



FCC RF Test Report

APPLICANT : Tabletop Media, LLC d/b/a Ziosk
EQUIPMENT : Ziosk Aurizon
BRAND NAME : Ziosk
MODEL NAME : Z500
FCC ID : XOX-Z500
STANDARD : FCC Part 15 Subpart E §15.407
CLASSIFICATION : (NII) Unlicensed National Information Infrastructure

The product was received on Jan. 10, 2020 and testing was completed on Mar. 14, 2020. We, Sporton International (ShenZhen) 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 (ShenZhen) Inc., the test report shall not be reproduced except in full.

Reviewed by: Derreck Chen / Supervisor

Approved by: Eric Shih / Manager



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People's Republic of China***



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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR011014F	Rev. 01	Initial issue of report	Mar. 25, 2020



SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.1	15.407(a)	Maximum Conducted Output Power	≤ 30 dBm	Pass	-
3.2	15.407(b)	Unwanted Emissions	15.407(b)(4)(i) & 15.209(a)	Pass	Under limit 4.11 dB at 17235.000 MHz
3.3	15.407(c)	Automatically Discontinue Transmission	Discontinue Transmission	Pass	-
3.4	15.203 & 15.407(a)	Antenna Requirement	N/A	Pass	-

Declaration of Conformity:

The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.

Comments and Explanations:

The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.



1 General Description

1.1 Applicant

Tabletop Media, LLC d/b/a Ziosk
12404 Park Central Dr, Suite 350, Dallas, TX 75251

1.2 Manufacturer

SMTC de Chihuahua SA. DE C.V.
Washington 3701 building 20. Parque Industrial Las Americas, Chihuahua, Chih. 31200

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	Ziosk Aurizon
Brand Name	Ziosk
Model Name	Z500
FCC ID	XOX-Z500
EUT supports Radios application	NFC WLAN 2.4GHz 802.11b/g/n HT20/HT40 WLAN 5GHz 802.11a/n HT20/HT40 WLAN 5GHz 802.11ac VHT20/VHT40/VHT80 Bluetooth BR/EDR/LE
HW Version	5.1.R
SW Version	Android 5.1.1
EUT Stage	Identical Prototype

Remark:

1. The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.
2. This is a variant report for Z500. The change note could be referred to the product equality declaration which is exhibit separately. Based on the similarity between current and previous project, only the related test cases from original test report (Sporton Report Number FR820812F) were verified for the differences.

1.4 Product Specification of Equipment Under Test

Standards-related Product Specification			
Tx/Rx Channel Frequency Range	5745 MHz ~ 5825 MHz		
Maximum Output Power	<5745 MHz ~ 5825 MHz> 802.11a : 19.43 dBm / 0.0877 W MIMO<Ant.1+2>: 802.11n HT20 : 17.81 dBm / 0.0604 W 802.11n HT40 : 17.48 dBm / 0.0560 W 802.11ac VHT20: 17.76 dBm / 0.0597 W 802.11ac VHT40: 17.38 dBm / 0.0547 W 802.11ac VHT80: 15.45 dBm / 0.0351 W		
Type of Modulation	802.11a/n : OFDM (BPSK / QPSK / 16QAM / 64QAM) 802.11ac : OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM)		
Antenna Type / Gain	<Ant. 1> : PIFA Antenna with gain 2.46 dBi <Ant. 2> : PIFA Antenna with gain 3.69 dBi		
Antenna Function Description		Ant. 1	Ant. 2
	802.11 a/n/ac SISO	V	V
	802.11 n/ac MIMO	V	

Note: For 802.11n HT20 / ac VHT20 and 802.11n HT40 / ac VHT40 mode, the whole testing have assessed only 802.11 n HT20/ HT40 by referring to their maximum conducted power.

1.5 Modification of EUT

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



1.6 Testing Location

Sporton International (Shenzhen) Inc. is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.01.

Test Firm	Sporton International (Shenzhen) Inc.		
Test Site Location	1/F, 2/F, Bldg 5, Shiling Industrial Zone, Xinwei Village, Xili, Nanshan, Shenzhen, 518055 People's Republic of China TEL: +86-755-86379589 FAX: +86-755-86379595		
Test Site No.	Sporton Site No.	FCC Designation No.	FCC Test Firm Registration No.
	TH01-SZ	CN1256	421272

Test Firm	Sporton International (Shenzhen) Inc.		
Test Site Location	No. 3 Bldg the third floor of south, Shahe River west, Fengzeyuan Warehouse, Nanshan Shenzhen, 518055 People's Republic of China TEL: +86-755-33202398		
Test Site No.	Sporton Site No.	FCC Designation No.	FCC Test Firm Registration No.
	03CH02-SZ	CN1256	421272

1.7 Test Software

Item	Site	Manufacture	Name	Version
1.	03CH02-SZ	AUDIX	E3	6.2009-8-24a



1.8 Applicable Standards

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

- ♦ 47 CFR Part 15 Subpart E
- ♦ FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.
- ♦ FCC KDB 662911 D01 Multiple Transmitter Output v02r01.
- ♦ 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

- a. 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: radiation 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 (Y plane) were recorded in this report.

2.1 Carrier Frequency and Channel

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
5725-5850 MHz Band 4 (U-NII-3)	149	5745	157	5785
	151 [*]	5755	159 [*]	5795
	153	5765	161	5805
	155 [#]	5775	165	5825

Note:

1. The above Frequency and Channel in "^{*}" were 802.11n HT40 and 802.11ac VHT40.
2. The above Frequency and Channel in "[#]" were 802.11ac VHT80.



2.2 Test Mode

Final test modes are considering the modulation and worse data rates as below table.

Single Mode

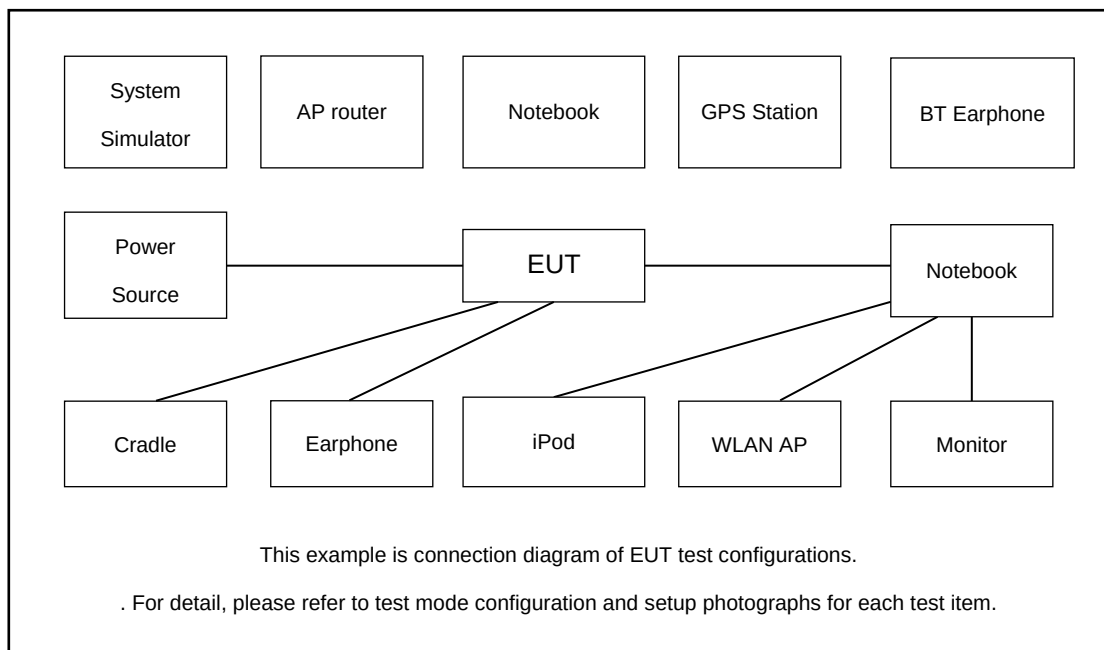
Modulation	Data Rate
802.11a	6 Mbps

MIMO Mode

Modulation	Data Rate
802.11n HT20	MCS0
802.11n HT40	MCS0
802.11ac VHT80	MCS0

Ch. #		Band IV : 5725-5850 MHz			
		802.11a	802.11n HT20	802.11n HT40	802.11ac VHT80
L	Low	149	149	151	-
M	Middle	157	157	-	155
H	High	165	165	159	-

2.3 Connection Diagram of Test System



2.4 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	BT Base Station	Anritus	8852B	N/A	N/A	Unshielded,1.8m

2.5 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 WLAN AP under large package sizes transmission.

3 Test Result

3.1 Maximum Conducted Output Power Measurement

3.1.1 Limit of Maximum Conducted Output Power

For the band 5.725–5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W.

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.

3.1.2 Measuring Instruments

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

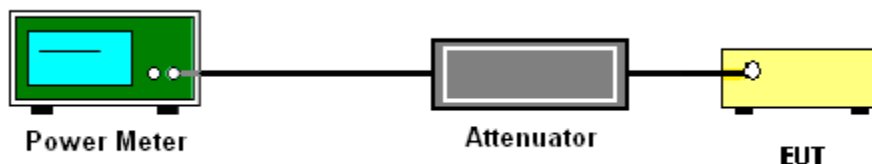
3.1.3 Test Procedures

The testing follows Method PM of FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.

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.

3.1.4 Test Setup



3.1.5 Test Result of Maximum Conducted Output Power

Please refer to Appendix A.

3.2 Unwanted Emissions Measurement

This section is to measure unwanted emissions through radiated measurement for band edge spurious emissions and out of band emissions measurement.

3.2.1 Limit of Unwanted Emissions

- (1) For transmitters operating in the 5.725-5.85 GHz band:

15.407(b)(4)(i) All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

- (2) Unwanted spurious emissions fallen in restricted bands shall comply with the general field strength limits 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



EIRP (dBm)	Field Strength at 3m (dBμV/m)
- 27	68.2

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

$$\text{EIRP} = E_{\text{Meas}} + 20\log(d_{\text{Meas}}) - 104.7$$

where

EIRP is the equivalent isotropically radiated power, in dBm

E_{Meas} is the field strength of the emission at the measurement distance, in dBμV/m

d_{Meas} is the measurement distance, in m

3.2.2 Measuring Instruments

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



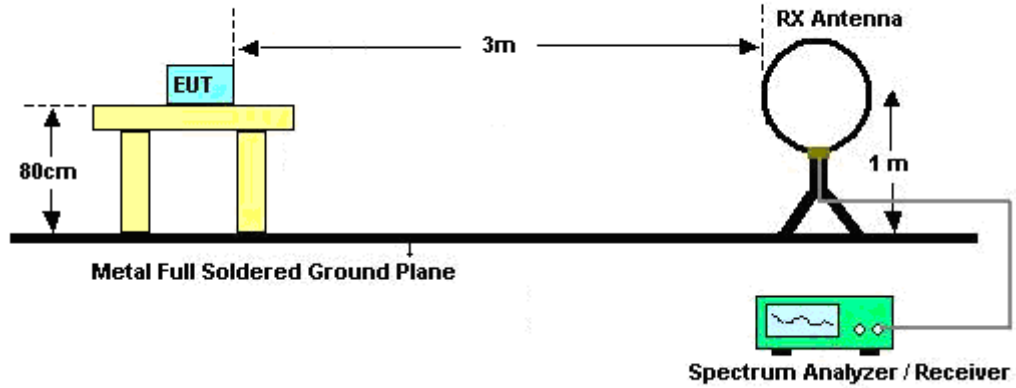
3.2.3 Test Procedures

1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.
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 $\geq$ 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 $\geq$ 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.
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.

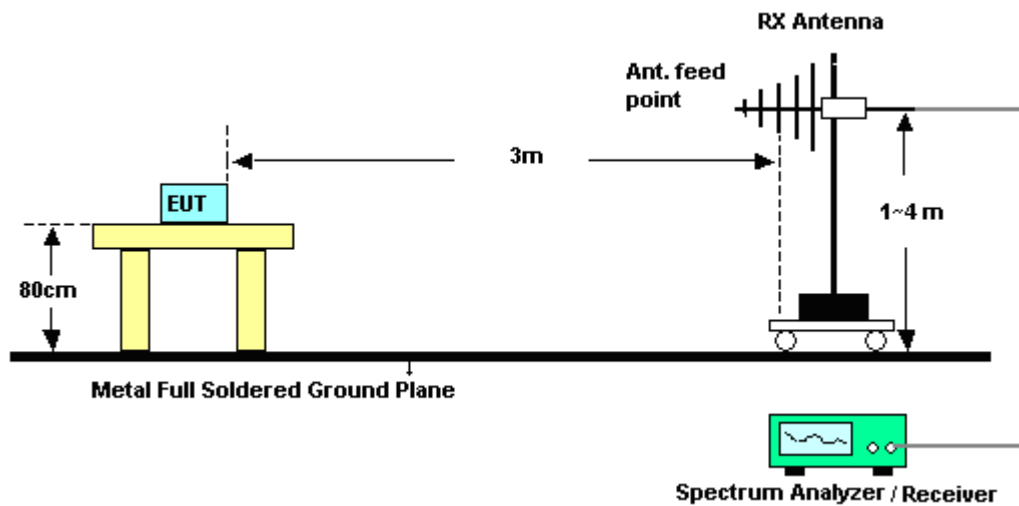


3.2.4 Test Setup

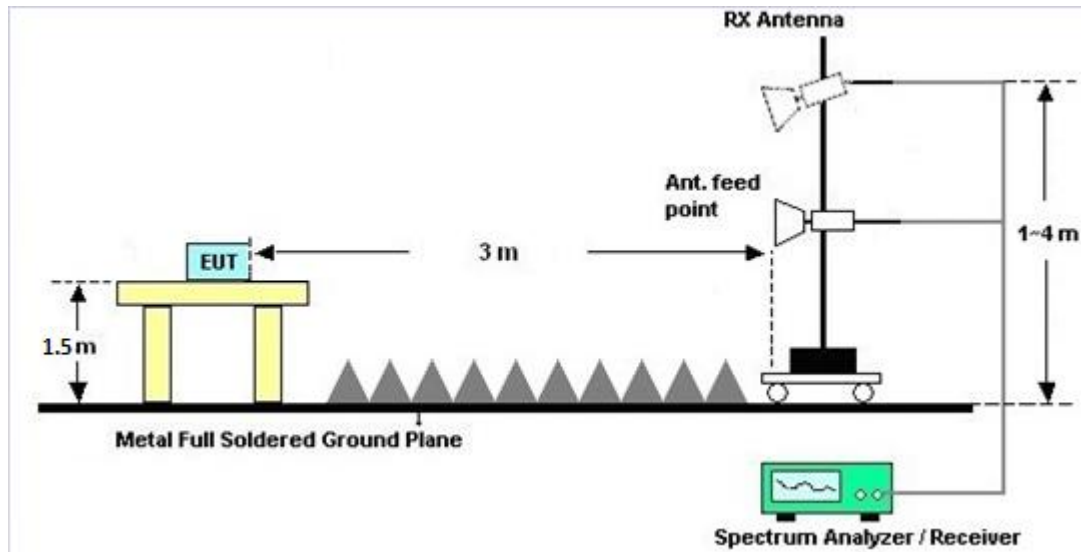
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz





3.2.5 Test Results of Radiated 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 was not reported.

There is a comparison data of both open-field test site and semi-Anechoic chamber, and the result came out very similar.

3.2.6 Test Result of Radiated Band Edges

Please refer to Appendix C.

3.2.7 Duty Cycle

Please refer to Appendix D.

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

Please refer to Appendix C.



3.3 Automatically Discontinue Transmission

3.3.1 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.

3.3.2 Measuring Instruments

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

3.3.3 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.

3.4 Antenna Requirements

3.4.1 Standard Applicable

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.

3.4.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.

3.4.3 Antenna Gain

<CDD Modes >

FCC KDB 662911 D01 Multiple Transmitter Output v02r01

For CDD transmissions, directional gain is calculated as

Directional gain = G_{ANT} + 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.

For power, the directional gain G_{ANT} is set equal to the antenna having the highest gain, i.e., F)2)f)i).

For PSD, the directional gain calculation is following F)2)f)ii) of KDB 662911 D01 v02r01.

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.

<CDD Modes>						
			DG for Power (dBi)	DG for PSD (dBi)	Power Limit Reduction (dB)	PSD Limit Reduction (dB)
	Ant. 1 (dBi)	Ant. 2 (dBi)				
Band IV	2.46	3.69	3.69	6.11	0.00	0.11

$Power\ Limit\ Reduction = DG(Power) - 6dBi, (min = 0)$

$PSD\ Limit\ Reduction = DG(PSD) - 6dBi, (min = 0)$



4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSV40	101040	10Hz~40GHz	Nov. 02, 2019	Feb. 29, 2020	Nov. 01, 2020	Conducted (TH01-KS)
Pulse Power Sensor	Anritsu	MA2411B	0917070	300MHz~40GHz	Jan. 13, 2020	Feb. 29, 2020	Jan. 12, 2021	Conducted (TH01-KS)
Power Meter	Anritsu	ML2495A	1005002	50MHz Bandwidth	Jan. 13, 2020	Feb. 29, 2020	Jan. 12, 2021	Conducted (TH01-KS)
EXA Spectrum Analyzer	KEYSIGHT	N9010A	MY55150213	10Hz~44GHz	Apr. 19, 2019	Mar. 07, 2020~ Mar. 14, 2020	Apr. 18, 2020	Radiation (03CH02-SZ)
Loop Antenna	R&S	HFH2-Z2	100354	9kHz~30MHz	May 29, 2018	Mar. 07, 2020~ Mar. 14, 2020	May 28, 2020	Radiation (03CH02-SZ)
Bilog Antenna	TeseQ	CBL6112D	35407	30MHz~2GHz	Jul. 19, 2019	Mar. 07, 2020~ Mar. 14, 2020	Jul. 18, 2020	Radiation (03CH02-SZ)
Double Ridge Horn Antenna	ETS-Lindgren	3117	00119436	1GHz~18GHz	Aug. 27, 2019	Mar. 07, 2020~ Mar. 14, 2020	Aug. 26, 2020	Radiation (03CH02-SZ)
HF Amplifier	MITEQ	TTA1840-35-HG	1871923	18GHz~40GHz	Jul. 22, 2019	Mar. 07, 2020~ Mar. 14, 2020	Jul. 21, 2020	Radiation (03CH02-SZ)
SHF-EHF Horn	com-power	AH-840	101071	18GHz~40GHz	Apr. 18, 2019	Mar. 07, 2020~ Mar. 14, 2020	Apr. 17, 2020	Radiation (03CH02-SZ)
LF Amplifier	Burgeon	BPA-530	102211	0.01~3000Mhz	Oct. 18, 2019	Mar. 07, 2020~ Mar. 14, 2020	Oct. 17, 2020	Radiation (03CH02-SZ)
HF Amplifier	MITEQ	AMF-7D-0010 1800-30-10P-R	1943528	1GHz~18GHz	Oct. 18, 2019	Mar. 07, 2020~ Mar. 14, 2020	Oct. 17, 2020	Radiation (03CH02-SZ)
HF Amplifier	KEYSIGHT	83017A	MY53270105	0.5GHz~26.5GHz	Oct. 18, 2019	Mar. 07, 2020~ Mar. 14, 2020	Oct. 17, 2020	Radiation (03CH02-SZ)
AC Power Source	Chroma	61601	616010002470	N/A	NCR	Mar. 07, 2020~ Mar. 14, 2020	NCR	Radiation (03CH02-SZ)
Turn Table	Chaintek	T-200	N/A	0~360 degree	NCR	Mar. 07, 2020~ Mar. 14, 2020	NCR	Radiation (03CH02-SZ)
Antenna Mast	Chaintek	MBS-400	N/A	1 m~4 m	NCR	Mar. 07, 2020~ Mar. 14, 2020	NCR	Radiation (03CH02-SZ)

NCR: No Calibration Required

5 Uncertainty of Evaluation

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI 63.10-2013. All the measurement uncertainty value were shown with a coverage $K=2$ to indicate 95% level of confidence. The measurement data show herein meets or exceeds the CISPR measurement uncertainty values specified in CISPR 16-4-2 and can be compared directly to specified limit to determine compliance.

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

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.0 dB
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Uncertainty of Radiated Emission Measurement (1000 MHz ~ 18000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.0 dB
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Uncertainty of Radiated Emission Measurement (18000 MHz ~ 40000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	4.4 dB
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Appendix A. Conducted Test Results

Report Number : FR011014F

Test Engineer:	Sam Zhang	Temperature:	21~25	°C
Test Date:	2020/2/29	Relative Humidity:	51~54	%

TEST RESULTS DATA
Average Power Table

Band IV														
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	6Mbps	1	149	5745	0.08	0.08	18.93	19.14		30.00	30.00	2.46	3.69	Pass
11a	6Mbps	1	157	5785	0.08	0.08	19.43	19.31		30.00	30.00	2.46	3.69	Pass
11a	6Mbps	1	165	5825	0.08	0.08	19.39	19.38		30.00	30.00	2.46	3.69	Pass
HT20	MCS0	2	149	5745	0.10	0.10	14.42	15.15	17.81	30.00		3.69		Pass
HT20	MCS0	2	157	5785	0.10	0.10	14.11	14.72	17.44	30.00		3.69		Pass
HT20	MCS0	2	165	5825	0.10	0.10	14.12	14.71	17.44	30.00		3.69		Pass
HT40	MCS0	2	151	5755	0.08	0.08	14.07	14.83	17.48	30.00		3.69		Pass
HT40	MCS0	2	159	5795	0.08	0.08	13.62	14.30	16.99	30.00		3.69		Pass
VHT20	MCS0	2	149	5745	0.10	0.10	14.35	15.11	17.76	30.00		3.69		Pass
VHT20	MCS0	2	157	5785	0.10	0.10	14.04	14.63	17.36	30.00		3.69		Pass
VHT20	MCS0	2	165	5825	0.10	0.10	14.00	14.61	17.33	30.00		3.69		Pass
VHT40	MCS0	2	151	5755	0.08	0.10	13.98	14.73	17.38	30.00		3.69		Pass
VHT40	MCS0	2	159	5795	0.08	0.10	13.57	14.16	16.89	30.00		3.69		Pass
VHT80	MCS0	2	155	5775	0.08	0.08	12.09	12.76	15.45	30.00		3.69		Pass



Appendix B. Radiated Spurious Emission

Band 4 - 5725~5850MHz

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 149 5745MHz		5626	47.65	-20.55	68.2	38.4	31.77	10.58	33.1	296	32	P	H
		5695	51.09	-50.42	101.51	41.6	32	10.59	33.1	296	32	P	H
		5716	59.73	-49.95	109.68	50.19	32.03	10.61	33.1	296	32	P	H
		5724.6	62.93	-58.36	121.29	53.35	32.07	10.61	33.1	296	32	P	H
	*	5745	105.29	-	-	95.67	32.1	10.62	33.1	296	32	P	H
		5745	98.98	-	-	89.36	32.1	10.62	33.1	296	32	A	H
		5603.2	46.21	-21.99	68.2	36.95	31.8	10.56	33.1	254	306	P	V
		5688.8	47.55	-49.39	96.94	38.06	32	10.59	33.1	254	306	P	V
		5720	53.3	-57.5	110.8	43.72	32.07	10.61	33.1	254	306	P	V
		5723.2	55.49	-62.61	118.1	45.91	32.07	10.61	33.1	254	306	P	V
	*	5745	95.26	-	-	85.64	32.1	10.62	33.1	254	306	P	V
		5745	89.01	-	-	79.39	32.1	10.62	33.1	254	306	A	V



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)
802.11a CH 157 5785MHz		5646.8	47.91	-20.29	68.2	38.7	31.73	10.58	33.1	287	348	P	H
		5690.4	48.15	-49.97	98.12	38.66	32	10.59	33.1	287	348	P	H
		5717.6	48.62	-61.51	110.13	39.04	32.07	10.61	33.1	287	348	P	H
		5721.6	48.73	-65.72	114.45	39.15	32.07	10.61	33.1	287	348	P	H
	*	5785	105.03	-	-	95.32	32.17	10.64	33.1	287	348	P	H
		5785	97.36	-	-	87.65	32.17	10.64	33.1	287	348	A	H
		5852.2	46.93	-70.25	117.18	36.95	32.4	10.68	33.1	287	348	P	H
		5859	47.6	-62.08	109.68	37.56	32.43	10.71	33.1	287	348	P	H
		5883.2	48.27	-50.84	99.11	38.19	32.47	10.71	33.1	287	348	P	H
		5937	48.28	-19.92	68.2	37.97	32.63	10.78	33.1	287	348	P	H
		5615.8	46.88	-21.32	68.2	37.65	31.77	10.56	33.1	287	265	P	V
		5680	47.22	-43.22	90.44	37.88	31.85	10.59	33.1	287	265	P	V
		5704.6	45.4	-61.09	106.49	35.86	32.03	10.61	33.1	287	265	P	V
		5721.6	46.05	-68.4	114.45	36.47	32.07	10.61	33.1	287	265	P	V
	*	5785	95.08	-	-	85.37	32.17	10.64	33.1	287	265	P	V
		5785	89.24	-	-	79.53	32.17	10.64	33.1	287	265	A	V
		5851.4	46.23	-72.78	119.01	36.25	32.4	10.68	33.1	287	265	P	V
		5875	47.35	-57.85	105.2	37.27	32.47	10.71	33.1	287	265	P	V
		5900	48.04	-38.62	86.66	37.89	32.5	10.75	33.1	287	265	P	V
		5932.8	47.62	-20.58	68.2	37.34	32.63	10.75	33.1	287	265	P	V



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)
802.11a CH 165 5825MHz	*	5825	104.97	-	-	95.06	32.33	10.68	33.1	289	30	P	H
	*	5825	98.87	-	-	88.96	32.33	10.68	33.1	289	30	A	H
		5851.4	60.82	-58.19	119.01	50.84	32.4	10.68	33.1	289	30	P	H
		5856.8	57.01	-53.29	110.3	46.97	32.43	10.71	33.1	289	30	P	H
		5890.6	48.93	-44.69	93.62	38.82	32.5	10.71	33.1	289	30	P	H
		5937.6	48.94	-19.26	68.2	38.63	32.63	10.78	33.1	289	30	P	H
	*	5825	96.6	-	-	86.69	32.33	10.68	33.1	285	267	P	V
	*	5825	90.03	-	-	80.12	32.33	10.68	33.1	285	267	A	V
		5850.2	47.24	-74.5	121.74	37.26	32.4	10.68	33.1	285	267	P	V
		5856.6	47.92	-62.43	110.35	37.88	32.43	10.71	33.1	285	267	P	V
		5899.6	47	-39.96	86.96	36.85	32.5	10.75	33.1	285	267	P	V
		5946.4	47.92	-20.28	68.2	37.54	32.7	10.78	33.1	285	267	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 4 5725~5850MHz

WIFI 802.11a (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)
802.11a CH 149 5745MHz		11490	49.61	-24.39	74	47.03	40.07	15.12	52.61	160	360	P	H
		17235	64.09	-4.11	68.2	53.69	40.33	22.6	52.53	160	0	P	H
		11490	48.52	-25.48	74	45.94	40.07	15.12	52.61	163	196	P	V
		17235	55.06	-13.14	68.2	44.66	40.33	22.6	52.53	160	0	P	V
802.11a CH 157 5785MHz		11570	49.44	-24.56	74	46.99	39.9	15.18	52.63	186	156	P	H
		17355	61.2	-7	68.2	49.94	40.95	22.96	52.65	189	143	P	H
		11570	48.74	-25.26	74	46.29	39.9	15.18	52.63	175	198	P	V
		17355	55.11	-13.09	68.2	43.85	40.95	22.96	52.65	189	185	P	V
802.11a CH 165 5825MHz		11650	47.69	-26.31	74	45.51	39.6	15.24	52.66	156	347	P	H
		17475	51.2	-17	68.2	39.16	41.5	23.31	52.77	150	360	P	H
		11650	47.79	-26.21	74	45.61	39.6	15.24	52.66	186	42	P	V
		17475	50.69	-17.51	68.2	38.65	41.5	23.31	52.77	175	175	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 4 5725~5850MHz

WIFI 802.11n HT20 (Band Edge @ 3m)

WIFI Ant. 1+2	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 CH 149 5745MHz		5600.4	47.82	-20.38	68.2	38.56	31.8	10.56	33.1	300	335	P	H
		5694	49.08	-51.7	100.78	39.59	32	10.59	33.1	300	335	P	H
		5705	49.85	-56.75	106.6	40.31	32.03	10.61	33.1	300	335	P	H
		5724.2	52.8	-67.58	120.38	43.22	32.07	10.61	33.1	300	335	P	H
	*	5745	103.02	-	-	93.4	32.1	10.62	33.1	300	335	P	H
		5745	95.93	-	-	86.31	32.1	10.62	33.1	300	335	A	H
		5653.6	47.04	-23.83	70.87	37.86	31.7	10.58	33.1	280	304	P	V
		5716.4	47.53	-62.26	109.79	37.99	32.03	10.61	33.1	280	304	P	V
		5723.4	47.47	-71.08	118.55	37.89	32.07	10.61	33.1	280	304	P	V
	*	5745	96.29	-	-	86.67	32.1	10.62	33.1	280	304	P	V
		5745	89.51	-	-	79.89	32.1	10.62	33.1	280	304	A	V



WIFI Ant. 1+2	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 CH 157 5785MHz		5623.8	47.92	-20.28	68.2	38.67	31.77	10.58	33.1	288	28	P	H
		5692.8	46.98	-52.91	99.89	37.49	32	10.59	33.1	288	28	P	H
		5710	48.28	-59.72	108	38.74	32.03	10.61	33.1	288	28	P	H
		5721.2	47.69	-65.85	113.54	38.11	32.07	10.61	33.1	288	28	P	H
	*	5785	102.5	-	-	92.79	32.17	10.64	33.1	288	28	P	H
		5785	95.33	-	-	85.62	32.17	10.64	33.1	288	28	A	H
		5852.4	46.8	-69.93	116.73	36.82	32.4	10.68	33.1	288	28	P	H
		5864.4	48.96	-59.21	108.17	38.92	32.43	10.71	33.1	288	28	P	H
		5892.6	47.28	-44.86	92.14	37.17	32.5	10.71	33.1	288	28	P	H
		5928.2	48.22	-19.98	68.2	37.94	32.63	10.75	33.1	288	28	P	H
		5637.2	46.35	-21.85	68.2	37.14	31.73	10.58	33.1	106	151	P	V
		5657.4	46.54	-27.16	73.7	37.36	31.7	10.58	33.1	106	151	P	V
		5703.8	45.94	-60.33	106.27	36.4	32.03	10.61	33.1	106	151	P	V
		5722.2	45	-70.82	115.82	35.42	32.07	10.61	33.1	106	151	P	V
	*	5785	95.42	-	-	85.71	32.17	10.64	33.1	106	151	P	V
		5785	87.24	-	-	77.53	32.17	10.64	33.1	106	151	A	V
		5854.4	47.06	-65.11	112.17	37.05	32.43	10.68	33.1	106	151	P	V
		5866.6	47.56	-59.99	107.55	37.52	32.43	10.71	33.1	106	151	P	V
		5902	46.69	-38.49	85.18	36.54	32.5	10.75	33.1	106	151	P	V
		5936.4	46.43	-21.77	68.2	36.12	32.63	10.78	33.1	106	151	P	V



WIFI Ant. 1+2	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 CH 165 5825MHz	*	5825	102.65	-	-	92.74	32.33	10.68	33.1	295	29	P	H
	*	5825	95.6	-	-	85.69	32.33	10.68	33.1	295	29	A	H
		5850	52.03	-70.17	122.2	42.05	32.4	10.68	33.1	295	29	P	H
		5864.4	49.22	-58.95	108.17	39.18	32.43	10.71	33.1	295	29	P	H
		5876.4	48.12	-56.04	104.16	38.04	32.47	10.71	33.1	295	29	P	H
		5947.2	48.61	-19.59	68.2	38.23	32.7	10.78	33.1	295	29	P	H
	*	5825	96.83	-	-	86.92	32.33	10.68	33.1	283	266	P	V
	*	5825	88.16	-	-	78.25	32.33	10.68	33.1	283	266	A	V
		5851.8	48.15	-69.95	118.1	38.17	32.4	10.68	33.1	283	266	P	V
		5859.4	47.41	-62.16	109.57	37.37	32.43	10.71	33.1	283	266	P	V
		5876.6	47.41	-56.6	104.01	37.33	32.47	10.71	33.1	283	266	P	V
		5926	47.63	-20.57	68.2	37.35	32.63	10.75	33.1	283	266	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 4 5725~5850MHz

WIFI 802.11n HT20 (Harmonic @ 3m)

WIFI Ant. 1+2	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 CH 149 5745MHz		11490	47.54	-26.46	74	44.96	40.07	15.12	52.61	160	360	P	H
		17235	49.32	-18.88	68.2	38.92	40.33	22.6	52.53	170	360	P	H
		11490	49.15	-24.85	74	46.57	40.07	15.12	52.61	163	196	P	V
		17235	50.67	-17.53	68.2	40.27	40.33	22.6	52.53	175	198	P	V
802.11n HT20 CH 157 5785MHz		11570	47.58	-26.42	74	45.13	39.9	15.18	52.63	186	156	P	H
		17355	48.39	-19.81	68.2	37.13	40.95	22.96	52.65	189	143	P	H
		11570	48.96	-25.04	74	46.51	39.9	15.18	52.63	186	175	P	V
		17355	51.65	-16.55	68.2	40.39	40.95	22.96	52.65	189	156	P	V
802.11n HT20 CH 165 5825MHz		11650	47.61	-26.39	74	45.43	39.6	15.24	52.66	156	347	P	H
		17475	49.95	-18.25	68.2	37.91	41.5	23.31	52.77	150	360	P	H
		11650	48.93	-25.07	74	46.75	39.6	15.24	52.66	186	42	P	V
		17475	50.91	-17.29	68.2	38.87	41.5	23.31	52.77	175	175	P	V
Remark		1. No other spurious found. 2. All results are PASS against Peak and Average limit line.											



Band 4 5725~5850MHz

WIFI 802.11n HT40 (Band Edge @ 3m)

WIFI Ant. 1+2	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 HT40 CH 151 5755MHz		5632.4	49	-19.2	68.2	39.75	31.77	10.58	33.1	283	354	P	H
		5693.4	51.6	-48.73	100.33	42.11	32	10.59	33.1	283	354	P	H
		5715.6	53.69	-55.88	109.57	44.15	32.03	10.61	33.1	283	354	P	H
		5723.8	55.3	-64.16	119.46	45.72	32.07	10.61	33.1	283	354	P	H
	*	5755	101.48	-	-	91.83	32.13	10.62	33.1	283	354	P	H
		5755	94.78	-	-	85.13	32.13	10.62	33.1	283	354	A	H
		5850.8	48.09	-72.29	120.38	38.11	32.4	10.68	33.1	283	354	P	H
		5861.4	47.84	-61.17	109.01	37.8	32.43	10.71	33.1	283	354	P	H
		5892.4	48.99	-43.3	92.29	38.88	32.5	10.71	33.1	283	354	P	H
		5929.4	47.21	-20.99	68.2	36.93	32.63	10.75	33.1	283	354	P	H
		5635	47.23	-20.97	68.2	38.02	31.73	10.58	33.1	276	97	P	V
		5695.2	49.2	-52.46	101.66	39.71	32	10.59	33.1	276	97	P	V
		5718.8	49.49	-60.97	110.46	39.91	32.07	10.61	33.1	276	97	P	V
		5721	49.38	-63.7	113.08	39.8	32.07	10.61	33.1	276	97	P	V
	*	5755	95.8	-	-	86.15	32.13	10.62	33.1	276	97	P	V
		5755	89.62	-	-	79.97	32.13	10.62	33.1	276	97	A	V
		5854.4	47.28	-64.89	112.17	37.27	32.43	10.68	33.1	276	97	P	V
		5867.8	47.06	-60.15	107.21	37.02	32.43	10.71	33.1	276	97	P	V
		5901.4	47.3	-38.32	85.62	37.15	32.5	10.75	33.1	276	97	P	V
		5940.4	47.7	-20.5	68.2	37.32	32.7	10.78	33.1	276	97	P	V



WIFI Ant. 1+2	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 HT40 CH 159 5795MHz		5645	47.91	-20.29	68.2	38.7	31.73	10.58	33.1	283	343	P	H
		5692.2	49.55	-49.9	99.45	40.06	32	10.59	33.1	283	343	P	H
		5709.2	49.73	-58.05	107.78	40.19	32.03	10.61	33.1	283	343	P	H
		5723	48.69	-68.95	117.64	39.11	32.07	10.61	33.1	283	343	P	H
	*	5795	101.75	-	-	92.01	32.2	10.64	33.1	283	343	P	H
		5795	94.97	-	-	85.23	32.2	10.64	33.1	283	343	A	H
		5854.4	47.81	-64.36	112.17	37.8	32.43	10.68	33.1	283	343	P	H
		5869.6	48.13	-58.58	106.71	38.09	32.43	10.71	33.1	283	343	P	H
		5875.6	49.97	-54.78	104.75	39.89	32.47	10.71	33.1	283	343	P	H
		5943.6	47.61	-20.59	68.2	37.23	32.7	10.78	33.1	283	343	P	H
		5631.4	46.87	-21.33	68.2	37.62	31.77	10.58	33.1	104	343	P	V
		5710.6	46.29	-61.88	108.17	36.75	32.03	10.61	33.1	104	343	P	V
		5724.4	45.05	-75.78	120.83	35.47	32.07	10.61	33.1	104	343	P	V
	*	5795	94.08	-	-	84.34	32.2	10.64	33.1	104	343	P	V
		5795	87.6	-	-	77.86	32.2	10.64	33.1	104	343	A	V
		5852.2	46.26	-70.92	117.18	36.28	32.4	10.68	33.1	104	343	P	V
		5864.4	47.15	-61.02	108.17	37.11	32.43	10.71	33.1	104	343	P	V
		5881.6	47.1	-53.2	100.3	37.02	32.47	10.71	33.1	104	343	P	V
		5948.6	47.09	-21.11	68.2	36.71	32.7	10.78	33.1	104	343	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 4 5725~5850MHz

WIFI 802.11n HT40 (Harmonic @ 3m)

WIFI Ant. 1+2	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		11550	48.84	-25.16	74	46.33	39.95	15.18	52.62	160	85	P	H
HT40		17325	48.54	-19.66	68.2	37.48	40.72	22.96	52.62	170	199	P	H
CH 151		11550	48.96	-25.04	74	46.45	39.95	15.18	52.62	160	360	P	V
5755MHz		17325	50.63	-17.57	68.2	39.57	40.72	22.96	52.62	170	360	P	V
802.11n		11590	47.58	-26.42	74	45.15	39.85	15.21	52.63	173	38	P	H
HT40		17385	49.55	-18.65	68.2	37.97	41.18	23.08	52.68	186	153	P	H
CH 159		11590	48.35	-25.65	74	45.92	39.85	15.21	52.63	170	300	P	V
5795MHz		17385	50.81	-17.39	68.2	39.23	41.18	23.08	52.68	150	200	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 4 5725~5850MHz

WIFI 802.11ac VHT80 (Band Edge @ 3m)

WIFI Ant. 1+2	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)
802.11ac VHT80 CH 155 5775MHz		5600.8	46.77	-21.43	68.2	37.51	31.8	10.56	33.1	287	352	P	H
		5693	48.22	-51.82	100.04	38.73	32	10.59	33.1	287	352	P	H
		5718.6	49.53	-60.88	110.41	39.95	32.07	10.61	33.1	287	352	P	H
		5724.2	49.72	-70.66	120.38	40.14	32.07	10.61	33.1	287	352	P	H
	*	5775	93.01	-	-	83.32	32.17	10.62	33.1	287	352	P	H
		5775	86.05	-	-	76.36	32.17	10.62	33.1	287	352	A	H
		5852.6	48.52	-67.75	116.27	38.54	32.4	10.68	33.1	287	352	P	H
		5869.4	48.46	-58.31	106.77	38.42	32.43	10.71	33.1	287	352	P	H
		5897.8	47.59	-40.7	88.29	37.44	32.5	10.75	33.1	287	352	P	H
		5928	47.22	-20.98	68.2	36.94	32.63	10.75	33.1	287	352	P	H
		5614.2	46.29	-21.91	68.2	37.03	31.8	10.56	33.1	106	346	P	V
		5692.2	46.14	-53.31	99.45	36.65	32	10.59	33.1	106	346	P	V
		5713	45.8	-63.04	108.84	36.26	32.03	10.61	33.1	106	346	P	V
		5721.4	45.78	-68.21	113.99	36.2	32.07	10.61	33.1	106	346	P	V
	*	5775	88.48	-	-	78.79	32.17	10.62	33.1	106	346	P	V
		5775	80.92	-	-	71.23	32.17	10.62	33.1	106	346	A	V
		5851.4	45.45	-73.56	119.01	35.47	32.4	10.68	33.1	106	346	P	V
		5857.2	47.15	-63.03	110.18	37.11	32.43	10.71	33.1	106	346	P	V
		5915.4	48.63	-26.65	75.28	38.41	32.57	10.75	33.1	106	346	P	V
		5936.4	49.22	-18.98	68.2	38.91	32.63	10.78	33.1	106	346	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

**Band 4 5725~5850MHz****WIFI 802.11ac VHT80 (Harmonic @ 3m)**

WIFI Ant. 1+2	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)
802.11ac		11550	48.84	-25.16	74	46.33	39.95	15.18	52.62	150	224	P	H
VHT80		17325	48.54	-19.66	68.2	37.48	40.72	22.96	52.62	120	310	P	H
CH 155		11550	48.96	-25.04	74	46.45	39.95	15.18	52.62	160	360	P	V
5775MHz		17325	50.63	-17.57	68.2	39.57	40.72	22.96	52.62	170	360	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Emission below 1GHz

5GHz WIFI 802.11a (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)
5GHz 802.11a LF		33.88	23.32	-16.68	40	32.45	22.08	0.77	31.98	-	-	P	H
		350.1	39.37	-6.63	46	47.7	20.41	2.47	31.21	100	22	P	H
		438.37	35.58	-10.42	46	41.79	22.29	2.77	31.27	-	-	P	H
		453.89	35.85	-10.15	46	41.75	22.57	2.82	31.29	-	-	P	H
		603.27	29.71	-16.29	46	33.19	24.51	3.28	31.27	-	-	P	H
		858.38	33.59	-12.41	46	34.45	26.37	3.95	31.18	-	-	P	H
		30	23.05	-16.95	40	29.89	24.4	0.73	31.97	-	-	P	V
		153.19	20.73	-22.77	43.5	34.19	16.47	1.61	31.54	-	-	P	V
		370.47	34.41	-11.59	46	42.16	20.9	2.55	31.2	100	69	P	V
		419.94	33.7	-12.3	46	40.26	21.96	2.71	31.23	-	-	P	V
		546.04	33.06	-12.94	46	37.31	23.9	3.1	31.25	-	-	P	V
		799.21	30.98	-15.02	46	32.15	26.19	3.8	31.16	-	-	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 over limit line.
P/A	P eak or A verage
H/V	H orizontal or V ertical



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)

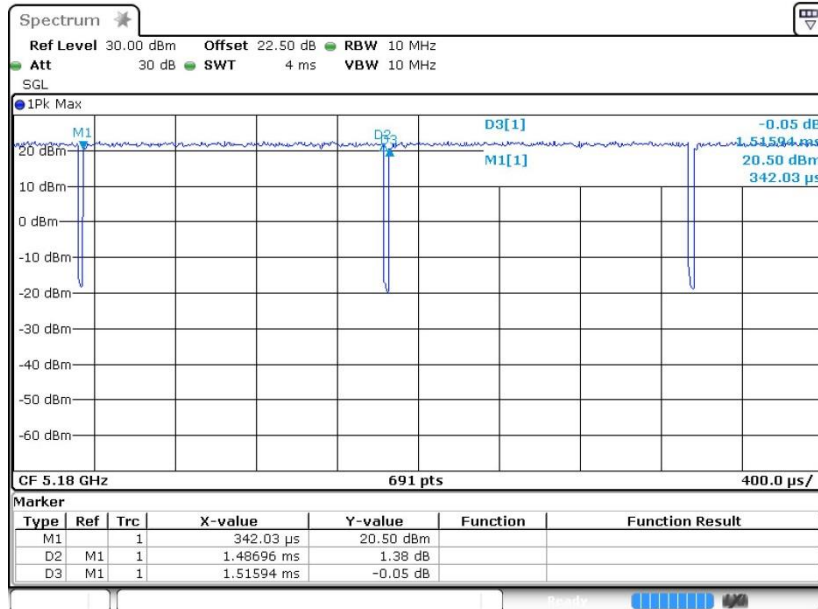
Both peak and average measured complies with the limit line, so test result is “PASS”.

Appendix C. Duty Cycle Plots

Antenna	Band	Duty Cycle(%)	T(ms)	1/T(kHz)	VBW Setting
1	802.11a	98.09	-	-	10Hz
1+2	802.11n HT20	97.71	1.487	0.673	1KHz
1+2	802.11n HT40	98.09	-	-	10Hz
1+2	802.11acVHT80	98.09	-	-	10Hz

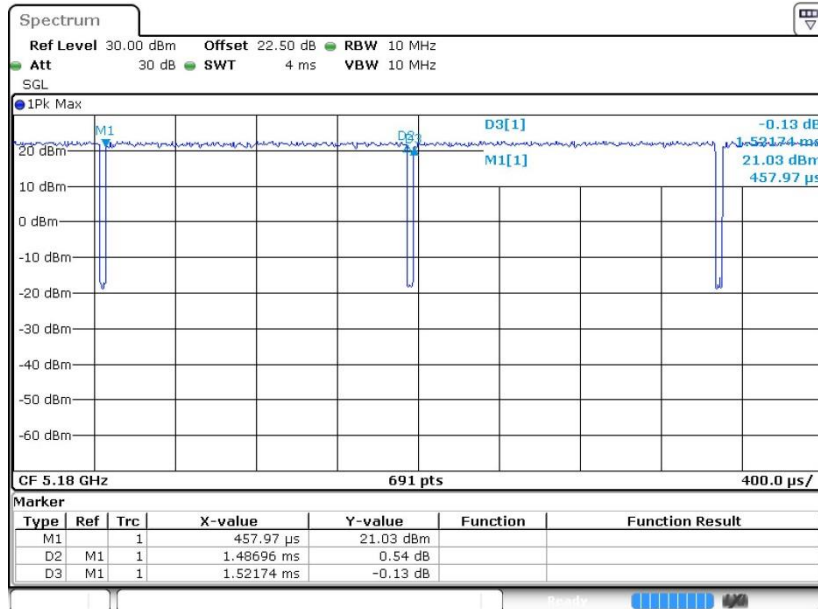
Ant1:

802.11a

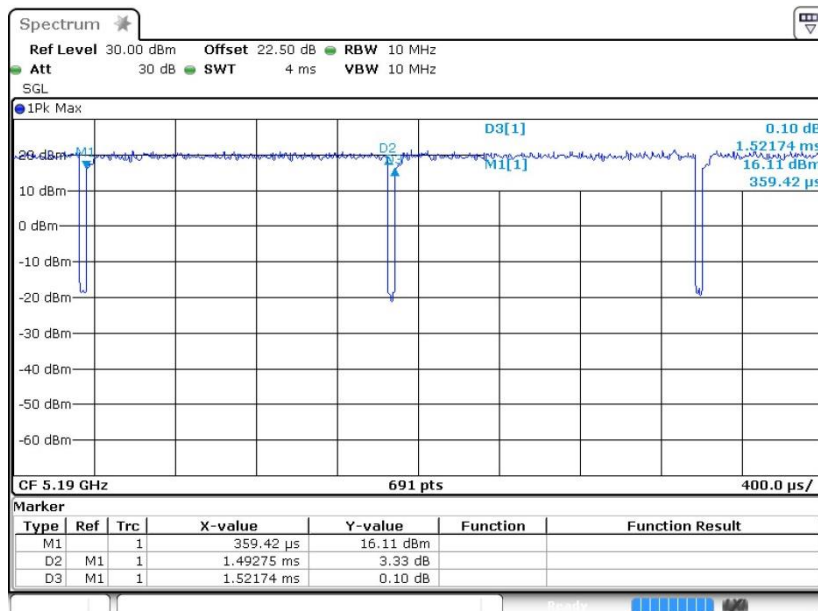


MIMO:

802.11n HT20



802.11n HT40



802.11ac VHT80

