

TEST RESULTS DATA
26dB and 99% OBW

Band III															
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	99% Bandwidth (MHz)		26 dB Bandwidth (MHz)		IC 99% Bandwidth Power Limit (dBm)		IC 99% Bandwidth EIRP Limit (dBm)		FCC 26dB Bandwidth Power Limit (dBm)		Note
					Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2	
11a	48Mbps	1	100	5500	18.28	18.33	22.38	22.58	23.62	23.63	29.62	29.63	23.98	23.98	
11a	48Mbps	1	116	5580	17.33	17.43	19.88	19.88	23.39	23.41	29.39	29.41	23.98	23.98	
11a	48Mbps	1	140	5700	18.23	18.33	22.38	22.43	23.61	23.63	29.61	29.63	23.98	23.98	
HT20	MCS7	1	100	5500	19.13	19.18	22.73	22.78	23.82	23.83	29.82	29.83	23.98	23.98	
HT20	MCS7	1	116	5580	17.88	17.98	20.33	20.23	23.52	23.55	29.52	29.55	23.98	23.98	
HT20	MCS7	1	140	5700	19.03	19.13	22.68	22.73	23.79	23.82	29.79	29.82	23.98	23.98	
HT40	MCS7	1	102	5510	36.66	36.56	40.82	40.64	23.98	23.98	30.00	30.00	23.98	23.98	
HT40	MCS7	1	110	5550	36.66	36.76	40.73	40.82	23.98	23.98	30.00	30.00	23.98	23.98	
HT40	MCS7	1	134	5670	36.66	36.76	40.64	40.55	23.98	23.98	30.00	30.00	23.98	23.98	
VHT20	MCS8	1	100	5500	18.98	18.98	22.73	22.73	23.78	23.78	29.78	29.78	23.98	23.98	
VHT20	MCS8	1	116	5580	17.93	17.98	20.18	20.18	23.54	23.55	29.54	29.55	23.98	23.98	
VHT20	MCS8	1	140	5700	18.98	19.03	22.73	22.63	23.78	23.79	29.78	29.79	23.98	23.98	
VHT40	MCS9	1	102	5510	36.96	36.96	41.09	41.09	23.98	23.98	30.00	30.00	23.98	23.98	
VHT40	MCS9	1	110	5550	36.86	36.96	41.00	41.00	23.98	23.98	30.00	30.00	23.98	23.98	
VHT40	MCS9	1	134	5670	36.86	37.16	40.91	41.09	23.98	23.98	30.00	30.00	23.98	23.98	
VHT80	MCS9	1	106	5530	75.76	75.76	81.36	81.36	23.98	23.98	30.00	30.00	23.98	23.98	
VHT80	MCS9	1	122	5610	75.76	75.64	81.84	81.68	23.98	23.98	30.00	30.00	23.98	23.98	
HT20	MCS15	2	100	5500	18.88	19.03	22.38	22.78	23.76		29.76		23.98		
HT20	MCS15	2	116	5580	17.88	17.98	20.08	20.23	23.52		29.52		23.98		
HT20	MCS15	2	140	5700	19.03	19.18	22.63	22.68	23.79		29.79		23.98		
HT40	MCS15	2	102	5510	36.76	36.76	40.73	40.82	23.98		30.00		23.98		
HT40	MCS15	2	110	5550	36.76	36.66	40.64	40.82	23.98		30.00		23.98		
HT40	MCS15	2	134	5670	36.66	36.66	40.73	40.82	23.98		30.00		23.98		
VHT20	MCS8	2	100	5500	18.83	19.13	22.73	22.78	23.75		29.75		23.98		
VHT20	MCS8	2	116	5580	17.98	18.03	20.33	20.43	23.55		29.55		23.98		
VHT20	MCS8	2	140	5700	18.98	19.23	22.53	22.68	23.78		29.78		23.98		
VHT40	MCS9	2	102	5510	36.56	36.56	40.64	40.64	23.98		30.00		23.98		
VHT40	MCS9	2	110	5550	36.66	36.56	40.82	40.73	23.98		30.00		23.98		
VHT40	MCS9	2	134	5670	36.56	36.66	40.64	40.64	23.98		30.00		23.98		
VHT80	MCS9	2	106	5530	75.76	75.64	81.52	80.88	23.98		30.00		23.98		
VHT80	MCS9	2	122	5610	75.76	75.64	81.68	81.04	23.98		30.00		23.98		

TEST RESULTS DATA
Average Power Table

FCC Band III														
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Duty Factor (dB)		Average Conducted Power (dBm)			FCC Conducted Power Limit (dBm)		DG (dBi)		Pass/Fail
					Ant 1	Ant 2	Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2	
11a	48Mbps	1	100	5500	1.79	1.79	15.17	15.94		23.98	23.98	0.09	-1.58	Pass
11a	48Mbps	1	116	5580	1.79	1.79	14.21	15.39		23.98	23.98	0.09	-1.58	Pass
11a	48Mbps	1	140	5700	1.79	1.79	15.25	15.59		23.98	23.98	0.09	-1.58	Pass
HT20	MCS7	1	100	5500	2.06	2.03	12.77	12.70		23.98	23.98	0.09	-1.58	Pass
HT20	MCS7	1	116	5580	2.06	2.03	12.27	12.68		23.98	23.98	0.09	-1.58	Pass
HT20	MCS7	1	140	5700	2.06	2.03	12.73	12.66		23.98	23.98	0.09	-1.58	Pass
HT40	MCS7	1	102	5510	2.44	2.48	11.08	11.10		23.98	23.98	0.09	-1.58	Pass
HT40	MCS7	1	110	5550	2.44	2.48	10.92	11.01		23.98	23.98	0.09	-1.58	Pass
HT40	MCS7	1	134	5670	2.44	2.48	10.59	10.59		23.98	23.98	0.09	-1.58	Pass
VHT20	MCS8	1	100	5500	2.23	2.23	10.99	10.98		23.98	23.98	0.09	-1.58	Pass
VHT20	MCS8	1	116	5580	2.23	2.23	9.64	10.82		23.98	23.98	0.09	-1.58	Pass
VHT20	MCS8	1	140	5700	2.23	2.23	10.88	10.48		23.98	23.98	0.09	-1.58	Pass
VHT40	MCS9	1	102	5510	3.10	3.24	11.09	11.08		23.98	23.98	0.09	-1.58	Pass
VHT40	MCS9	1	110	5550	3.10	3.24	10.92	10.92		23.98	23.98	0.09	-1.58	Pass
VHT40	MCS9	1	134	5670	3.10	3.24	10.84	10.47		23.98	23.98	0.09	-1.58	Pass
VHT80	MCS9	1	106	5530	4.09	4.23	10.74	10.85		23.98	23.98	0.09	-1.58	Pass
VHT80	MCS9	1	122	5610	4.09	4.23	10.88	11.06		23.98	23.98	0.09	-1.58	Pass
HT20	MCS15	2	100	5500	2.85	2.89	9.80	9.81	12.81	23.98		0.09		Pass
HT20	MCS15	2	116	5580	2.85	2.89	9.65	9.73	12.70	23.98		0.09		Pass
HT20	MCS15	2	140	5700	2.85	2.89	9.66	9.51	12.59	23.98		0.09		Pass
HT40	MCS15	2	102	5510	3.40	3.30	10.81	10.73	13.78	23.98		0.09		Pass
HT40	MCS15	2	110	5550	3.40	3.30	10.93	10.91	13.93	23.98		0.09		Pass
HT40	MCS15	2	134	5670	3.40	3.30	10.72	10.56	13.65	23.98		0.09		Pass
VHT20	MCS8	2	100	5500	3.05	3.01	11.01	10.89	13.96	23.98		0.09		Pass
VHT20	MCS8	2	116	5580	3.05	3.01	10.87	10.79	13.84	23.98		0.09		Pass
VHT20	MCS8	2	140	5700	3.05	3.01	10.81	10.43	13.64	23.98		0.09		Pass
VHT40	MCS9	2	102	5510	3.93	3.93	9.93	10.01	12.98	23.98		0.09		Pass
VHT40	MCS9	2	110	5550	3.93	3.93	9.79	9.74	12.77	23.98		0.09		Pass
VHT40	MCS9	2	134	5670	3.93	3.93	9.49	9.47	12.49	23.98		0.09		Pass
VHT80	MCS9	2	106	5530	4.45	4.61	8.46	8.57	11.52	23.98		0.09		Pass
VHT80	MCS9	2	122	5610	4.45	4.61	8.38	8.39	11.39	23.98		0.09		Pass

TEST RESULTS DATA
Power Spectral Density

Band III														
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Duty Factor (dB)		Average Power Density (dBm/MHz)			Average PSD Limit (dBm/MHz)		DG (dBi)		Pass /Fail
					Ant 1	Ant 2	Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2	
11a	48Mbps	1	100	5500	1.79	1.79	-	4.87		11.00	11.00	0.09	-1.58	Pass
11a	48Mbps	1	116	5580	1.79	1.79	-	4.21		11.00	11.00	0.09	-1.58	Pass
11a	48Mbps	1	140	5700	1.79	1.79	-	5.35		11.00	11.00	0.09	-1.58	Pass
HT20	MCS7	1	100	5500	2.06	2.03	2.13	-		11.00	11.00	0.09	-1.58	Pass
HT20	MCS7	1	116	5580	2.06	2.03	1.40	-		11.00	11.00	0.09	-1.58	Pass
HT20	MCS7	1	140	5700	2.06	2.03	2.03	-		11.00	11.00	0.09	-1.58	Pass
HT40	MCS7	1	102	5510	2.44	2.48	-	-3.42		11.00	11.00	0.09	-1.58	Pass
HT40	MCS7	1	110	5550	2.44	2.48	-	-2.98		11.00	11.00	0.09	-1.58	Pass
HT40	MCS7	1	134	5670	2.44	2.48	-	-3.56		11.00	11.00	0.09	-1.58	Pass
VHT20	MCS8	1	100	5500	2.23	2.23	-0.08	-		11.00	11.00	0.09	-1.58	Pass
VHT20	MCS8	1	116	5580	2.23	2.23	-1.64	-		11.00	11.00	0.09	-1.58	Pass
VHT20	MCS8	1	140	5700	2.23	2.23	-0.13	-		11.00	11.00	0.09	-1.58	Pass
VHT40	MCS9	1	102	5510	3.10	3.24	-2.88	-		11.00	11.00	0.09	-1.58	Pass
VHT40	MCS9	1	110	5550	3.10	3.24	-2.90	-		11.00	11.00	0.09	-1.58	Pass
VHT40	MCS9	1	134	5670	3.10	3.24	-2.70	-		11.00	11.00	0.09	-1.58	Pass
VHT80	MCS9	1	106	5530	4.09	4.23	-	-5.59		11.00	11.00	0.09	-1.58	Pass
VHT80	MCS9	1	122	5610	4.09	4.23	-	-5.58		11.00	11.00	0.09	-1.58	Pass
HT20	MCS15	2	100	5500	2.85	2.89			1.37	11.00		2.31	Pass	
HT20	MCS15	2	116	5580	2.85	2.89			1.54	11.00		2.31	Pass	
HT20	MCS15	2	140	5700	2.85	2.89			1.45	11.00		2.31	Pass	
HT40	MCS15	2	102	5510	3.40	3.30			0.01	11.00		2.31	Pass	
HT40	MCS15	2	110	5550	3.40	3.30			0.11	11.00		2.31	Pass	
HT40	MCS15	2	134	5670	3.40	3.30			-0.37	11.00		2.31	Pass	
VHT20	MCS8	2	100	5500	3.05	3.01			3.35	11.00		2.31	Pass	
VHT20	MCS8	2	116	5580	3.05	3.01			3.17	11.00		2.31	Pass	
VHT20	MCS8	2	140	5700	3.05	3.01			2.63	11.00		2.31	Pass	
VHT40	MCS9	2	102	5510	3.93	3.93			-0.69	11.00		2.31	Pass	
VHT40	MCS9	2	110	5550	3.93	3.93			-0.72	11.00		2.31	Pass	
VHT40	MCS9	2	134	5670	3.93	3.93			-1.00	11.00		2.31	Pass	
VHT80	MCS9	2	106	5530	4.61	4.45			-5.24	11.00		2.31	Pass	
VHT80	MCS9	2	122	5610	4.61	4.45			-4.85	11.00		2.31	Pass	

TEST RESULTS DATA
Frequency Stability

Band I										
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Center Frequency (MHz)	Frequency Deviation (MHz)	Frequency Stability (ppm)	Temperature (°C)	Voltage (V)	Note
11a	48Mbps	1	36	5180	5180.000	0.000	0.00	20	3.6	
11a	48Mbps	1	36	5180	5180.000	0.000	0.00	20	4.35	
11a	48Mbps	1	36	5180	5180.000	0.000	0.00	20	3.8	
11a	48Mbps	1	36	5180	5180.025	0.025	4.83	-30	3.8	
11a	48Mbps	1	36	5180	5180.000	0.000	0.00	50	3.8	

Band II										
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Center Frequency (MHz)	Frequency Deviation (MHz)	Frequency Stability (ppm)	Temperature (°C)	Voltage (V)	Note
11a	48Mbps	1	64	5320	5320.000	0.000	0.00	20	3.6	
11a	48Mbps	1	64	5320	5320.000	0.000	0.00	20	4.35	
11a	48Mbps	1	64	5320	5320.000	0.000	0.00	20	3.8	
11a	48Mbps	1	64	5320	5320.025	0.025	4.70	-30	3.8	
11a	48Mbps	1	64	5320	5319.975	-0.025	-4.70	50	3.8	

Band III										
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Center Frequency (MHz)	Frequency Deviation (MHz)	Frequency Stability (ppm)	Temperature (°C)	Voltage (V)	Note
11a	48Mbps	1	100	5500	5500.025	0.025	4.55	20	3.6	
11a	48Mbps	1	100	5500	5500.025	0.025	4.55	20	4.35	
11a	48Mbps	1	100	5500	5500.025	0.025	4.55	20	3.8	
11a	48Mbps	1	100	5500	5500.025	0.025	4.55	-30	3.8	
11a	48Mbps	1	100	5500	5500.000	0.000	0.00	50	3.8	



Appendix B. Radiated Test Results

15E Band 1 - 5150~5250MHz

WIFI 802.11a (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11a CH 36 5180MHz		5140.6	55.35	-18.65	74	48.41	35.34	8.13	36.53	100	360	P	H
		5149.9	47.01	-6.99	54	40.07	35.34	8.13	36.53	100	360	A	H
	*	5178	105.62	-	-	98.61	35.35	8.17	36.51	100	360	P	H
	*	5174	98.74	-	-	91.73	35.35	8.17	36.51	100	360	A	H
		5146.55	53.74	-20.26	74	46.8	35.34	8.13	36.53	100	135	P	V
		5101.1	45.85	-8.15	54	39	35.33	8.08	36.56	100	135	A	V
	*	5176	99.92	-	-	92.91	35.35	8.17	36.51	100	135	P	V
	*	5176	92.44	-	-	85.43	35.35	8.17	36.51	100	135	A	V
802.11a CH 44 5220MHz	*	5216	106.22	-	-	99.16	35.36	8.2	36.5	100	10	P	H
	*	5216	100.06	-	-	93	35.36	8.2	36.5	100	10	A	H
	*	5226	99.35	-	-	92.27	35.37	8.21	36.5	100	150	P	V
	*	5226	92.21	-	-	85.13	35.37	8.21	36.5	100	150	A	V
802.11a CH 48 5240MHz	*	5246	106.06	-	-	98.96	35.38	8.22	36.5	100	8	P	H
	*	5234	99.03	-	-	91.95	35.37	8.21	36.5	100	8	A	H
		5351.55	50.13	-23.87	74	42.93	35.41	8.29	36.5	100	8	P	H
		5353.2	42.14	-11.86	54	34.94	35.41	8.29	36.5	100	8	A	H
	*	5246	97.34	-	-	90.24	35.38	8.22	36.5	100	154	P	V
	*	5246	90.08	-	-	82.98	35.38	8.22	36.5	100	154	A	V
		5367.25	50.56	-23.44	74	43.34	35.41	8.31	36.5	100	154	P	V
		5355.95	41.4	-12.6	54	34.2	35.41	8.29	36.5	100	154	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



**15E band 1 5150~5250MHz
WIFI 802.11a (Harmonic @ 3m)**

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11a		10359	44.04	-29.96	74	53.2	38.4	13.54	61.1	100	0	P	H
CH 36		10359	43.71	-30.29	74	52.87	38.4	13.54	61.1	100	360	P	V
5180MHz													
802.11a		10440	46.33	-27.67	74	55.39	38.43	13.58	61.07	100	0	P	H
CH 44		10440	44.3	-29.7	74	53.36	38.43	13.58	61.07	100	360	P	V
5220MHz													
802.11a		10479	44.36	-29.64	74	53.33	38.46	13.61	61.04	100	0	P	H
CH 48		10479	43.69	-30.31	74	52.66	38.46	13.61	61.04	100	360	P	V
5240MHz													
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



15E Band 2 - 5250~5350MHz

WIFI 802.11a (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11a CH 52 5260MHz		5115.85	50.5	-23.5	74	43.62	35.33	8.1	36.55	100	23	P	H
		5128.2	42.74	-11.26	54	35.83	35.34	8.11	36.54	100	23	A	H
	*	5264	103.96	-	-	96.85	35.38	8.23	36.5	100	23	P	H
	*	5256	97.43	-	-	90.33	35.38	8.22	36.5	100	23	A	H
		5107.3	51.77	-22.23	74	44.89	35.33	8.1	36.55	378	179	P	V
		5114.7	42.42	-11.58	54	35.54	35.33	8.1	36.55	378	179	A	V
	*	5256	98.08	-	-	90.98	35.38	8.22	36.5	378	179	P	V
	*	5254	91.31	-	-	84.21	35.38	8.22	36.5	378	179	A	V
802.11a CH 60 5300MHz	*	5306	103.23	-	-	96.08	35.39	8.26	36.5	100	16	P	H
	*	5302	96.37	-	-	89.22	35.39	8.26	36.5	100	16	A	H
	*	5300	96.44	-	-	89.29	35.39	8.26	36.5	100	160	P	V
	*	5296	89.33	-	-	82.18	35.39	8.26	36.5	100	160	A	V
802.11a CH 64 5320MHz	*	5320	103.66	-	-	96.49	35.4	8.27	36.5	100	13	P	H
	*	5316	96.7	-	-	89.53	35.4	8.27	36.5	100	13	A	H
		5351.7	50.33	-23.67	74	43.13	35.41	8.29	36.5	100	13	P	H
		5351.2	41.89	-12.11	54	34.69	35.41	8.29	36.5	100	13	A	H
	*	5314	95.27	-	-	88.1	35.4	8.27	36.5	100	164	P	V
	*	5316	88.8	-	-	81.63	35.4	8.27	36.5	100	164	A	V
		5351.7	51.33	-22.67	74	44.13	35.41	8.29	36.5	100	164	P	V
		5351.85	42.51	-11.49	54	35.31	35.41	8.29	36.5	100	164	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



**15E band 2 5250~5350MHz
WIFI 802.11a (Harmonic @ 3m)**

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11a		10521	43.39	-30.61	74	52.31	38.48	13.63	61.03	100	0	P	H
CH 52 5260MHz		10521	44.18	-29.82	74	53.1	38.48	13.63	61.03	100	360	P	V
802.11a		10599	44.56	-29.44	74	53.34	38.52	13.68	60.98	100	0	P	H
CH 60 5300MHz		10599	43.87	-30.13	74	52.65	38.52	13.68	60.98	100	360	P	V
802.11a		10641	43.03	-30.97	74	51.76	38.54	13.7	60.97	100	0	P	H
CH 64 5320MHz		10641	43.91	-30.09	74	52.64	38.54	13.7	60.97	100	360	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



15E Band 3 - 5470~5725MHz

WIFI 802.11a (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11a CH 100 5500MHz		5469.36	53.89	-20.11	74	46.46	35.45	8.38	36.4	100	15	P	H
		5469.68	46.48	-7.52	54	39.05	35.45	8.38	36.4	100	15	A	H
	*	5506	103.36	-	-	95.85	35.46	8.4	36.35	100	15	P	H
	*	5496	97.17	-	-	89.71	35.45	8.39	36.38	100	15	A	H
		5469.52	51.13	-22.87	74	43.7	35.45	8.38	36.4	100	163	P	V
		5470	43.36	-10.64	54	35.93	35.45	8.38	36.4	100	163	A	V
	*	5498	96.93	-	-	89.42	35.46	8.4	36.35	100	163	P	V
	*	5496	90.21	-	-	82.75	35.45	8.39	36.38	100	163	A	V
802.11a CH 116 5580MHz	*	5586	103.37	-	-	95.65	35.48	8.47	36.23	100	3	P	H
	*	5584	96.95	-	-	89.23	35.48	8.47	36.23	100	3	A	H
	*	5574	97.67	-	-	89.99	35.48	8.45	36.25	100	167	P	V
	*	5574	91.37	-	-	83.69	35.48	8.45	36.25	100	167	A	V
802.11a CH 140 5700MHz	*	5698	103.92	-	-	96.06	35.57	8.54	36.25	100	0	P	H
	*	5696	96.99	-	-	89.13	35.57	8.54	36.25	100	0	A	H
		5725.08	55.68	-18.32	74	47.77	35.62	8.57	36.28	100	0	P	H
		5725.24	44.44	-9.56	54	36.53	35.62	8.57	36.28	100	0	A	H
	*	5706	96.29	-	-	88.42	35.59	8.55	36.27	100	0	P	V
	*	5696	89.71	-	-	81.85	35.57	8.54	36.25	100	0	A	V
		5726.36	49.1	-24.9	74	41.19	35.62	8.57	36.28	100	0	P	V
	5725	40.37	-13.63	54	32.46	35.62	8.57	36.28	100	0	A	V	
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



**15E band 3 - 5470~5725MHz
WIFI 802.11a (Harmonic @ 3m)**

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11a		11001	43.75	-30.25	74	51.9	38.73	13.91	60.79	100	0	P	H
CH 100		11001	44.6	-29.4	74	52.75	38.73	13.91	60.79	100	360	P	V
5500MHz													
802.11a		11160	45.22	-28.78	74	53.1	38.82	14.01	60.71	100	0	P	H
CH 116		11160	43.71	-30.29	74	51.59	38.82	14.01	60.71	100	360	P	V
5580MHz													
802.11a		11400	43.24	-30.76	74	50.73	38.95	14.15	60.59	100	0	P	H
CH 140		11400	42.89	-31.11	74	50.38	38.95	14.15	60.59	100	360	P	V
5700MHz													
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



15E Band 1 - 5150~5250MHz

WIFI 802.11a (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11a CH 36 5180MHz		5147.95	51.86	-22.14	74	44.92	35.34	8.13	36.53	300	244	P	H
		5143.1	43.18	-10.82	54	36.24	35.34	8.13	36.53	300	244	A	H
	*	5186	97.52	-	-	90.51	35.35	8.17	36.51	300	244	P	H
	*	5182	90.68	-	-	83.67	35.35	8.17	36.51	300	244	A	H
		5147.05	57.09	-16.91	74	50.15	35.34	8.13	36.53	277	60	P	V
		5145.85	46.35	-7.65	54	39.41	35.34	8.13	36.53	277	60	A	V
	*	5180	104.27	-	-	97.26	35.35	8.17	36.51	277	60	P	V
	*	5176	97.9	-	-	90.89	35.35	8.17	36.51	277	60	A	V
802.11a CH 44 5220MHz	*	5226	98.19	-	-	91.11	35.37	8.21	36.5	291	240	P	H
	*	5222	91.31	-	-	84.25	35.36	8.2	36.5	291	240	A	H
	*	5218	104.05	-	-	96.99	35.36	8.2	36.5	277	68	P	V
	*	5216	97.86	-	-	90.8	35.36	8.2	36.5	277	68	A	V
802.11a CH 48 5240MHz	*	5246	97.67	-	-	90.57	35.38	8.22	36.5	264	239	P	H
	*	5234	90.62	-	-	83.54	35.37	8.21	36.5	264	239	A	H
		5364.35	49.89	-24.11	74	42.67	35.41	8.31	36.5	264	239	P	H
		5373.7	42.21	-11.79	54	34.99	35.41	8.31	36.5	264	239	A	H
	*	5246	102.84	-	-	95.74	35.38	8.22	36.5	293	75	P	V
	*	5236	95.9	-	-	88.82	35.37	8.21	36.5	293	75	A	V
		5358.3	50.78	-23.22	74	43.58	35.41	8.29	36.5	293	75	P	V
		5381.55	43.2	-10.8	54	35.96	35.42	8.32	36.5	293	75	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



15E band 1 5150~5250MHz
WIFI 802.11a (Harmonic @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11a		10359	43.73	-30.27	74	52.89	38.4	13.54	61.1	100	0	P	H
CH 36		10359	43.39	-30.61	74	52.55	38.4	13.54	61.1	100	360	P	V
5180MHz													
802.11a		10440	43.74	-30.26	74	52.8	38.43	13.58	61.07	100	0	P	H
CH 44		10440	44.31	-29.69	74	53.37	38.43	13.58	61.07	100	360	P	V
5220MHz													
802.11a		10479	43.63	-30.37	74	52.6	38.46	13.61	61.04	100	1	P	H
CH 48		10479	42.98	-31.02	74	51.95	38.46	13.61	61.04	100	4	P	V
5240MHz													
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



15E Band 2 - 5250~5350MHz

WIFI 802.11a (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11a CH 52 5260MHz		5110.3	51.16	-22.84	74	44.28	35.33	8.1	36.55	278	292	P	H
		5105.3	42.54	-11.46	54	35.69	35.33	8.08	36.56	278	292	A	H
	*	5256	98.14	-	-	91.04	35.38	8.22	36.5	278	292	P	H
	*	5254	91.26	-	-	84.16	35.38	8.22	36.5	278	292	A	H
		5122.5	50.59	-23.41	74	43.71	35.33	8.1	36.55	100	112	P	V
		5109.6	42.6	-11.4	54	35.72	35.33	8.1	36.55	100	112	A	V
	*	5256	101.52	-	-	94.42	35.38	8.22	36.5	100	112	P	V
	*	5256	94.56	-	-	87.46	35.38	8.22	36.5	100	112	A	V
802.11a CH 60 5300MHz	*	5306	99.15	-	-	92	35.39	8.26	36.5	296	291	P	H
	*	5304	91.86	-	-	84.71	35.39	8.26	36.5	296	291	A	H
	*	5306	104.45	-	-	97.3	35.39	8.26	36.5	284	69	P	V
	*	5296	97.48	-	-	90.33	35.39	8.26	36.5	284	69	A	V
802.11a CH 64 5320MHz	*	5318	100	-	-	92.83	35.4	8.27	36.5	300	244	P	H
	*	5316	92.63	-	-	85.46	35.4	8.27	36.5	300	244	A	H
		5350.25	52.65	-21.35	74	45.45	35.41	8.29	36.5	300	244	P	H
		5351.3	44.02	-9.98	54	36.82	35.41	8.29	36.5	300	244	A	H
	*	5326	102.85	-	-	95.68	35.4	8.27	36.5	100	128	P	V
	*	5322	96.6	-	-	89.43	35.4	8.27	36.5	100	128	A	V
		5350.35	56.9	-17.1	74	49.7	35.41	8.29	36.5	100	128	P	V
	5358.85	45.89	-8.11	54	38.69	35.41	8.29	36.5	100	128	A	V	
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



15E band 2 5250~5350MHz
WIFI 802.11a (Harmonic @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11a		10521	43.16	-30.84	74	52.08	38.48	13.63	61.03	100	0	P	H
CH 52 5260MHz		10521	43.11	-30.89	74	52.03	38.48	13.63	61.03	100	7	P	V
802.11a		10599	43.27	-30.73	74	52.05	38.52	13.68	60.98	100	0	P	H
CH 60 5300MHz		10599	42.58	-31.42	74	51.36	38.52	13.68	60.98	100	50	P	V
802.11a		10641	41.72	-32.28	74	50.45	38.54	13.7	60.97	100	0	P	H
CH 64 5320MHz		10641	43.11	-30.89	74	51.84	38.54	13.7	60.97	100	360	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



15E Band 3 - 5470~5725MHz

WIFI 802.11a (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11a CH 100 5500MHz		5469.84	60.29	-13.71	74	52.86	35.45	8.38	36.4	320	291	P	H
	!	5469.04	49.36	-4.64	54	41.93	35.45	8.38	36.4	320	291	A	H
	*	5498	102.84	-	-	95.33	35.46	8.4	36.35	320	291	P	H
	*	5496	96.44	-	-	88.98	35.45	8.39	36.38	320	291	A	H
		5468.4	61.37	-12.63	74	53.94	35.45	8.38	36.4	268	115	P	V
	!	5469.36	50.81	-3.19	54	43.38	35.45	8.38	36.4	268	115	A	V
	*	5500	105.45	-	-	97.94	35.46	8.4	36.35	268	115	P	V
	*	5496	98.76	-	-	91.3	35.45	8.39	36.38	268	115	A	V
802.11a CH 116 5580MHz	*	5586	98.91			91.19	35.48	8.47	36.23	307	291	P	H
	*	5582	92.21			84.49	35.48	8.47	36.23	307	291	A	H
	*	5586	103.75			96.03	35.48	8.47	36.23	100	104	P	V
	*	5586	96.83			89.11	35.48	8.47	36.23	100	104	A	V
802.11a CH 140 5700MHz	*	5698	96.95	-	-	89.09	35.57	8.54	36.25	300	243	P	H
	*	5702	90.69	-	-	82.82	35.59	8.55	36.27	300	243	A	H
		5725.08	55.76	-18.24	74	47.85	35.62	8.57	36.28	300	243	P	H
		5725.48	43.94	-10.06	54	36.03	35.62	8.57	36.28	300	243	A	H
	*	5706	103.61	-	-	95.74	35.59	8.55	36.27	100	124	P	V
	*	5702	95.84	-	-	87.97	35.59	8.55	36.27	100	124	A	V
		5725.88	59.49	-14.51	74	51.58	35.62	8.57	36.28	100	124	P	V
	!	5725.16	48.23	-5.77	54	40.32	35.62	8.57	36.28	100	124	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



15E band 3 - 5470~5725MHz
WIFI 802.11a (Harmonic @ 3m)

Table with 14 columns: WIFI, Note, Frequency, Level, Over, Limit, Read, Antenna, Cable, Preamp, Ant, Table, Peak, Pol. It contains test results for channels 100, 116, and 140, and a Remark section.



**15E band 1 5150~5250MHz
WIFI 802.11n HT20 (Band Edge @ 3m)**

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT20 CH 36 5180MHz		5148.95	56.54	-17.46	74	49.6	35.34	8.13	36.53	108	13	P	H
		5147.8	44.59	-9.41	54	37.65	35.34	8.13	36.53	108	13	A	H
	*	5178	101.22	-	-	94.21	35.35	8.17	36.51	108	13	P	H
	*	5178	95.66	-	-	88.65	35.35	8.17	36.51	108	13	A	H
		5136.8	50.45	-23.55	74	43.54	35.34	8.11	36.54	332	113	P	V
		5129.05	42.33	-11.67	54	35.42	35.34	8.11	36.54	332	113	A	V
	*	5178	92.43	-	-	85.42	35.35	8.17	36.51	332	113	P	V
	*	5182	87.18	-	-	80.17	35.35	8.17	36.51	332	113	A	V
802.11n HT20 CH 44 5220MHz	*	5224	101.72	-	-	94.66	35.36	8.2	36.5	179	10	P	H
	*	5218	95.63	-	-	88.57	35.36	8.2	36.5	179	10	A	H
	*	5226	91.22	-	-	84.14	35.37	8.21	36.5	104	164	P	V
	*	5226	85.52	-	-	78.44	35.37	8.21	36.5	104	164	A	V
802.11n HT20 CH 48 5240MHz	*	5232	102.14	-	-	95.06	35.37	8.21	36.5	100	9	P	H
	*	5238	95.85	-	-	88.77	35.37	8.21	36.5	100	9	A	H
		5367.5	50.6	-23.4	74	43.38	35.41	8.31	36.5	100	9	P	H
		5394.8	42.28	-11.72	54	35.03	35.42	8.33	36.5	100	9	A	H
	*	5244	92.7	-	-	85.6	35.38	8.22	36.5	100	155	P	V
	*	5238	86.17	-	-	79.09	35.37	8.21	36.5	100	155	A	V
		5359.75	49.69	-24.31	74	42.49	35.41	8.29	36.5	100	155	P	V
	5358	41.4	-12.6	54	34.2	35.41	8.29	36.5	100	155	A	V	
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



**15E band 1 5150~5250MHz
WIFI 802.11n HT20 (Harmonic @ 3m)**

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT20 CH 36 5180MHz		10359	42.92	-31.08	74	52.08	38.4	13.54	61.1	100	0	P	H
		10359	43.55	-30.45	74	52.71	38.4	13.54	61.1	100	360	P	V
802.11n HT20 CH 44 5220MHz		10440	44.17	-29.83	74	53.23	38.43	13.58	61.07	100	0	P	H
		10440	45.39	-28.61	74	54.45	38.43	13.58	61.07	100	0	P	V
802.11n HT20 CH 48 5240MHz		10479	43.4	-30.6	74	52.37	38.46	13.61	61.04	100	0	P	H
		10479	43.58	-30.42	74	52.55	38.46	13.61	61.04	100	360	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



**15E band 1 5150~5250MHz
WIFI 802.11n HT40 (Band Edge @ 3m)**

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT40 CH 38 5190MHz		5149.8	61.22	-12.78	74	54.28	35.34	8.13	36.53	121	8	P	H
	!	5149.2	50.92	-3.08	54	43.98	35.34	8.13	36.53	121	8	A	H
	*	5192	98.39	-	-	91.34	35.36	8.19	36.5	121	8	P	H
	*	5194	92.96	-	-	85.91	35.36	8.19	36.5	121	8	A	H
		5148.6	53.85	-20.15	74	46.91	35.34	8.13	36.53	100	164	P	V
		5149.25	44.18	-9.82	54	37.24	35.34	8.13	36.53	100	164	A	V
	*	5200	89.1	-	-	82.05	35.36	8.19	36.5	100	164	P	V
	*	5188	82.44	-	-	75.43	35.35	8.17	36.51	100	164	A	V
802.11n HT40 CH 46 5230MHz	*	5218	98.71	-	-	91.65	35.36	8.2	36.5	124	16	P	H
	*	5238	92.99	-	-	85.91	35.37	8.21	36.5	124	16	A	H
		5382.9	50.52	-23.48	74	43.28	35.42	8.32	36.5	124	16	P	H
		5374.7	42.62	-11.38	54	35.4	35.41	8.31	36.5	124	16	A	H
	*	5216	90.28	-	-	83.22	35.36	8.2	36.5	100	156	P	V
	*	5234	82.66	-	-	75.58	35.37	8.21	36.5	100	156	A	V
		5387.1	49.49	-24.51	74	42.25	35.42	8.32	36.5	100	156	P	V
	5365.85	42.21	-11.79	54	34.99	35.41	8.31	36.5	100	156	A	V	
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



15E band 1 5150~5250MHz
WIFI 802.11n HT40 (Harmonic @ 3m)

Table with 14 columns: WIFI, Note, Frequency, Level, Over, Limit, Read, Antenna, Cable, Preamp, Ant, Table, Peak, Pol. It contains test results for 802.11n HT40 channels 38 and 46 at frequencies 10380 and 10461 MHz.



**15E band 1 5150~5250MHz
WIFI 802.11ac VHT20 (Band Edge @ 3m)**

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11ac VHT20 CH 36 5180MHz		5149.7	51.73	-22.27	74	44.79	35.34	8.13	36.53	100	23	P	H
		5149.2	44.82	-9.18	54	37.88	35.34	8.13	36.53	100	23	A	H
	*	5184	102.91	-	-	95.9	35.35	8.17	36.51	100	23	P	H
	*	5184	96.35	-	-	89.34	35.35	8.17	36.51	100	23	A	H
		5124.8	51.05	-22.95	74	44.14	35.34	8.11	36.54	340	190	P	V
		5115.25	42.53	-11.47	54	35.65	35.33	8.1	36.55	340	190	A	V
	*	5182	94.9	-	-	87.89	35.35	8.17	36.51	340	190	P	V
	5188	87.32	-	-	80.31	35.35	8.17	36.51	340	190	A	V	
802.11ac VHT20 CH 44 5220MHz	*	5222	104.88	-	-	97.82	35.36	8.2	36.5	100	21	P	H
	*	5218	97.14	-	-	90.08	35.36	8.2	36.5	100	21	A	H
	*	5226	93.26	-	-	86.18	35.37	8.21	36.5	100	160	P	V
	*	5218	87.26	-	-	80.2	35.36	8.2	36.5	100	160	A	V
802.11ac VHT20 CH 48 5240MHz	*	5246	103.19	-	-	96.09	35.38	8.22	36.5	100	17	P	H
	*	5234	97.04	-	-	89.96	35.37	8.21	36.5	100	17	A	H
		5365	49.95	-24.05	74	42.73	35.41	8.31	36.5	100	17	P	H
		5366.9	41.95	-12.05	54	34.73	35.41	8.31	36.5	100	17	A	H
	*	5242	93.83	-	-	86.73	35.38	8.22	36.5	100	123	P	V
	*	5244	87.07	-	-	79.97	35.38	8.22	36.5	100	123	A	V
		5374	49.66	-24.34	74	42.44	35.41	8.31	36.5	100	123	P	V
	5375.4	41.58	-12.42	54	34.36	35.41	8.31	36.5	100	123	A	V	
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



15E band 1 5150~5250MHz
WIFI 802.11ac VHT20 (Harmonic @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11ac VHT20 CH 36 5180MHz		10359	43.6	-30.4	74	52.76	38.4	13.54	61.1	100	0	P	H
		10359	43.14	-30.86	74	52.3	38.4	13.54	61.1	100	0	P	V
802.11ac VHT20 CH 44 5220MHz		10440	43.71	-30.29	74	52.77	38.43	13.58	61.07	100	0	P	H
		10440	44.78	-29.22	74	53.84	38.43	13.58	61.07	100	360	P	V
802.11ac VHT20 CH 48 5240MHz		10479	45.09	-28.91	74	54.06	38.46	13.61	61.04	100	0	P	H
		10479	44.01	-29.99	74	52.98	38.46	13.61	61.04	100	360	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



**15E band 1 5150~5250MHz
WIFI 802.11ac VHT40 (Band Edge @ 3m)**

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11ac VHT40 CH 38 5190MHz		5148.7	54.67	-19.33	74	47.73	35.34	8.13	36.53	100	13	P	H
	!	5146.75	48.54	-5.46	54	41.6	35.34	8.13	36.53	100	13	A	H
	*	5204	97.14	-	-	90.09	35.36	8.19	36.5	100	13	P	H
	*	5198	91.48	-	-	84.43	35.36	8.19	36.5	100	13	A	H
		5147.65	50.1	-23.9	74	43.16	35.34	8.13	36.53	327	186	P	V
		5147.4	42.79	-11.21	54	35.85	35.34	8.13	36.53	327	186	A	V
	*	5172	89.2	-	-	82.22	35.35	8.15	36.52	327	186	P	V
		5202	82.65	-	-	75.6	35.36	8.19	36.5	327	186	A	V
802.11ac VHT40 CH 46 5230MHz	*	5234	97.07	-	-	89.99	35.37	8.21	36.5	123	18	P	H
	*	5232	91.58	-	-	84.5	35.37	8.21	36.5	123	18	A	H
		5353.6	49.53	-24.47	74	42.33	35.41	8.29	36.5	123	18	P	H
		5369.25	42.14	-11.86	54	34.92	35.41	8.31	36.5	123	18	A	H
	*	5238	88.84	-	-	81.76	35.37	8.21	36.5	321	182	P	V
	*	5236	83.13	-	-	76.05	35.37	8.21	36.5	321	182	A	V
		5398.7	48.61	-25.39	74	41.36	35.42	8.33	36.5	321	182	P	V
	5376.1	41.81	-12.19	54	34.59	35.41	8.31	36.5	321	182	A	V	
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



15E band 1 5150~5250MHz
WIFI 802.11ac VHT40 (Harmonic @ 3m)

Table with 14 columns: WIFI, Note, Frequency, Level, Over, Limit, Read, Antenna, Cable, Preamp, Ant, Table, Peak, Pol. It contains test results for 802.11ac VHT40 channels 38 and 46 at frequencies 10380 and 10461 MHz.



**15E band 1 5150~5250MHz
WIFI 802.11ac VHT80 (Band Edge @ 3m)**

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11ac VHT80 CH 42 5210MHz		5125.3	59.3	-14.7	74	52.39	35.34	8.11	36.54	100	7	P	H
	!	5124.7	50.13	-3.87	54	43.22	35.34	8.11	36.54	100	7	A	H
	*	5186	95.05	-	-	88.04	35.35	8.17	36.51	100	7	P	H
	*	5218	90.29	-	-	83.23	35.36	8.2	36.5	100	7	A	H
		5351.25	48.7	-25.3	74	41.5	35.41	8.29	36.5	100	7	P	H
		5374.5	42.78	-11.22	54	35.56	35.41	8.31	36.5	100	7	A	H
		5135.5	50.17	-23.83	74	43.26	35.34	8.11	36.54	300	206	P	V
		5117	44.11	-9.89	54	37.23	35.33	8.1	36.55	300	206	A	V
	*	5242	86.85	-	-	79.75	35.38	8.22	36.5	300	206	P	V
	*	5220	80.68	-	-	73.62	35.36	8.2	36.5	300	206	A	V
		5366	48.57	-25.43	74	41.35	35.41	8.31	36.5	300	206	P	V
	5353.8	42.53	-11.47	54	35.33	35.41	8.29	36.5	300	206	A	V	
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



15E band 1 5150~5250MHz
WIFI 802.11ac VHT80 (Harmonic @ 3m)

Table with 14 columns: WIFI, Note, Frequency, Level, Over, Limit, Read, Antenna, Cable, Preamp, Ant, Table, Peak, Pol. It contains two rows of data for 802.11ac VHT80 and CH 42 5210MHz.

Remark
1. No other spurious found.
2. All results are PASS against Peak and Average limit line.



**15E band 2 5250~5350MHz
WIFI 802.11n HT20 (Band Edge @ 3m)**

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT20 CH 52 5260MHz		5131.75	51.38	-22.62	74	44.47	35.34	8.11	36.54	122	10	P	H
		5127	42.59	-11.41	54	35.68	35.34	8.11	36.54	122	10	A	H
	*	5258	101.89	-	-	94.79	35.38	8.22	36.5	122	10	P	H
	*	5264	95.72	-	-	88.61	35.38	8.23	36.5	122	10	A	H
		5127.4	49.82	-24.18	74	42.91	35.34	8.11	36.54	341	206	P	V
		5112.7	42.13	-11.87	54	35.25	35.33	8.1	36.55	341	206	A	V
	*	5258	92.34	-	-	85.24	35.38	8.22	36.5	341	206	P	V
	*	5264	86.52	-	-	79.41	35.38	8.23	36.5	341	206	A	V
802.11n HT20 CH 60 5300MHz	*	5306	101.29	-	-	94.14	35.39	8.26	36.5	100	9	P	H
	*	5304	95.42	-	-	88.27	35.39	8.26	36.5	100	9	A	H
	*	5306	93.38	-	-	86.23	35.39	8.26	36.5	302	205	P	V
	*	5304	86.6	-	-	79.45	35.39	8.26	36.5	302	205	A	V
802.11n HT20 CH 64 5320MHz	*	5324	101.19	-	-	94.02	35.4	8.27	36.5	118	9	P	H
	*	5324	95.46	-	-	88.29	35.4	8.27	36.5	118	9	A	H
		5354.15	53.27	-20.73	74	46.07	35.41	8.29	36.5	118	9	P	H
		5350	45.16	-8.84	54	37.96	35.41	8.29	36.5	118	9	A	H
	*	5316	94.45	-	-	87.28	35.4	8.27	36.5	319	208	P	V
	*	5314	88.22	-	-	81.05	35.4	8.27	36.5	319	208	A	V
		5354.25	49.92	-24.08	74	42.72	35.41	8.29	36.5	319	208	P	V
	5350.45	42	-12	54	34.8	35.41	8.29	36.5	319	208	A	V	
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



**15E band 2 5250~5350MHz
WIFI 802.11n HT20 (Harmonic @ 3m)**

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT20 CH 52 5260MHz		10521	43.63	-30.37	74	52.55	38.48	13.63	61.03	100	0	P	H
		10521	43.98	-30.02	74	52.9	38.48	13.63	61.03	100	360	P	V
802.11n HT20 CH 60 5300MHz		10599	43.69	-30.31	74	52.47	38.52	13.68	60.98	100	0	P	H
		10599	43.61	-30.39	74	52.39	38.52	13.68	60.98	100	360	P	V
802.11n HT20 CH 64 5320MHz		10641	43.04	-30.96	74	51.77	38.54	13.7	60.97	100	5	P	H
		10641	46.04	-27.96	74	54.77	38.54	13.7	60.97	100	3	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



**15E band 2 5250~5350MHz
WIFI 802.11n HT40 (Band Edge @ 3m)**

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT40 CH 54 5270MHz		5116.45	50.29	-23.71	74	43.41	35.33	8.1	36.55	124	15	P	H
		5145.2	42.76	-11.24	54	35.82	35.34	8.13	36.53	124	15	A	H
	*	5258	99.36	-	-	92.26	35.38	8.22	36.5	124	15	P	H
	*	5278	93.38	-	-	86.24	35.39	8.25	36.5	124	15	A	H
		5101.25	50.64	-23.36	74	43.79	35.33	8.08	36.56	100	166	P	V
		5118.05	42.74	-11.26	54	35.86	35.33	8.1	36.55	100	166	A	V
	*	5266	89.51	-	-	82.4	35.38	8.23	36.5	100	166	P	V
	*	5264	83.76	-	-	76.65	35.38	8.23	36.5	100	166	A	V
802.11n HT40 CH 62 5310MHz	*	5306	99.84	-	-	92.69	35.39	8.26	36.5	100	14	P	H
	*	5298	93.42	-	-	86.27	35.39	8.26	36.5	100	14	A	H
		5351.55	61.23	-12.77	74	54.03	35.41	8.29	36.5	100	14	P	H
	!	5353.8	48.93	-5.07	54	41.73	35.41	8.29	36.5	100	14	A	H
	*	5316	91.92	-	-	84.75	35.4	8.27	36.5	300	209	P	V
	*	5316	85.64	-	-	78.47	35.4	8.27	36.5	300	209	A	V
		5351.15	55.47	-18.53	74	48.27	35.41	8.29	36.5	300	209	P	V
	5351.1	44.6	-9.4	54	37.4	35.41	8.29	36.5	300	209	A	V	
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



**15E band 2 5250~5350MHz
WIFI 802.11n HT40 (Harmonic @ 3m)**

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT40 CH 54 5270MHz		10539	43.21	-30.79	74	52.1	38.49	13.64	61.02	100	0	P	H
		10539	42.53	-31.47	74	51.42	38.49	13.64	61.02	100	237	P	V
802.11n HT40 CH 62 5310MHz		10620	42.08	-31.92	74	50.84	38.53	13.69	60.98	100	0	P	H
		10620	43.31	-30.69	74	52.07	38.53	13.69	60.98	100	360	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



15E band 2 5250~5350MHz
WIFI 802.11ac VHT20 (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11ac VHT20 CH 52 5260MHz		5123.65	51.27	-22.73	74	44.36	35.34	8.11	36.54	100	21	P	H
		5136.95	42.4	-11.6	54	35.49	35.34	8.11	36.54	100	21	A	H
	*	5262	104.39	-	-	97.28	35.38	8.23	36.5	100	21	P	H
	*	5264	96.8	-	-	89.69	35.38	8.23	36.5	100	21	A	H
		5148	50.41	-23.59	74	43.47	35.34	8.13	36.53	100	161	P	V
		5114	42.2	-11.8	54	35.32	35.33	8.1	36.55	100	161	A	V
	*	5252	93.76	-	-	86.66	35.38	8.22	36.5	100	161	P	V
	*	5264	86.99	-	-	79.88	35.38	8.23	36.5	100	161	A	V
802.11ac VHT20 CH 60 5300MHz	*	5302	104.11	-	-	96.96	35.39	8.26	36.5	100	17	P	H
	*	5302	96.16	-	-	89.01	35.39	8.26	36.5	100	17	A	H
	*	5304	95	-	-	87.85	35.39	8.26	36.5	300	205	P	V
	*	5304	88.28	-	-	81.13	35.39	8.26	36.5	300	205	A	V
802.11ac VHT20 CH 64 5320MHz	*	5322	103.86	-	-	96.69	35.4	8.27	36.5	100	14	P	H
	*	5322	96.28	-	-	89.11	35.4	8.27	36.5	100	14	A	H
		5350.75	59.38	-14.62	74	52.18	35.41	8.29	36.5	100	14	P	H
		5350.1	46.54	-7.46	54	39.34	35.41	8.29	36.5	100	14	A	H
	*	5316	94.52	-	-	87.35	35.4	8.27	36.5	100	155	P	V
	*	5316	88.38	-	-	81.21	35.4	8.27	36.5	100	155	A	V
		5350.6	52.63	-21.37	74	45.43	35.41	8.29	36.5	100	155	P	V
	5350.05	42.82	-11.18	54	35.62	35.41	8.29	36.5	100	155	A	V	
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



15E band 2 5250~5350MHz
WIFI 802.11ac VHT20 (Harmonic @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11ac VHT20		10521	43.86	-30.14	74	52.78	38.48	13.63	61.03	100	0	P	H
CH 52 5260MHz		10521	43.54	-30.46	74	52.46	38.48	13.63	61.03	100	360	P	V
802.11ac VHT20		10599	43.34	-30.66	74	52.12	38.52	13.68	60.98	100	0	P	H
CH 60 5300MHz		10599	43.44	-30.56	74	52.22	38.52	13.68	60.98	100	0	P	V
802.11ac VHT20		10641	44.17	-29.83	74	52.9	38.54	13.7	60.97	100	360	P	H
CH 64 5320MHz		10641	42.59	-31.41	74	51.32	38.54	13.7	60.97	100	360	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



**15E band 2 5250~5350MHz
WIFI 802.11ac VHT40 (Band Edge @ 3m)**

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11ac VHT40 CH 54 5270MHz		5100.4	49.95	-24.05	74	43.1	35.33	8.08	36.56	112	17	P	H
		5147.8	42.88	-11.12	54	35.94	35.34	8.13	36.53	112	17	A	H
	*	5274	98.52	-	-	91.41	35.38	8.23	36.5	112	17	P	H
	*	5272	91.34	-	-	84.23	35.38	8.23	36.5	112	17	A	H
		5114.2	49.96	-24.04	74	43.08	35.33	8.1	36.55	318	203	P	V
		5115	42.93	-11.07	54	36.05	35.33	8.1	36.55	318	203	A	V
	*	5286	89.68	-	-	82.54	35.39	8.25	36.5	318	203	P	V
	*	5286	83.06	-	-	75.92	35.39	8.25	36.5	318	203	A	V
802.11ac VHT40 CH 62 5310MHz	*	5312	99.12	-	-	91.95	35.4	8.27	36.5	100	20	P	H
	*	5312	92.49	-	-	85.32	35.4	8.27	36.5	100	20	A	H
		5351.5	57.65	-16.35	74	50.45	35.41	8.29	36.5	100	20	P	H
		5352.2	46.14	-7.86	54	38.94	35.41	8.29	36.5	100	20	A	H
	*	5316	90.49	-	-	83.32	35.4	8.27	36.5	334	193	P	V
	*	5314	84.21	-	-	77.04	35.4	8.27	36.5	334	193	A	V
		5350.15	50.01	-23.99	74	42.81	35.41	8.29	36.5	334	193	P	V
	5356.15	42.47	-11.53	54	35.27	35.41	8.29	36.5	334	193	A	V	
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



15E band 2 5250~5350MHz
WIFI 802.11ac VHT40 (Harmonic @ 3m)

Table with 14 columns: WIFI, Note, Frequency, Level, Over, Limit, Read, Antenna, Cable, Preamp, Ant, Table, Peak, Pol. It contains test data for 802.11ac VHT40 channels 54 and 62, and a Remark section.



**15E band 2 5250~5350MHz
WIFI 802.11ac VHT80 (Band Edge @ 3m)**

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11ac VHT80 CH 58 5290MHz		5107.3	49.59	-24.41	74	42.71	35.33	8.1	36.55	100	9	P	H
		5117.85	43.36	-10.64	54	36.48	35.33	8.1	36.55	100	9	A	H
	*	5302	96.94	-	-	89.79	35.39	8.26	36.5	100	9	P	H
	*	5304	91.36	-	-	84.21	35.39	8.26	36.5	100	9	A	H
		5374.25	55.91	-18.09	74	48.69	35.41	8.31	36.5	100	9	P	H
	!	5377.75	48.54	-5.46	54	41.3	35.42	8.32	36.5	100	9	A	H
		5135.1	49.44	-24.56	74	42.53	35.34	8.11	36.54	300	206	P	V
		5133.2	43.21	-10.79	54	36.3	35.34	8.11	36.54	300	206	A	V
	*	5306	89.69	-	-	82.54	35.39	8.26	36.5	300	206	P	V
	*	5304	83.33	-	-	76.18	35.39	8.26	36.5	300	206	A	V
		5385.15	52.18	-21.82	74	44.94	35.42	8.32	36.5	300	206	P	V
	5374.1	44.39	-9.61	54	37.17	35.41	8.31	36.5	300	206	A	V	
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



15E band 2 5250~5350MHz
WIFI 802.11ac VHT80 (Harmonic @ 3m)

Table with 14 columns: WIFI, Note, Frequency, Level, Over, Limit, Read, Antenna, Cable, Preamp, Ant, Table, Peak, Pol. It contains two rows of data for 802.11ac VHT80 CH 58 at 5290MHz.

Remark
1. No other spurious found.
2. All results are PASS against Peak and Average limit line.



**15E band 3 - 5470~5725MHz
WIFI 802.11n HT20 (Band Edge @ 3m)**

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT20 CH 100 5500MHz		5470	57.49	-16.51	74	50.06	35.45	8.38	36.4	100	9	P	H
		5469.84	47.57	-6.43	54	40.14	35.45	8.38	36.4	100	9	A	H
	*	5498	102.23	-	-	94.72	35.46	8.4	36.35	100	9	P	H
	*	5494	96.25	-	-	88.79	35.45	8.39	36.38	100	9	A	H
		5400.56	50.39	-23.61	74	43.14	35.42	8.33	36.5	302	207	P	V
		5468.24	43.3	-10.7	54	35.87	35.45	8.38	36.4	302	207	A	V
	*	5492	96.82	-	-	89.36	35.45	8.39	36.38	302	207	P	V
	*	5498	91.33	-	-	83.82	35.46	8.4	36.35	302	207	A	V
802.11n HT20 CH 116 5580MHz	*	5584	101.97	-	-	94.25	35.48	8.47	36.23	100	7	P	H
	*	5588	96.14	-	-	88.42	35.48	8.47	36.23	100	7	A	H
	*	5584	96.58	-	-	88.86	35.48	8.47	36.23	324	209	P	V
	*	5584	91.09	-	-	83.37	35.48	8.47	36.23	324	209	A	V
802.11n HT20 CH 140 5700MHz	*	5696	101.77	-	-	93.91	35.57	8.54	36.25	125	360	P	H
	*	5694	96.22	-	-	88.36	35.57	8.54	36.25	125	360	A	H
		5725.8	60.44	-13.56	74	52.53	35.62	8.57	36.28	125	360	P	H
	!	5725.16	49.65	-4.35	54	41.74	35.62	8.57	36.28	125	360	A	H
	*	5708	94.76	-	-	86.89	35.59	8.55	36.27	310	206	P	V
	*	5704	90	-	-	82.13	35.59	8.55	36.27	310	206	A	V
		5730.6	50.7	-23.3	74	42.79	35.62	8.57	36.28	310	206	P	V
	5727.24	43.66	-10.34	54	35.75	35.62	8.57	36.28	310	206	A	V	
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



**15E band 3 - 5470~5725MHz
WIFI 802.11n HT20 (Harmonic @ 3m)**

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT20 CH 100 5500MHz		11001	43.33	-30.67	74	51.48	38.73	13.91	60.79	100	0	P	H
		11001	43.71	-30.29	74	51.86	38.73	13.91	60.79	100	360	P	V
802.11n HT20 CH 116 5580MHz		11160	42.56	-31.44	74	50.44	38.82	14.01	60.71	100	0	P	H
		11160	43.78	-30.22	74	51.66	38.82	14.01	60.71	100	360	P	V
802.11n HT20 CH 140 5700MHz		11400	43.1	-30.9	74	50.59	38.95	14.15	60.59	100	0	P	H
		11400	42.6	-31.4	74	50.09	38.95	14.15	60.59	100	0	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



**15E band 3 - 5470~5725MHz
WIFI 802.11n HT40 (Band Edge @ 3m)**

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT40 CH 102 5510MHz		5470	62.54	-11.46	74	55.11	35.45	8.38	36.4	100	13	P	H
	!	5469.52	51.36	-2.64	54	43.93	35.45	8.38	36.4	100	13	A	H
	*	5500	99.5	-	-	91.99	35.46	8.4	36.35	100	13	P	H
	*	5498	94.01	-	-	86.5	35.46	8.4	36.35	100	13	A	H
		5469.52	55.77	-18.23	74	48.34	35.45	8.38	36.4	300	211	P	V
		5469.2	47.08	-6.92	54	39.65	35.45	8.38	36.4	300	211	A	V
	*	5496	93.84	-	-	86.38	35.45	8.39	36.38	300	211	P	V
	*	5516	88.67	-	-	81.12	35.46	8.42	36.33	300	211	A	V
802.11n HT40 CH 110 5550MHz	*	5534	99.17	-	-	91.57	35.47	8.43	36.3	100	9	P	H
	*	5554	92.78	-	-	85.15	35.47	8.44	36.28	100	9	A	H
	*	5542	94.56	-	-	86.96	35.47	8.43	36.3	310	204	P	V
	*	5554	87.71	-	-	80.08	35.47	8.44	36.28	310	204	A	V
802.11n HT40 CH 134 5670MHz	*	5660	99.51	-	-	91.7	35.52	8.52	36.23	106	4	P	H
	*	5666	94.11	-	-	86.3	35.52	8.52	36.23	106	4	A	H
		5729.08	51.37	-22.63	74	43.46	35.62	8.57	36.28	106	4	P	H
		5727.8	44.2	-9.8	54	36.29	35.62	8.57	36.28	106	4	A	H
	*	5662	91.83	-	-	84.02	35.52	8.52	36.23	286	206	P	V
	*	5664	85.99	-	-	78.18	35.52	8.52	36.23	286	206	A	V
		5745.72	50.7	-23.3	74	42.77	35.64	8.58	36.29	286	206	P	V
	5764.52	42.82	-11.18	54	34.87	35.66	8.59	36.3	286	206	A	V	
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



**15E band 3 - 5470~5725MHz
WIFI 802.11n HT40 (Harmonic @ 3m)**

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT40 CH 102 5510MHz		11019	43.84	-30.16	74	51.96	38.74	13.92	60.78	100	0	P	H
		11019	44.6	-29.4	74	52.72	38.74	13.92	60.78	100	360	P	V
802.11n HT40 CH 110 5550MHz		11100	43.92	-30.08	74	51.91	38.78	13.97	60.74	100	0	P	H
		11100	45.3	-28.7	74	53.29	38.78	13.97	60.74	100	360	P	V
802.11n HT40 CH 134 5670MHz		11340	44.35	-29.65	74	51.95	38.91	14.11	60.62	100	0	P	H
		11340	44	-30	74	51.6	38.91	14.11	60.62	100	360	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



**15E band 3 - 5470~5725MHz
WIFI 802.11ac VHT20 (Band Edge @ 3m)**

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11ac VHT20 CH 100 5500MHz		5469.52	55.39	-18.61	74	47.96	35.45	8.38	36.4	100	19	P	H
		5469.68	45.52	-8.48	54	38.09	35.45	8.38	36.4	100	19	A	H
	*	5504	102.11	-	-	94.6	35.46	8.4	36.35	100	19	P	H
	*	5498	95.34	-	-	87.83	35.46	8.4	36.35	100	19	A	H
		5469.36	50.56	-23.44	74	43.13	35.45	8.38	36.4	333	205	P	V
		5470	43.25	-10.75	54	35.82	35.45	8.38	36.4	333	205	A	V
	*	5494	96.66	-	-	89.2	35.45	8.39	36.38	333	205	P	V
	*	5494	91.29	-	-	83.83	35.45	8.39	36.38	333	205	A	V
802.11ac VHT20 CH 116 5580MHz	*	5588	101.23			93.51	35.48	8.47	36.23	100	3	P	H
	*	5584	96.02			88.3	35.48	8.47	36.23	100	3	A	H
	*	5574	95.71			88.03	35.48	8.45	36.25	300	207	P	V
	*	5574	90.59			82.91	35.48	8.45	36.25	300	207	A	V
802.11ac VHT20 CH 140 5700MHz	*	5702	101.75	-	-	93.88	35.59	8.55	36.27	100	1	P	H
	*	5694	95.88	-	-	88.02	35.57	8.54	36.25	100	1	A	H
		5725	55.33	-18.67	74	47.42	35.62	8.57	36.28	100	1	P	H
		5726.92	45.85	-8.15	54	37.94	35.62	8.57	36.28	100	1	A	H
	*	5696	95.07	-	-	87.21	35.57	8.54	36.25	300	205	P	V
	*	5694	89.41	-	-	81.55	35.57	8.54	36.25	300	205	A	V
		5725.24	52.2	-21.8	74	44.29	35.62	8.57	36.28	300	205	P	V
	5725.96	43.04	-10.96	54	35.13	35.62	8.57	36.28	300	205	A	V	
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



15E band 3 - 5470~5725MHz

WIFI 802.11ac VHT20 (Harmonic @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11ac VHT20 CH 100 5500MHz		11001	43.57	-30.43	74	51.72	38.73	13.91	60.79	100	0	P	H
		11001	43.43	-30.57	74	51.58	38.73	13.91	60.79	100	360	P	V
802.11ac VHT20 CH 116 5580MHz		11160	43.46	-30.54	74	51.34	38.82	14.01	60.71	100	0	P	H
		11160	44.73	-29.27	74	52.61	38.82	14.01	60.71	100	360	P	V
802.11ac VHT20 CH 140 5700MHz		11400	44.22	-29.78	74	51.71	38.95	14.15	60.59	100	0	P	H
		11400	43.3	-30.7	74	50.79	38.95	14.15	60.59	100	360	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



**15E band 3 - 5470~5725MHz
WIFI 802.11ac VHT40 (Band Edge @ 3m)**

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11ac VHT40 CH 102 5510MHz		5469.84	57.89	-16.11	74	50.46	35.45	8.38	36.4	117	5	P	H
	!	5469.52	50.11	-3.89	54	42.68	35.45	8.38	36.4	117	5	A	H
	*	5526	98.66	-	-	91.11	35.46	8.42	36.33	117	5	P	H
	*	5506	92.79	-	-	85.28	35.46	8.4	36.35	117	5	A	H
		5467.76	51.54	-22.46	74	44.11	35.45	8.38	36.4	311	204	P	V
		5469.84	46.3	-7.7	54	38.87	35.45	8.38	36.4	311	204	A	V
	*	5520	92.79	-	-	85.24	35.46	8.42	36.33	311	204	P	V
	*	5506	87.43	-	-	79.92	35.46	8.4	36.35	311	204	A	V
802.11ac VHT40 CH 110 5550MHz	*	5544	99.63	-	-	92.03	35.47	8.43	36.3	120	6	P	H
	*	5546	93.02	-	-	85.42	35.47	8.43	36.3	120	6	A	H
	*	5544	94.31	-	-	86.71	35.47	8.43	36.3	310	208	P	V
	*	5546	87.96	-	-	80.36	35.47	8.43	36.3	310	208	A	V
802.11ac VHT40 CH 134 5670MHz	*	5666	100.01	-	-	92.2	35.52	8.52	36.23	100	360	P	H
	*	5666	93.63	-	-	85.82	35.52	8.52	36.23	100	360	A	H
		5729.64	50.64	-23.36	74	42.73	35.62	8.57	36.28	100	360	P	H
		5725	44.41	-9.59	54	36.5	35.62	8.57	36.28	100	360	A	H
	*	5664	91.65	-	-	83.84	35.52	8.52	36.23	300	206	P	V
	*	5684	86.05	-	-	78.19	35.57	8.54	36.25	300	206	A	V
		5732.04	49.88	-24.12	74	41.97	35.62	8.57	36.28	300	206	P	V
	5740.92	42.73	-11.27	54	34.8	35.64	8.58	36.29	300	206	A	V	
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



15E band 3 - 5470~5725MHz

WIFI 802.11ac VHT40 (Harmonic @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11ac VHT40 CH 102 5510MHz		11019	44.45	-29.55	74	52.57	38.74	13.92	60.78	100	0	P	H
		11019	42.94	-31.06	74	51.06	38.74	13.92	60.78	100	360	P	V
802.11ac VHT40 CH 110 5550MHz		11100	44.91	-29.09	74	52.9	38.78	13.97	60.74	100	0	P	H
		11100	43.92	-30.08	74	51.91	38.78	13.97	60.74	100	360	P	V
802.11ac VHT40 CH 134 5670MHz		11340	41.8	-32.2	74	49.4	38.91	14.11	60.62	100	0	P	H
		11340	41.98	-32.02	74	49.58	38.91	14.11	60.62	100	360	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



**15E band 3 5470~5725MHz
WIFI 802.11ac VHT80 (Band Edge @ 3m)**

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11ac VHT80 CH 106 5530MHz		5445.36	59.27	-14.73	74	51.93	35.44	8.35	36.45	100	0	P	H
	!	5444.88	50.32	-3.68	54	42.98	35.44	8.35	36.45	100	0	A	H
	*	5546	95.75	-	-	88.15	35.47	8.43	36.3	100	0	P	H
	*	5544	89.43	-	-	81.83	35.47	8.43	36.3	100	0	A	H
		5758.04	50.01	-23.99	74	42.06	35.66	8.59	36.3	100	0	P	H
		5763.48	43.91	-10.09	54	35.96	35.66	8.59	36.3	100	0	A	H
		5446	54.04	-19.96	74	46.65	35.44	8.37	36.42	300	206	P	V
		5433.84	46.36	-7.64	54	39.02	35.44	8.35	36.45	300	206	A	V
	*	5526	88.71	-	-	81.16	35.46	8.42	36.33	300	206	P	V
	*	5544	83.59	-	-	75.99	35.47	8.43	36.3	300	206	A	V
		5755.72	49.76	-24.24	74	41.81	35.66	8.59	36.3	300	206	P	V
	5760.52	43.31	-10.69	54	35.36	35.66	8.59	36.3	300	206	A	V	
802.11ac VHT80 CH 122 5610MHz		5419.92	49.83	-24.17	74	42.53	35.43	8.34	36.47	100	0	P	H
		5448.08	43.36	-10.64	54	35.97	35.44	8.37	36.42	100	0	A	H
	*	5606	95	-	-	87.23	35.49	8.48	36.2	100	0	P	H
	*	5614	89.07	-	-	81.3	35.49	8.48	36.2	100	0	A	H
		5756.12	50.63	-23.37	74	42.68	35.66	8.59	36.3	100	0	P	H
		5727.32	44.11	-9.89	54	36.2	35.62	8.57	36.28	100	0	A	H
		5461.36	50.11	-23.89	74	42.72	35.44	8.37	36.42	300	211	P	V
		5466	43.29	-10.71	54	35.86	35.45	8.38	36.4	300	211	A	V
	*	5626	89.31	-	-	81.54	35.49	8.49	36.21	300	211	P	V
	*	5624	83.6	-	-	75.83	35.49	8.49	36.21	300	211	A	V
		5742.84	50.18	-23.82	74	42.25	35.64	8.58	36.29	300	211	P	V
	5742.2	43.67	-10.33	54	35.74	35.64	8.58	36.29	300	211	A	V	
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



**15E band 3 5470~5725MHz
WIFI 802.11ac VHT80 (Harmonic @ 3m)**

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11ac VHT80 CH 106 5530MHz		11061	45.67	-28.33	74	53.71	38.77	13.95	60.76	100	0	P	H
		11061	44.87	-29.13	74	52.91	38.77	13.95	60.76	100	360	P	V
802.11ac VHT80 CH 122 5610MHz		11220	43.13	-30.87	74	50.92	38.85	14.04	60.68	100	0	P	H
		11220	43.47	-30.53	74	51.26	38.85	14.04	60.68	100	360	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



15E Emission below 1GHz
WIFI 802.11n HT40 (LF @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT40 LF		85.29	24.75	-15.25	40	43.93	10.2	1.12	30.5	-	-	P	H
		207.51	32.92	-10.58	43.5	50.53	11.08	1.73	30.42	-	-	P	H
		240.49	30.37	-15.63	46	46.4	12.72	1.73	30.48	-	-	P	H
		325.85	37.95	-8.05	46	50.91	15.37	2.22	30.55	132	279	P	H
		433.52	28.72	-17.28	46	39.42	17.27	2.59	30.56	-	-	P	H
		962.17	25.83	-28.17	54	28.7	23.65	4.01	30.53	-	-	P	H
		30	27.94	-12.06	40	39.79	18.6	0.65	31.1	-	-	P	V
		73.65	29.5	-10.5	40	50.14	8.86	1.04	30.54	107	226	P	V
		158.04	26.68	-16.82	43.5	42.25	13.31	1.52	30.4	-	-	P	V
		240.49	27.21	-18.79	46	43.24	12.72	1.73	30.48	-	-	P	V
		321	33.9	-12.1	46	46.96	15.28	2.2	30.54	-	-	P	V
		481.05	30.41	-15.59	46	40.16	17.95	2.74	30.44	-	-	P	V
Remark	1. No other spurious found. 2. All results are PASS against limit line.												



Note symbol

*	Fundamental Frequency which can be ignored. However, the level of any unwanted emissions shall not exceed the level of the fundamental frequency per 15.209(c).
!	Test result is over limit line.
P/A	Peak or Average
H/V	Horizontal or Vertical



A calculation example for radiated spurious emission is shown as below:

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11b		2390	55.45	-18.55	74	54.51	32.22	4.58	35.86	103	308	P	H
CH 01													
2412MHz		2390	43.54	-10.46	54	42.6	32.22	4.58	35.86	103	308	A	H

1. Level(dBμV/m) =

Antenna Factor(dB/m) + Cable Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)

2. Over Limit(dB) = Level(dBμV/m) – Limit Line(dBμV/m)

For Peak Limit @ 2390MHz:

1. Level(dBμV/m)

= Antenna Factor(dB/m) + Cable Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)

= 32.22(dB/m) + 4.58(dB) + 54.51(dBμV) – 35.86 (dB)

= 55.45 (dBμV/m)

2. Over Limit(dB)

= Level(dBμV/m) – Limit Line(dBμV/m)

= 55.45(dBμV/m) – 74(dBμV/m)

= -18.55(dB)

For Average Limit @ 2390MHz:

1. Level(dBμV/m)

= Antenna Factor(dB/m) + Cable Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)

= 32.22(dB/m) + 4.58(dB) + 42.6(dBμV) – 35.86 (dB)

= 43.54 (dBμV/m)

2. Over Limit(dB)

= Level(dBμV/m) – Limit Line(dBμV/m)

= 43.54(dBμV/m) – 54(dBμV/m)

= -10.46(dB)

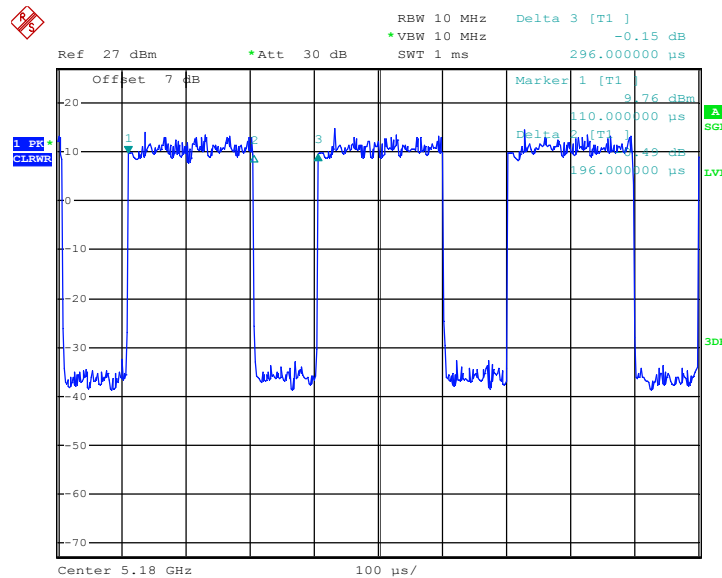
Both peak and average measured complies with the limit line, so test result is “PASS”.



Appendix D. Duty Cycle Plots

Antenna	Band	Duty Cycle(%)	T(ms)	1/T(kHz)	VBW Setting
1	802.11a	66.216	0.196	5.102	10kHz
2	802.11a	66.216	0.196	5.102	10kHz
1+2	802.11n HT20	51.923	0.108	9.259	10kHz
1+2	802.11n HT40	46.809	0.088	11.364	12kHz
1+2	802.11ac VHT20	50.000	0.100	10.000	10kHz
1+2	802.11ac VHT40	40.476	0.068	14.706	15kHz
1+2	802.11ac VHT80	35.897	0.056	17.857	18kHz

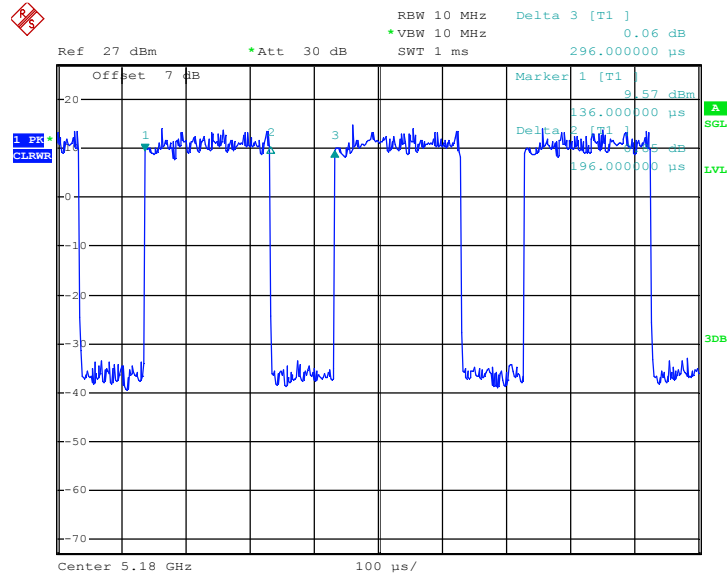
802.11a Antenna 1



Date: 29.MAR.2016 21:48:06

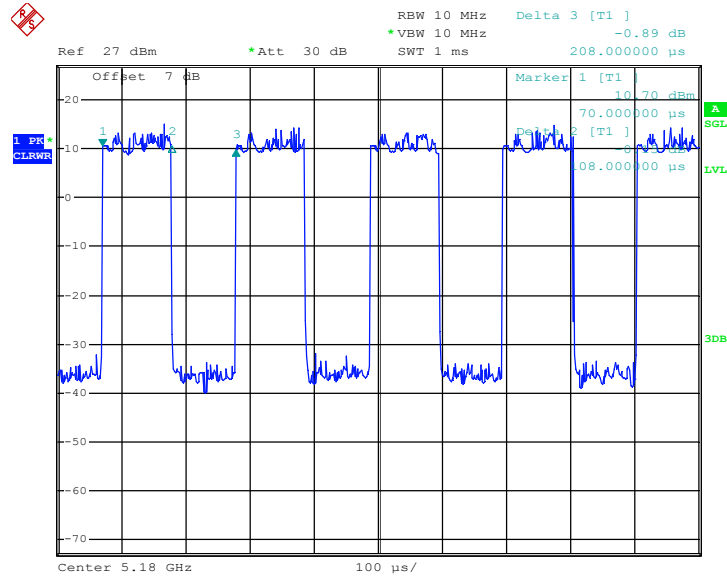


802.11a Antenna 2



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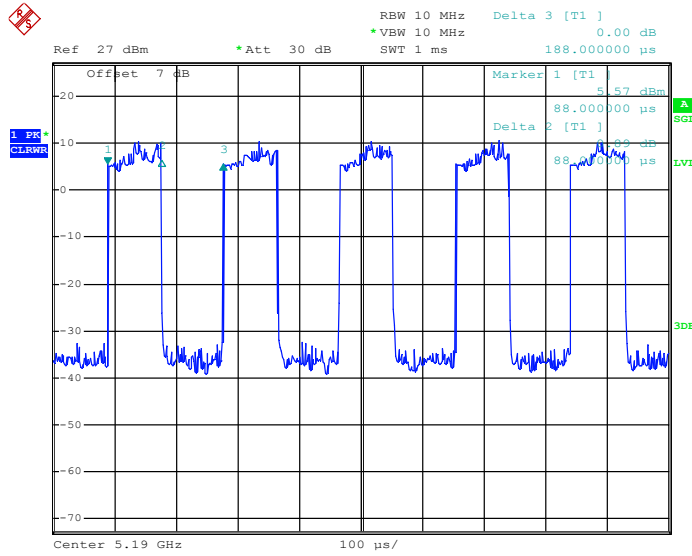
802.11n HT20 Antenna 1 + 2



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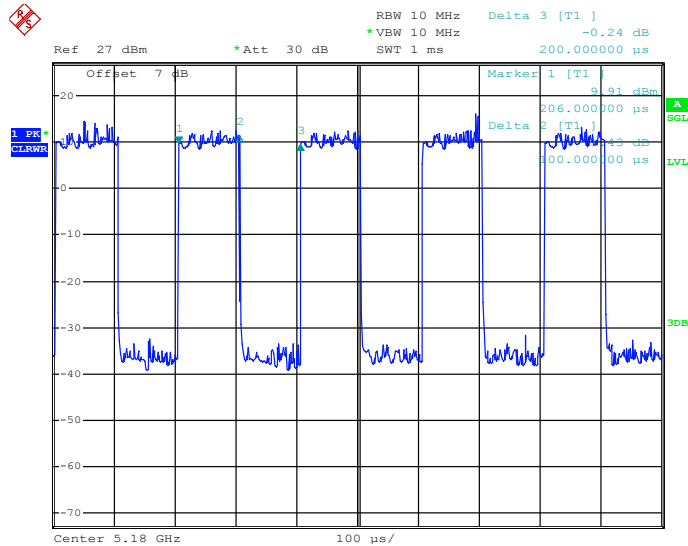


802.11n HT40 Antenna 1 + 2



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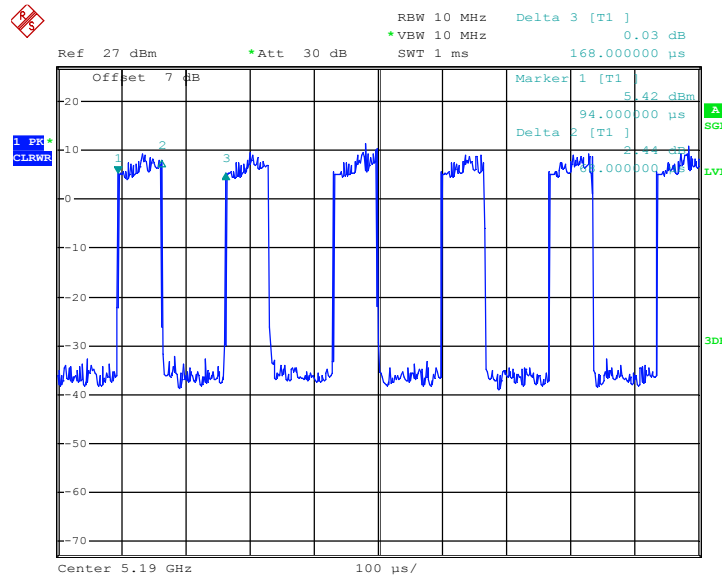
802.11ac VHT20 Antenna 1 + 2



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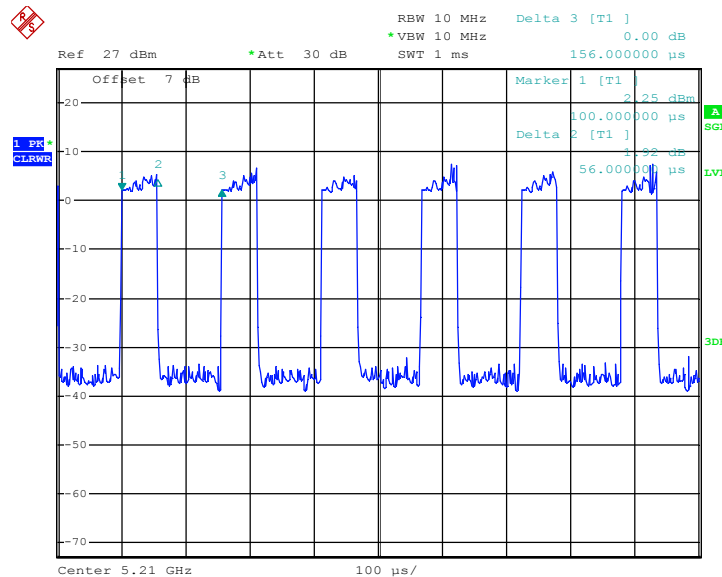


802.11ac VHT40 Antenna 1 + 2



Date: 29.MAR.2016 23:41:08

802.11ac VHT80 Antenna 1 + 2



Date: 29.MAR.2016 23:46:36