



FCC RF Test Report

APPLICANT : Lenovo(Shanghai) Electronics
Technology Co., Ltd.
EQUIPMENT : Portable Tablet Computer
BRAND NAME : Lenovo
MODEL NAME : Lenovo TB-8304F1
FCC ID : O57TB8304F1
STANDARD : FCC Part 15 Subpart C §15.247
CLASSIFICATION : (DTS) Digital Transmission System

This is a data re-used report which is only valid together with the original test report. The product was received on Jan. 09, 2018 and testing was completed on Mar. 28, 2018. 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.

Approved by: James Huang / Manager



NVLAP LAB CODE 600155-0

Sporton International (Kunshan) Inc.

***No.3-2 Ping-Xiang Rd, Kunshan Development Zone Kunshan City Jiangsu Province 215335
China***



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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR810905C	Rev. 01	Initial issue of report	Mar. 28, 2018



SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.1	15.247(b)	Power Output Measurement	$\leq 30\text{dBm}$	Pass	-
0	15.247(d)	Radiated Band Edges and Radiated Spurious Emission	15.209(a) & 15.247(d)	Pass	Under limit 3.01 dB at 2389.820 MHz
3.3	15.203 & 15.247(b)	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 Product Feature of Equipment Under Test

Product Feature	
Equipment	Portable Tablet Computer
Brand Name	Lenovo
Model Name	Lenovo TB-8304F1
FCC ID	O57TB8304F1
EUT supports Radios application	WLAN 2.4GHz 802.11b/g/n HT20 WLAN 5GHz 802.11a/n HT20/HT40 Bluetooth v3.0+EDR/ Bluetooth v4.0 LE/ Bluetooth v4.1 LE/ Bluetooth v4.2 LE
HW Version	Lenovo Tablet TB-8304F1
SW Version	TB-8304F1_RF01_180208
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

Standards-related Product Specification	
Tx/Rx Channel Frequency Range	2412 MHz ~ 2462 MHz
Maximum (Peak) Output Power to antenna	802.11b : 18.08 dBm (0.0643 W) 802.11g : 22.12 dBm (0.1629 W) 802.11n HT20 : 21.88 dBm (0.1542 W)
Antenna Type / Gain	IFA Antenna with gain 1.27 dBi
Type of Modulation	802.11b : DSSS (DBPSK / DQPSK / CCK) 802.11g/n : OFDM (BPSK / QPSK / 16QAM / 64QAM)

1.5 Component List

There are four samples under test, the differences of four samples are shown in the table below.

Based on the similarity of four samples, only choose sample 1 to perform full test.

Object	Sample 1	Sample 2
LPDDR3 EMCP	Samsung: KMQE60013M-B318 (2+16G)	Hynix: H9TQ17ABJTBCUR-KUM (2+16G)
PCB	CEE: A5e5b_MainboardPCB	Huashen: A5e5b_Mainboard PCB
Battery	Sunwoda: L16D1P34	SCUD: L16D1P34
speakerBox1	Xichundz: ZA2060AAA601USAA_Speaker Box_1511_FPC_Xichundz	Keysound: ZA2060AAA601USAA_Speaker Box_1511_FPC_Keysound
LCM	TXD: TXDT800CXPA-36	Starry: 2081080BH8021006-51F
Camera_Back	JSL: HS6283A1D-0P0J0	JSL: HS6283A1D-0P0J0
Camera_Front	C&T: V20672 V0	Brodsands: B02SF0319
Object	Sample 3	Sample 4
LPDDR3 EMCP	Samsung: KMFE60012M-B214 (1+16G)	Samsung: KMFE60012M-B214 (1+16G)
PCB	CEE: A5e5b_MainboardPCB	Huashen: A5e5b_Mainboard PCB
Battery	Sunwoda: L16D1P34	SCUD: L16D1P34
speakerBox1	Xichundz: ZA2060AAA601USAA_Speaker Box_1511_FPC_Xichundz	Keysound: ZA2060AAA601USAA_Speaker Box_1511_FPC_Keysound
LCM	TXD: TXDT800CXPA-36	Starry: 2081080BH8021006-51F
Camera_Back	JSL: HS6283A1D-0P0J0	JSL: HS6283A1D-0P0J0
Camera_Front	C&T: V20672 V0	Brodsands: B02SF0319

1.6 Modification of EUT

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



1.7 Re-use of Measured Data

1.7.1 Introduction Section

This application re-uses data collected on a similar device. The subject device of this application (Model: Lenovo TB-8304F1, FCC ID: O57TB8304F1) is electrically identical to the reference device (Model: Lenovo TB-8304F, FCC ID: O57TB8304F) for the portions of the circuitry corresponding to the data being re-used, as treated by KDB Publication 178919 D01.

1.7.2 Difference Section

For details concerning the similarity with respect to component placement, mechanical/electrical design etc., please refer to Product Equality Declaration..

The re-used RF data includes the following bands provided in Appendix D (Sporton RF Report No. FR810906C for the reference device Model: Lenovo TB-8304F, FCC ID: O57TB8304F)

1.7.3 Spot Check Verification Data Section

In order to confirm hardware similarity of the subject device with the reference device, spot check measurements were performed on the subject device for conducted power and radiated spurious emission, the test result were consistent with FCC ID: O57TB8304F.

Assertions concerning the similarity of these devices are based on representations by the applicant. The applicant accepts full responsibility for the validity of the similarity claim, and for the determination that verification test data are sufficient to support it.

1.7.4 Reference detail Section:

Equipment Class	Reference FCC ID	Folder Test/RF Exposure	Report Title/Section
DSS	O57TB8304F	Part15C(FR810906A)	All sections (except the conducted power and worse case of RSE) applicable
DTS (BLE)	O57TB8304F	Part15C(FR810906B)	All sections (except the conducted power and worse case of RSE) applicable
DTS (WLAN)	O57TB8304F	Part15C(FR810906C)	All sections (except the conducted power and worse case of RSE) applicable

1.8 Testing Location

Sporton International (Kunshan) Inc. is accredited to ISO 17025 by National Voluntary Laboratory Accreditation Program (NVLAP code: 600155-0) and the FCC designation No. is CN5013.

Test Site	Sporton International (Kunshan) Inc.		
Test Site Location	No.3-2 Ping-Xiang Rd, Kunshan Development Zone Kunshan City Jiangsu Province 215335 China TEL : +86-512-57900158 FAX : +86-512-57900958		
Test Site No.	Sporton Site No.		FCC Test Firm Registration No.
	TH01-KS	03CH03-KS	630927

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

1.9 Applicable Standards

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

- FCC Part 15 Subpart C §15.247
- FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v04
- 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: 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 three orthogonal panels, X, Y, Z. The worst cases were recorded in this report.

2.1 Carrier Frequency and Channel

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
2400-2483.5 MHz	1	2412	7	2442
	2	2417	8	2447
	3	2422	9	2452
	4	2427	10	2457
	5	2432	11	2462
	6	2437	-	-



2.2 Test Mode

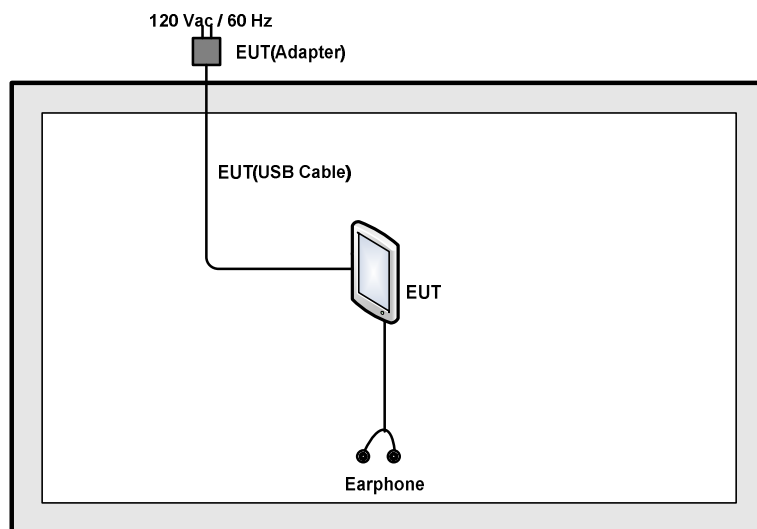
Final test mode of conducted test items and radiated spurious emissions are considering the modulation and worse data rates as below table.

Modulation	Data Rate
802.11n HT20	MCS0

Remark: For Radiated TCs, The tests were performed with Adapter 1, Earphone and USB Cable 1.

2.3 Connection Diagram of Test System

<WLAN Tx Mode>



2.4 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	Earphone	Lenovo	P121	N/A	Unshielded, 1.2m	N/A

2.5 EUT Operation Test Setup

For WLAN function, the engineering test program was provided and enabled to make EUT continuous transmit/receive.

3 Test Result

3.1 Output Power Measurement

3.1.1 Limit of Output Power

For systems using digital modulation in the 2400-2483.5MHz, the limit for peak output power is 30dBm. If transmitting antenna of directional gain greater than 6dBi are used the peak output power from the intentional radiator shall be reduced below the above stated value by the amount in dB that the directional gain of the antenna exceeds 6 dBi. In case of point-to-point operation, the limit has to be reduced by 1dB for every 3dB that the directional gain of the antenna exceeds 6dBi.

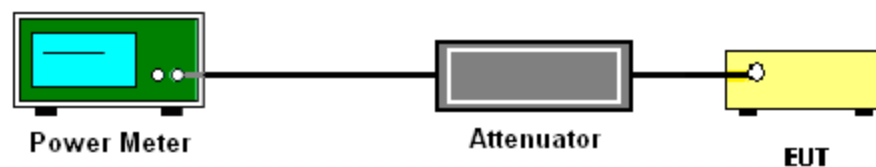
3.1.2 Measuring Instruments

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

3.1.3 Test Procedures

1. The testing follows the Measurement Procedure of FCC KDB No. 558074 DTS D01 Meas. Guidance v04 section 9.1.2 PKPM1 Peak power meter method.
2. The RF output of EUT was connected to the power meter by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Measure the conducted output power and record the results in the test report.

3.1.4 Test Setup



**3.1.5 Test Result of Peak Output Power**

2.4GHz Band										
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Peak Conducted Power (dBm)	Conducted Power Limit (dBm)	DG (dBi)	EIRP Power (dBm)	EIRP Power Limit (dBm)	Pass /Fail
11b	1Mbps	1	1	2412	17.78	30.00	1.27	19.05	36.00	Pass
11b	1Mbps	1	6	2437	18.08	30.00	1.27	19.35	36.00	Pass
11b	1Mbps	1	11	2462	18.03	30.00	1.27	19.30	36.00	Pass
11g	6Mbps	1	1	2412	22.03	30.00	1.27	23.30	36.00	Pass
11g	6Mbps	1	6	2437	22.12	30.00	1.27	23.39	36.00	Pass
11g	6Mbps	1	11	2462	21.95	30.00	1.27	23.22	36.00	Pass
HT20	MCS0	1	1	2412	21.73	30.00	1.27	23.00	36.00	Pass
HT20	MCS0	1	6	2437	21.88	30.00	1.27	23.15	36.00	Pass
HT20	MCS0	1	11	2462	21.81	30.00	1.27	23.08	36.00	Pass

**3.1.6 Test Result of Average output Power (Reporting Only)**

2.4GHz Band						
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Duty Factor (dB)	Average Conducted Power (dBm)
11b	1Mbps	1	1	2412	0.00	14.81
11b	1Mbps	1	6	2437	0.00	15.01
11b	1Mbps	1	11	2462	0.00	14.97
11g	6Mbps	1	1	2412	0.11	14.82
11g	6Mbps	1	6	2437	0.11	14.87
11g	6Mbps	1	11	2462	0.11	14.68
HT20	MCS0	1	1	2412	0.12	12.83
HT20	MCS0	1	6	2437	0.12	13.88
HT20	MCS0	1	11	2462	0.12	13.69

3.2 Radiated Band Edges and Spurious Emission Measurement

3.2.1 Limit of Radiated band edge and Spurious Emission Measurement

In any 100 kHz bandwidth outside the intentional radiator frequency band, all harmonics/spurious must be at least 20 dB below the highest emission level within the authorized band. If the output power of this device was measured by spectrum analyzer, the attenuation under this paragraph shall be 30 dB instead of 20 dB. In addition, radiated emissions which fall in the restricted bands must also comply with the limits as below.

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

3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

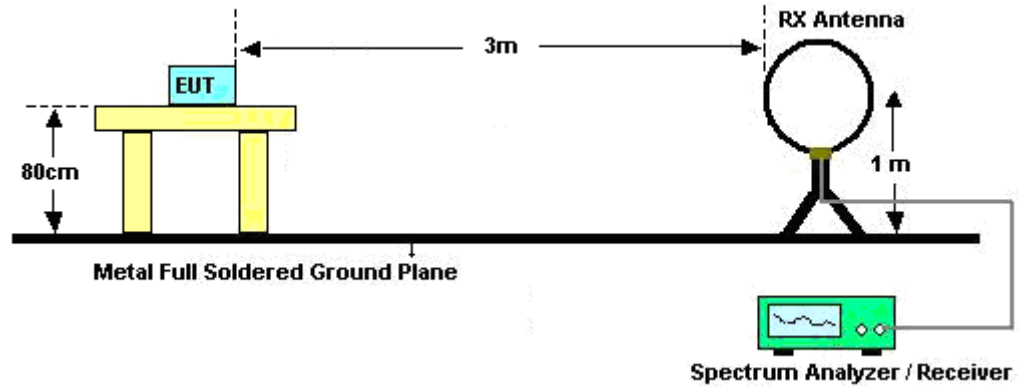
1. The testing follows FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v04.
2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level.
3. 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.
4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
5. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level
6. For measurement below 1GHz, If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.
7. Use the following spectrum analyzer settings:
 - (1) Span shall wide enough to fully capture the emission being measured;
 - (2) Set RBW=100 kHz for $f < 1$ GHz; VBW $\geq$ RBW; Sweep = auto; Detector function = peak; Trace = max hold;
 - (3) Set RBW = 1 MHz, VBW= 3MHz for $f \geq 1$ GHz for peak measurement.

For average measurement:

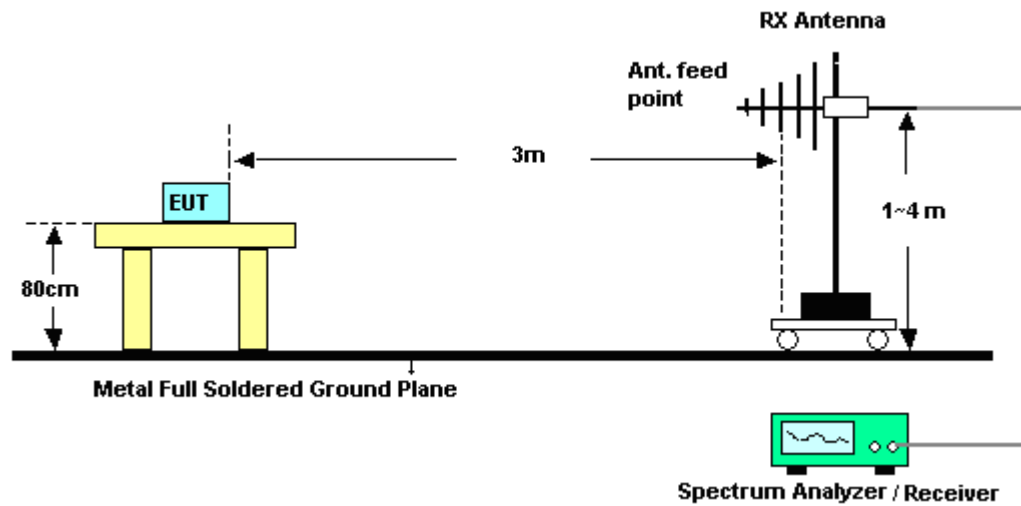
 - VBW = 10 Hz, when duty cycle is no less than 98 percent.
 - VBW $\geq 1/T$, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.

3.2.4 Test Setup

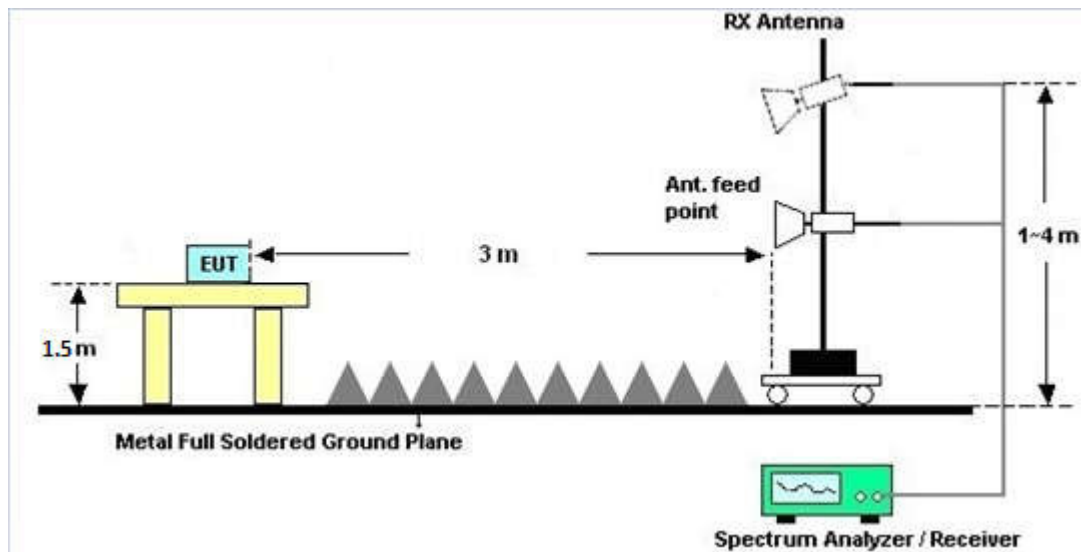
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



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

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

3.2.6 Test Result of Radiated Spurious at Band Edges

Please refer to Appendix A.

3.2.7 Duty Cycle

Please refer to Appendix B.

3.2.8 Test Result of Radiated Spurious Emission (30MHz ~ 10th Harmonic)

Please refer to Appendix A.



3.3 Antenna Requirements

3.3.1 Standard Applicable

If directional gain of transmitting antennas is greater than 6dBi, the power shall be reduced by the same level in dB comparing to gain minus 6dBi. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the rule.

3.3.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.

3.3.3 Antenna Gain

The antenna peak gain of EUT is less than 6 dBi. Therefore, it is not necessary to reduce maximum peak output power limit.



4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Pulse Power Sensor	Anritsu	MA2411B	0917070	300MHz~40GHz	Jan. 18, 2018	Mar. 28, 2018	Jan. 17, 2019	Conducted (TH01-KS)
Power Meter	Anritsu	ML2495A	1005002	50MHz Bandwidth	Jan. 18, 2018	Mar. 28, 2018	Jan. 17, 2019	Conducted (TH01-KS)
EMI Test Receiver	Keysight	N9038A	MY56400004	3Hz~8.5GHz; Max 30dBm	Oct. 19, 2017	Mar. 15, 2018	Oct. 18, 2018	Radiation (03CH03-KS)
EXA Spectrum Analyzer	Keysight	N9010A	MY55150244	10Hz~44GHz	Apr. 18, 2017	Mar. 15, 2018	Apr. 17, 2018	Radiation (03CH03-KS)
Loop Antenna	R&S	HFH2-Z2	100321	9kHz~30MHz	Oct. 22, 2017	Mar. 15, 2018	Oct. 21, 2018	Radiation (03CH03-KS)
Bilog Antenna	TeseQ	CBL6112D	35406	25MHz~2GHz	Apr. 22, 2017	Mar. 15, 2018	Apr. 21, 2018	Radiation (03CH03-KS)
Horn Antenna	Schwarzbeck	BBHA9120D	9120D-1356	1GHz~18GHz	Apr. 22, 2017	Mar. 15, 2018	Apr. 21, 2018	Radiation (03CH03-KS)
SHF-EHF Horn	Schwarzbeck	BBHA 9170	BBHA170249	15GHz~40GHz	Feb. 14, 2018	Mar. 15, 2018	Feb. 13, 2019	Radiation (03CH03-KS)
Amplifier	com-power	PA-103A	161069	1MHz~1000MHz / 32 dB	Apr. 18, 2017	Mar. 15, 2018	Apr. 17, 2018	Radiation (03CH03-KS)
Amplifier	MITEQ	TTA1840-35-HG	1887435	18GHz~40GHz	Oct. 12, 2017	Mar. 15, 2018	Oct. 11, 2018	Radiation (03CH03-KS)
high gain Amplifier	MITEQ	AMF-7D-0010 1800-30-10P	2025788	1GHz~18GHz	Apr. 18, 2017	Mar. 15, 2018	Apr. 17, 2018	Radiation (03CH03-KS)
Amplifier	Agilent	8449B	3008A02370	1GHz~26.5GHz	Oct. 12, 2017	Mar. 15, 2018	Oct. 11, 2018	Radiation (03CH03-KS)
AC Power Source	Chroma	61601	F104090004	N/A	NCR	Mar. 15, 2018	NCR	Radiation (03CH03-KS)
Turn Table	ChamPro	EM 1000-T	060762-T	0~360 degree	NCR	Mar. 15, 2018	NCR	Radiation (03CH03-KS)

NCR: No Calibration Required



5 Uncertainty of Evaluation

Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_c(y)$)	4.6dB
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Uncertainty of Radiated Emission Measurement (1000 MHz ~ 18000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_c(y)$)	4.5dB
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Uncertainty of Radiated Emission Measurement (18000 MHz ~ 40000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_c(y)$)	4.5dB
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Appendix A. Radiated Spurious Emission

2.4GHz 2400~2483.5MHz

WIFI 802.11n HT20 (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preampl	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)
802.11n HT20 CH 01 2412MHz		2389.95	65.15	-8.85	74	62.34	31.3	5.65	34.14	104	125	P	H
		2389.82	50.99	-3.01	54	48.18	31.3	5.65	34.14	104	125	A	H
	*	2410	103.36	-	-	100.52	31.33	5.67	34.16	104	125	P	H
	*	2410	96.28	-	-	93.44	31.33	5.67	34.16	104	125	A	H
		2389.95	62.58	-11.42	74	59.77	31.3	5.65	34.14	294	84	P	V
		2389.95	48.14	-5.86	54	45.33	31.3	5.65	34.14	294	84	A	V
	*	2410	103.18	-	-	100.34	31.33	5.67	34.16	294	84	P	V
	*	2412	95.83	-	-	92.99	31.33	5.67	34.16	294	84	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



2.4GHz 2400~2483.5MHz
WIFI 802.11n HT20 (Harmonic @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT20		4824	44.89	-29.11	74	62.69	35.65	7.86	61.31	100	360	P	H
CH 01 2412MHz		4824	44.28	-29.72	74	62.08	35.65	7.86	61.31	100	360	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Emission below 1GHz

2.4GHz WIFI 802.11n HT20 (LF)

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)
2.4GHz 802.11n HT20 LF		30	23.24	-16.76	40	29.7	25	0.57	32.03	100	0	P	H
		108.57	18.23	-25.27	43.5	31.29	17.79	1.06	31.91	-	-	P	H
		377.26	20.59	-25.41	46	28.32	21.07	2	30.8	-	-	P	H
		581.93	25.32	-20.68	46	27.79	24.71	2.6	29.78	-	-	P	H
		731.31	25.5	-20.5	46	26	25.44	2.8	28.74	-	-	P	H
		850.62	26.84	-19.16	46	25.39	26.31	3.05	27.91	-	-	P	H
		31.94	30.12	-9.88	40	37.67	23.88	0.6	32.03	-	-	P	V
		45.52	32.74	-7.26	40	48.23	15.95	0.67	32.11	100	0	P	V
		89.17	24.46	-19.04	43.5	40.8	14.72	0.97	32.03	-	-	P	V
		107.6	25.82	-17.68	43.5	39.01	17.68	1.05	31.92	-	-	P	V
		751.68	26.19	-19.81	46	26.32	25.71	2.81	28.65	-	-	P	V
		995.15	27.17	-26.83	54	23.48	27.35	3.24	26.9	-	-	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.
!	Test result is not under limit 6dB
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.	
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)

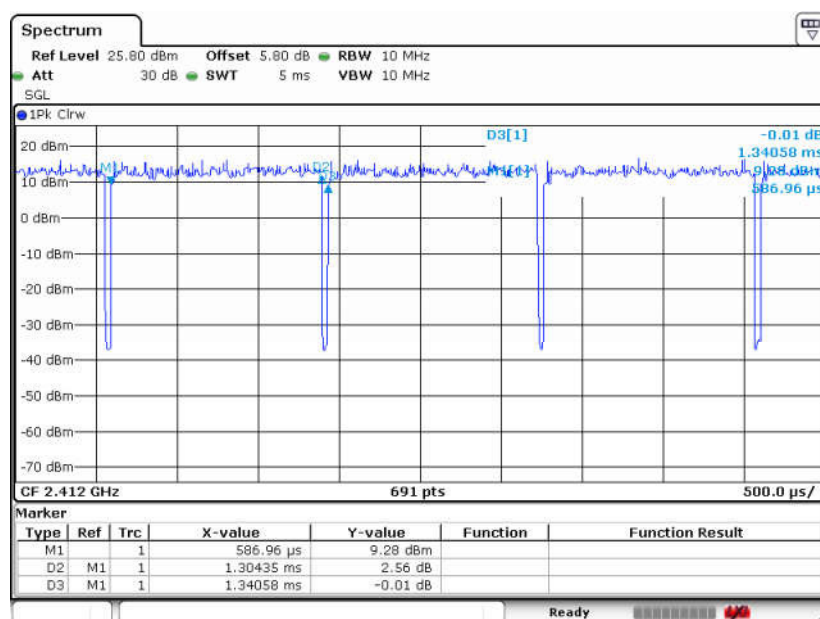
= -10.46(dB)

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

Appendix B. Duty Cycle Plots

Band	Duty Cycle(%)	T(ms)	1/T(kHz)	VBW Setting
802.11n HT20	97.30	1.304	0.767	1kHz

802.11n HT20





Appendix D. Reference Report

Please refer to Sporton report number FR810906C which is issued separately.