

Product Name: Smart Phone	Report No: ITEZA2-202500034RF3
Product Model: Blade20 Turbo, Blade20 Max, Blade20 Play, Blade20 Pro Max, Blade20 Power, Blade20 Plus, Blade20 Energy, Blade20 Pro Energy, Blade20 Ultra Energy, Blade20 Max Energy, Blade20 Play Energy, Blade20 X	Security Classification: Open
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TIRT Testing Report

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FCC Radio Test Report

FCC ID: 2AX4YBLADE20TURBO

According to

47 CFR FCC Part 15, Subpart C(Section 15.247)

ANSI C63.10:2013

Applicant:	Shenzhen DOOGEE Hengtong Technology CO.,LTD
Address:	B, 2/F, Building A4, Silicon Valley Power Digital Industrial Park, No. 22, Longhua New District, Shenzhen, China
Manufacturer:	Shenzhen DOOGEE Hengtong Technology CO.,LTD
Address:	B, 2/F, Building A4, Silicon Valley Power Digital Industrial Park, No. 22, Longhua New District, Shenzhen, China
Sample No:	1000055016
Product Name:	Smart Phone
Brand Name:	DOOGEE
Model No.:	Blade20 Turbo, Blade20 Max, Blade20 Play, Blade20 Pro Max, Blade20 Power, Blade20 Plus, Blade20 Energy, Blade20 Pro Energy, Blade20 Ultra Energy, Blade20 Max Energy, Blade20 Play Energy, Blade20 X
Test No.:	Blade20 Turbo

Date of Receipt:	2025/02/18
Date of Test:	2025/02/18~2025/03/19
Issued Date:	2025/03/26
Testing Lab:	TIRT

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REPORT ISSUED HISTORY

Report No.	Version	Description	Issued Date	Note
ITEZA2-202500034RF3	V1.0	OriginalReport.	2025.03.26	Valid

1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standard(s):

FCC CFR Title 47, Part 15, Subpart C				
Standard(s) Section	Test Item	Test Result	Judgment	Remark
15.207	AC Power Line Conducted Emissions	APPENDIX A	PASS	-----
15.247(d) 15.205(a) 15.209(a)	Radiated Emissions	APPENDIX B APPENDIX C APPENDIX D	PASS	-----
15.247(a)(2)	Bandwidth	WLAN attachments	PASS	-----
15.247(b)(3)	Maximum Output Power	WLAN attachments	PASS	-----
15.247(d)	Conducted Spurious Emissions	WLAN attachments	PASS	-----
15.247(e)	Power Spectral Density	WLAN attachments	PASS	-----
15.203	Antenna Requirement	-----	PASS	Note(2)

Note:

- (1) "N/A" denotes test is not applicable in this test report.
- (2) The device what use a permanently attached antenna were considered sufficient to comply with the provisions of 15.203.
- (3) The device supports WLAN MIMO CDD mode

1.1 TEST FACILITY

Company:	Beijing TIRT Technology Service Co.,Ltd Shenzhen
Address:	104 Building C, Xinmingsheng Industrial Park No.132, Zhangge Old Village East Zone, Zhangge Community, Fucheng Street, Longhua District, Shenzhen, Guangdong, P. R. China
CNAS Registration Number:	CNAS L14158
A2LA Registration Number:	6049.01
FCC Accredited Lab.Designation Number:	CN1366
FCC Test Firm Registration Number:	820690
Telephone:	+86-0755-27087573

1.2 MEASUREMENT UNCERTAINTY

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2))

The TIRT measurement uncertainty as below table:

Uncertainty	
Parameter	Uncertainty
Occupied Channel Bandwidth	± 142.12 KHz
RF power conducted	± 0.74 dB
RF power radiated	± 3.25 dB
Spurious emissions, conducted	± 1.78 dB
Spurious emissions, radiated (30MHz~1GHz)	± 4.6 dB
Spurious emissions, radiated (1GHz~18GHz)	± 4.9 dB
Conduction Emissions(150kHz~30MHz)	± 3.1 dB
Humidity	$\pm 4.6\%$
Temprature	$\pm 0.7^{\circ}\text{C}$
Time	$\pm 1.2\%$

Note: Unless specifically mentioned, the uncertainty of measurement has not been taken into account to declare the compliance or non-compliance to the specification.

1.3 TEST ENVIRONMENT CONDITIONS

Test Item	Temperature	Humidity	Test Voltage	Tested By
AC Power Line Conducted Emissions	25.1°C	52%	DC 11V from adapter	Stone Tang
Radiated Emissions-9kHz to 30 MHz	24.5°C	50%	DC 3.87V from battery or DC 11V from adapter	Stone Tang
Radiated Emissions-30MHz to 1000MHz	24.2°C	53%	DC 3.87V from battery or DC 11V from adapter	Stone Tang
Radiated Emissions-Above 1000MHz	26.0°C	53%	DC 3.87V from battery or DC 11V from adapter	Stone Tang
Bandwidth	25.0°C	56%	DC 3.87V from battery or DC 11V from adapter	Stone Tang
Maximum Output Power	24.9°C	54%	AC 120V/60Hz from Adapter	Stone Tang
Conducted Spurious Emissions	25.1°C	62%	DC 3.87V from battery or DC 11V from adapter	Stone Tang
Power Spectral Density	26.0°C	60%	DC 3.87V from battery or DC 11V from adapter	Stone Tang

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Equipment	Smart Phone
Brand Name	DOOGEE
Test Model	Blade20 Turbo
Series Model	Blade20 Turbo, Blade20 Max, Blade20 Play, Blade20 Pro Max, Blade20 Power, Blade20 Plus, Blade20 Energy, Blade20 Pro Energy, Blade20 Ultra Energy, Blade20 Max Energy, Blade20 Play Energy, Blade20 X
Model Difference(s)	There is no difference except the name of the model
Software Version	DOOGEE-Blade20 Turbo-EEA-Android15.0-20250221
Hardware Version	M1703-MUB-V2
Power Rating	DC 3.87V from battery or DC 11V from adapter
Operation Frequency	2412 MHz~ 2462 MHz
Modulation Type	IEEE 802.11b: DSSS(CCK,DQPSK,DBPSK) IEEE 802.11g: OFDM(64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n :OFDM(64QAM, 16QAM, QPSK, BPSK)
Maximum Output Average Power	IEEE 802.11N20MIMO: 12.99dBm (0.019907W)

Note:

- For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.

2. Channel List:

CH01 - CH11 for IEEE 802.11b, IEEE 802.11g, IEEE 802.11n(HT20)							
CH03 - CH09 for IEEE 802.11n(HT40)							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
01	2412	04	2427	07	2442	10	2457
02	2417	05	2432	08	2447	11	2462
03	2422	06	2437	09	2452		

3. Antenna Specification:

Ant.	Manufactured	Model Name	Antenna Type	Connector	Gain (dBi)
1	Shenzhen 3Good Wireless Communication Co.,LTD..	F1 plus	PIFA	N/A	1.78
2	Shenzhen 3Good Wireless Communication Co.,LTD..	F1 plus	PIFA	N/A	1.78

Note:

- The antenna gain is provided by the manufacturer.
- The antenna is for fixed use

4. 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.

Mode	ANT1(dBi)	ANT2(dBi)	DG for Power (dBi)	DG for PSD(dBi)	Power Limit Reduction (dBi)	PSD Limit Reduction (dBi)
2.4GWIFI	1.78	1.78	1.78	4.79	0	0

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

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

2.2 DESCRIPTION OF TEST MODES

The test system was pre-tested based on the consideration of all possible combinations of EUT operation mode.

Pretest Mode	Description
Mode 1 SISO	TX B Mode Channel 01/06/11 ANT1
Mode 2 SISO	TX G Mode Channel 01/06/11 ANT1
Mode 3 SISO	TX N(HT20) Mode Channel 01/06/11 ANT1
Mode 4 SISO	TX N(HT40) Mode Channel 03/06/09 ANT1
Mode 5 SISO	TX B Mode Channel 01/06/11 ANT2
Mode 6 SISO	TX G Mode Channel 01/06/11 ANT2
Mode 7 SISO	TX N(HT20) Mode Channel 01/06/11 ANT2
Mode 8 SISO	TX N(HT40) Mode Channel 03/06/09 ANT2
Mode 9 MIMO	TX N(HT20) Mode Channel 01/06/11 ANT1+ANT2
Mode 10 MIMO	TX N(HT40) Mode Channel 03/06/09 ANT1+ANT2

Following mode(s) was (were) found to be the worst case(s) and selected for the final test.

AC power line conducted emissions test	
Final Test Mode	Description
Mode 9 MIMO	TX N(HT20) Mode Channel 01 ANT1+ANT2

Radiated emissions test - Below 1GHz	
Final Test Mode	Description
Mode 9 MIMO	TX N(HT20) Mode Channel 01 ANT1+ANT2

Radiated emissions test- Above 1GHz	
Final Test Mode	Description
Mode 9 MIMO	TX N(HT20) Mode Channel 01/06/11 ANT1+ANT2

Final Test Mode	Conducted RF test
Mode 1 SISO	TX B Mode Channel 01/06/11 ANT1
Mode 2 SISO	TX G Mode Channel 01/06/11 ANT1
Mode 3 SISO	TX N(HT20) Mode Channel 01/06/11 ANT1
Mode 4 SISO	TX N(HT40) Mode Channel 03/06/09 ANT1
Mode 5 SISO	TX B Mode Channel 01/06/11 ANT2
Mode 6 SISO	TX G Mode Channel 01/06/11 ANT2
Mode 7 SISO	TX N(HT20) Mode Channel 01/06/11 ANT2
Mode 8 SISO	TX N(HT40) Mode Channel 03/06/09 ANT2
Mode 9 MIMO	TX N(HT20) Mode Channel 01/06/11 ANT1+ANT2
Mode 10 MIMO	TX N(HT40) Mode Channel 03/06/09 ANT1+ANT2

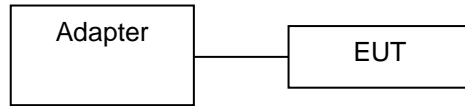
NOTE:

- (1) All the bit rate of transmitter have been tested and found the lowest rate is found to be the worst case and recorded.
- (2) For radiated emission above 1 GHz test, the spurious points of 1GHz~18GHz and 18GHz~26.5GHz have been pre-tested and in this report only recorded the worst case. The remaining spurious points are all below the limit value of 20dB.

2.3 DUTY CYCLE

Please refer to the WLAN attachments

2.4 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED



2.5 SUPPORT UNITS

Support Equipment				
No.	Equipment	Brand Name	Model Name	Remarks
1	/	/	/	/

3.AC POWER LINE CONDUCTED EMISSIONS

3.1LIMIT

Frequency of Emission (MHz)	Limit (dBμV)	
	Quasi-peak	Average
0.15 -0.5	66to 56*	56 to 46*
0.5-5.0	56	46
5.0 -30.0	60	50

NOTE:

- (1) The tighter limit applies at the band edges.
- (2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

3.2TEST PROCEDURE

- a. The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipment powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- b. Interconnecting cables that hang closer than 40 cm to the groundplane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- d. LISN at least 80 cm from nearest part of EUT chassis.
- e. For the actual test configuration, please refer to the related Item -EUT Test Photos.

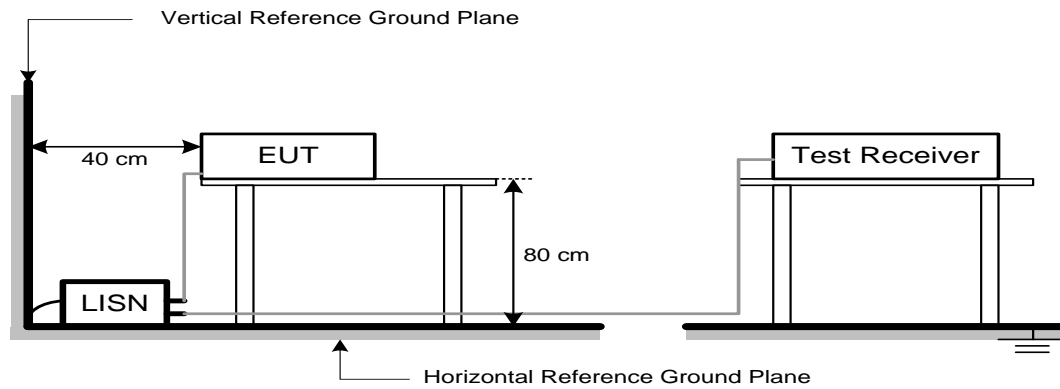
The following table is the setting of the receiver:

Receiver Parameters	Setting
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

3.3DEVIATIONFROMTESTSTANDARD

No deviation.

3.4 TEST SETUP



The LISN edge is arranged parallel to the edge of the test table

The vertical conducting plane or wall of an RF-shielded (screened) room shall be located 40 cm to the rear of the EUT and LISN

3.5 EUT OPERATION CONDITIONS

EUT was programmed to be in continuously transmitting mode.

3.6 TEST RESULTS

Please refer to the APPENDIX A.

4. RADIATED EMISSIONS

4.1 LIMIT

In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

LIMITS OF RADIATED EMISSION MEASUREMENT (9 kHz-1000MHz)

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

LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

Frequency (MHz)	(dBuV/m at 3 m)	
	Peak	Average
Above 1000	74	54

NOTE:

- (1) The limit for radiated test was performed according to FCC CFR Title 47, Part 15, Subpart C.
- (2) The tighter limit applies at the band edges.
- (3) Emission level (dBuV/m)=20log Emission level (uV/m).

4.2 TEST PROCEDURE

- The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(below 1GHz)
- The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 1.5 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(above 1GHz)
- The height of the equipment or of the substitution antenna shall be 0.8m or 1.5m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights find the maximum reading (used Bore sight function).
- The receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1GHz.
- The initial step in collecting radiated emission data is a receiver peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- All readings are Peak unless otherwise stated QP in column of Note. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform.
(below 1GHz)
- All readings are Peak Mode value unless otherwise stated AVG in column of Note. If the Peak Mode Measured value compliance with the Peak Limits and lower than AVG Limits, the EUT shall be deemed to meet both Peak & AVG Limits and then only Peak Mode was measured, but AVG Mode didn't perform. (above 1GHz)
- For the actual test configuration, please refer to the related Item -EUT Test Photos.

The following table is the setting of the receiver:

Spectrum Parameters	Setting
Start ~ Stop Frequency	9 kHz~150 kHz for RBW 200 Hz
Start ~ Stop Frequency	0.15 MHz~30 MHz for RBW 9 kHz
Start ~ Stop Frequency	30 MHz~1000 MHz for RBW 100 kHz

Spectrum Parameters	Setting
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RBW / VBW (Emission in restricted band)	1MHz / 3MHz for PK value 1MHz / 1/THz for AVG value

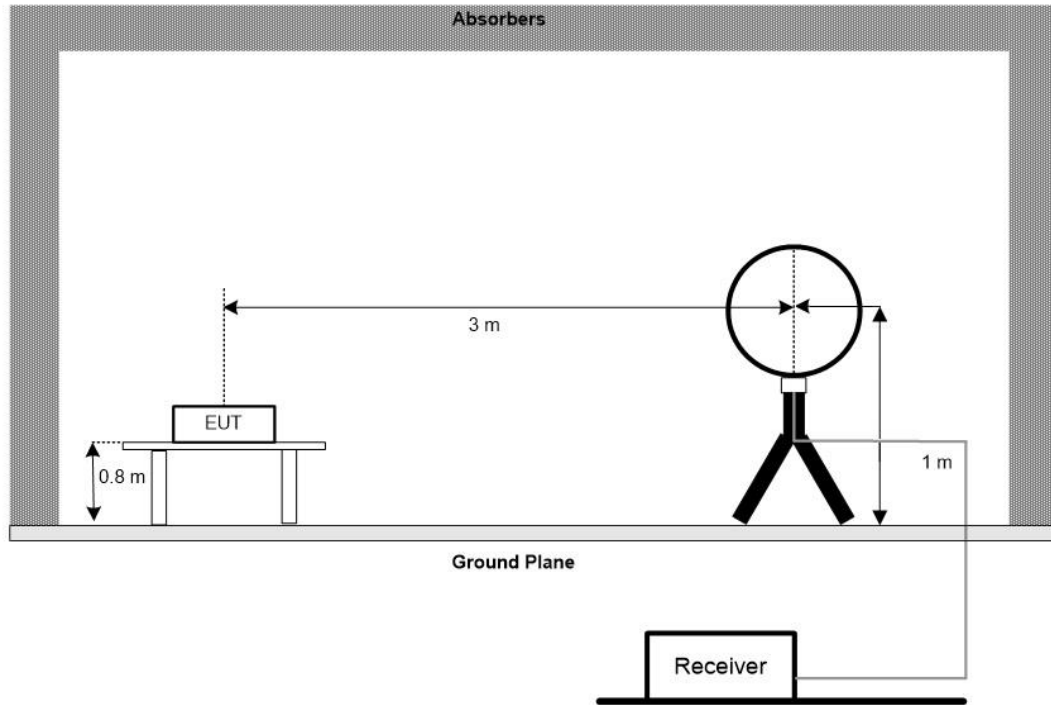
Receiver Parameters	Setting
Start ~ Stop Frequency	9 kHz~90 kHz for PK/AVG detector
Start ~ Stop Frequency	90 kHz~110 kHz for QP detector
Start ~ Stop Frequency	110 kHz~490 kHz for PK/AVG detector
Start ~ Stop Frequency	490 kHz~30 MHz for QP detector
Start ~ Stop Frequency	30MHz~1000MHz for QP detector
Start ~ Stop Frequency	1 GHz~26.5GHz for PK/AVG detector

4.3 DEVIATION FROM TEST STANDARD

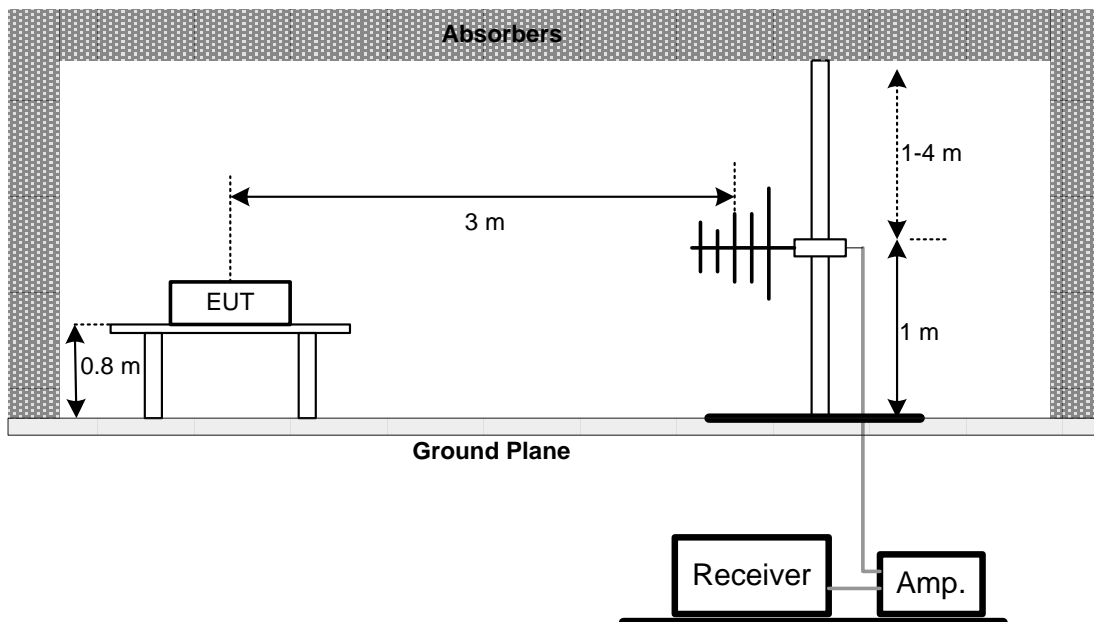
No deviation.

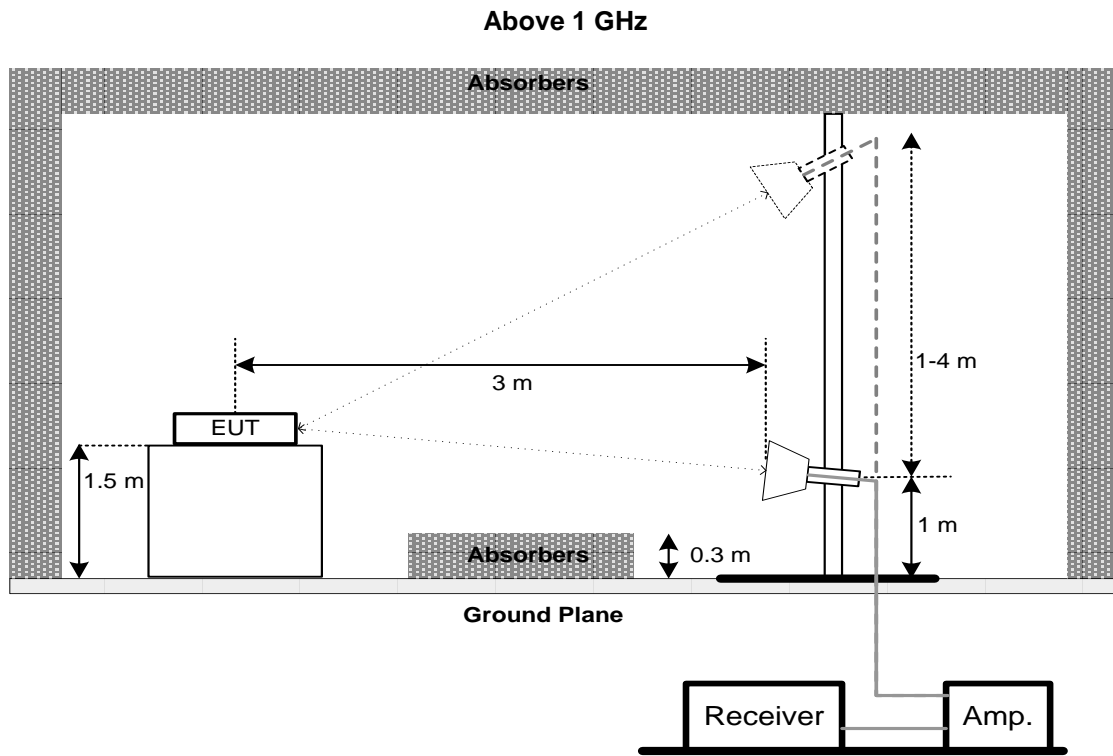
4.4 TEST SETUP

9 kHz to 30 MHz



30 MHz to 1 GHz





4.5 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

4.6 TEST RESULTS - 9 KHZ TO 30MHZ

Please refer to the APPENDIX B.

Remark:

- (1) Distance extrapolation factor = $40 \log (\text{specific distance} / \text{test distance})$ (dB).
- (2) Limit line = specific limits (dBuV) + distance extrapolation factor.

4.7 TEST RESULTS - 30 MHZ TO 1000MHZ

Please refer to the APPENDIX C.

4.8 TEST RESULTS- ABOVE 1000MHZ

Please refer to the APPENDIX D.

Remark:

- (1) No limit: This is fundamental signal, the judgment is not applicable.
For fundamental signal judgment was referred to Peak output test.

5.BANDWIDTH

5.1LIMIT

Section	Test Item	Limit
FCC 15.247(a)(2)	6dB Bandwidth	Minimum 500 kHz
	99% Emission Bandwidth	-

5.2TEST PROCEDURE

- The EUT was directly connected to the tonscend test system and antenna output port as show in the block diagram below.
- The following table is the setting of the spectrum analyzer:

For 6 dB Bandwidth:

Spectrum Parameters	Setting
Span Frequency	> Measurement Bandwidth
RBW	100 kHz
VBW	300 kHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

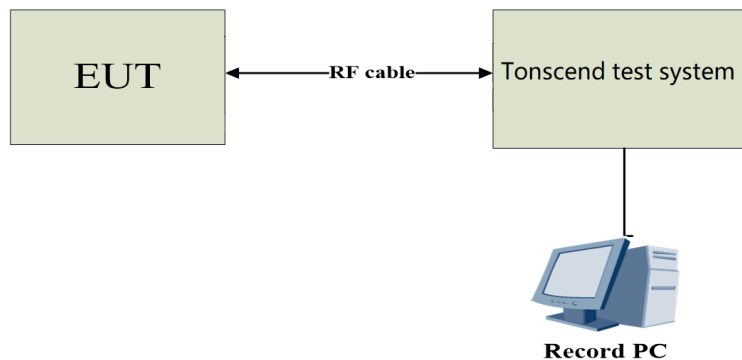
For 99% Emission Bandwidth:

Spectrum Parameters	Setting
Span Frequency	Between 1.5 times and 5.0 times the OBW
RBW	300 kHz For 20MHz 1 MHz For 40MHz
VBW	1 MHz For 20MHz 3 MHz For 40MHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

5.3DEVIATION FROM STANDARD

No deviation.

5.4TEST SETUP



5.5EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

5.6TESTRESULTS

Pass

Please refer to the WLAN attachments

6.MAXIMUM OUTPUT POWER

6.1LIMIT

Section	Test Item	Limit
FCC 15.247(b)(3)	Maximum Output Power	1.0000Watt or 30.00 dBm

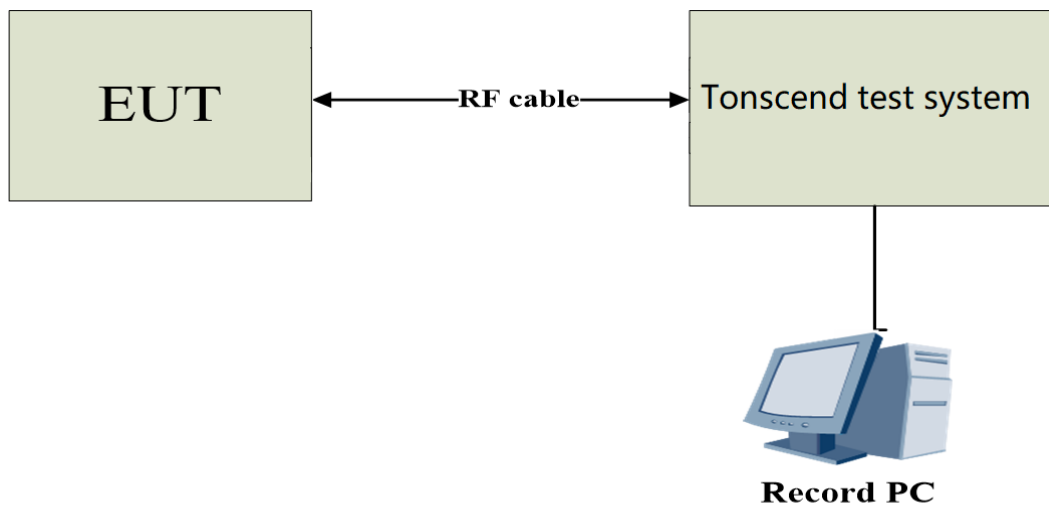
6.2TEST PROCEDURE

- The EUT was directly connected to the tonscend test system and antenna output port as show in the block diagram below.
- The maximum conducted output power was performed in accordance with method 11.9.1.3(for Average power)of ANSI C63.10-2013 and FCC KDB 662911 D01 v02r01 Multiple Transmitter Output.

6.3DEVIATION FROM STANDARD

No deviation.

6.4TEST SETUP



6.5EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

6.6TESTRESULTS

Pass

Please refer to the WLAN attachments

7.CONDUCTED SPURIOUS EMISSIONS

7.1 LIMIT

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak Output Power limits. If the transmitter complies with the Output Power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required.

7.2TEST PROCEDURE

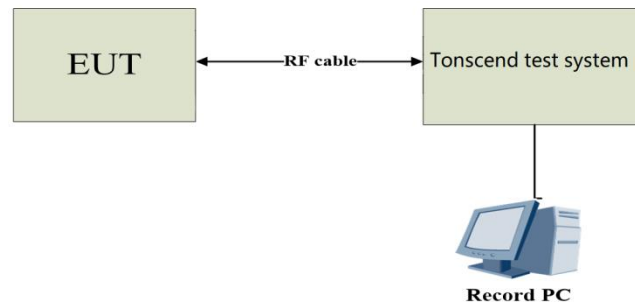
- The EUT was directly connected to the tonscond test system and antenna output port as show in the block diagram below.
- The following table is the setting of the spectrum analyzer:

Spectrum Parameters	Setting
Start Frequency	30 MHz
Stop Frequency	26.5 GHz
RBW	100 kHz
VBW	300 kHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

7.3DEVIATION FROM STANDARD

No deviation.

7.4TEST SETUP



7.5EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

7.6TESTRESULTS

Pass

Please refer to the WLAN attachments, Only show the worst mode data(MIMO mode)

8.POWER SPECTRAL DENSITY

8.1LIMIT

Section	Test Item	Limit
FCC 15.247(e)	Power Spectral Density	8 dBm (in any 3 kHz)

8.2TEST PROCEDURE

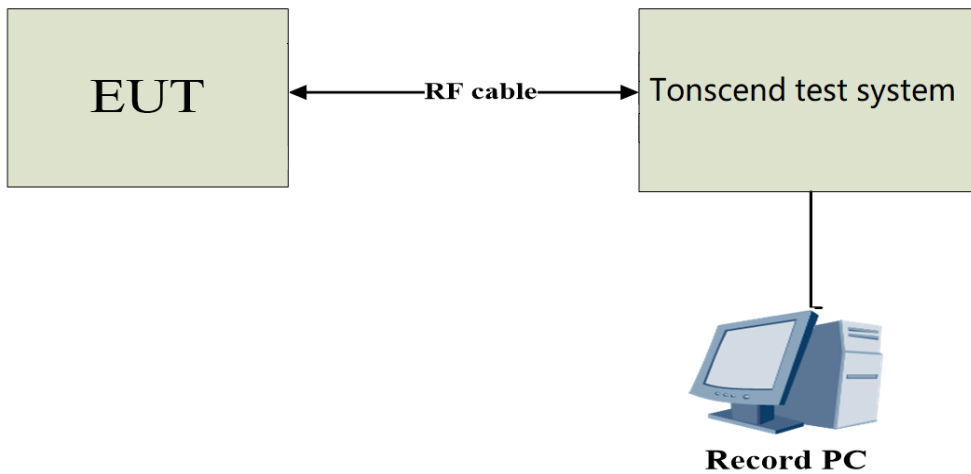
- The EUT was directly connected to the tonscond test system and antenna output port as show in the block diagram below.
- The following table is the setting of the spectrum analyzer:

Spectrum Parameters	Setting
Span Frequency	1.5 times the DTS bandwidth
RBW	3 kHz
VBW	10 kHz
Detector	RMS
Trace	Max Hold
Sweep Time	Auto

8.3DEVIATION FROM STANDARD

No deviation.

8.4TEST SETUP



8.5EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

8.6TESTRESULTS

Pass

Please refer to the WLAN attachments

9. MEASUREMENT INSTRUMENTS LIST

Name of Equipment	Manufacturer	Model Number	Serial Number	Last Calibration	Due Calibration
EMI Receiver	Rohde&Schwarz	ESIB 40	YH-TIRT-SAC-96 6-20220911	2025/01/05	2026/01/04
Integral Antenna	Schwarzbeck	VULB 9163	01314	2023/12/11	2025/12/10
Integral Antenna	Rohde&Schwarz	HF907	RSM2991424	2023/12/11	2025/12/10
Preamplifier	Emtrace	RP01A	'02017	2025/01/05	2026/01/04
Preamplifier	Schwarzbeck	BBV9744	00143	2025/01/05	2026/01/04
Loop Antenna	ZHINAN	ZN30900A	12024	2025/01/05	2026/01/04
Horn Antenna	Schwarzbeck	BBHA9170	00956	2025/01/05	2026/01/04
RF Cable	/	LMR400UF-NMNM- 7.0M	/	2025/01/05	2026/01/04
RF Cable	/	SFT2050PUR-NMN M-7.0M	/	2025/01/05	2026/01/04
EMI Receiver	Rohde&Schwarz	ESR7	1316.3003K07-10 2611-mk	2024/11/02	2025/11/01
LISN	Rohde&Schwarz	ENV216	3560.655.12-102 915-Bp	2024/11/02	2025/11/01
RF Cable	\	SFT2050PUR-NMN M-2.0M	\	2025/01/05	2026/01/04
Spectrum analyzer	ROHDE&SCHWARZ	FSU26	200732	2025/01/05	2026/01/04
Spectrum analyzer	ROHDE&SCHWARZ	FSV40-N	101722	2025/01/05	2026/01/04
Filter	HEWLETT PACKARD	JS0806-F	19K8060209	2025/01/05	2026/01/04

Remark: "N/A" denotes no model name, serial no. or calibration specified.

10.EUT TEST PHOTO

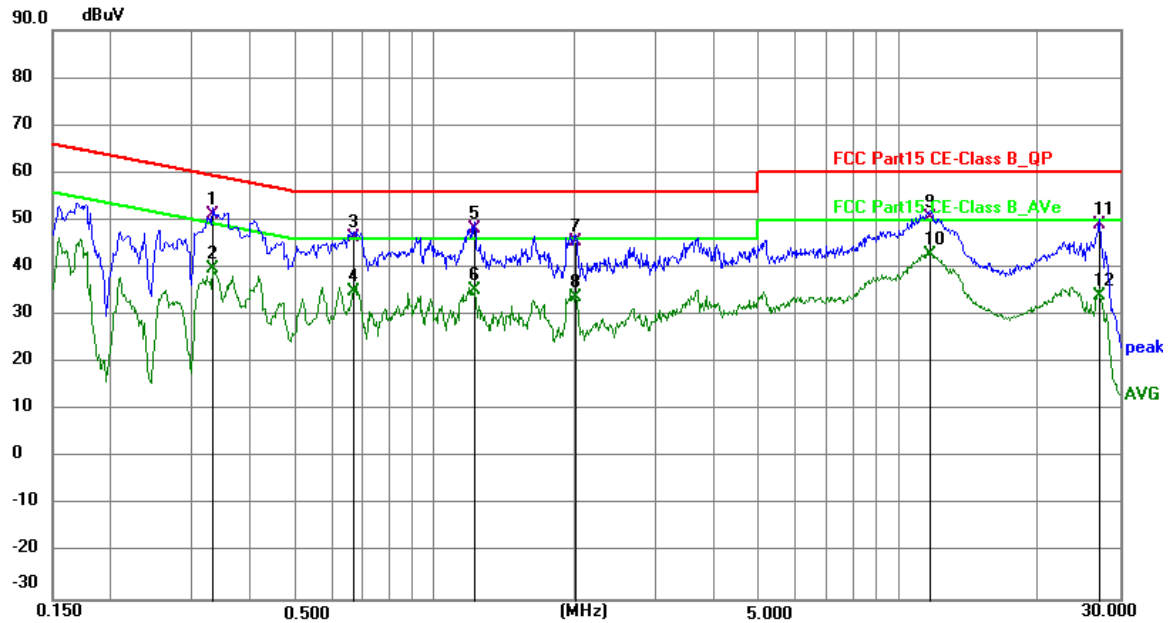
Please reference to the appendix I Test Setup Photo for details.

11. PHOTOS OF EUT

Please reference to the appendix II external photos and appendix III internal photos for details.

APPENDIX A - AC POWER LINE CONDUCTED EMISSIONS

Test Mode	TX N(HT20) Mode Channel 01 ANT1+ANT2	Phase	Line
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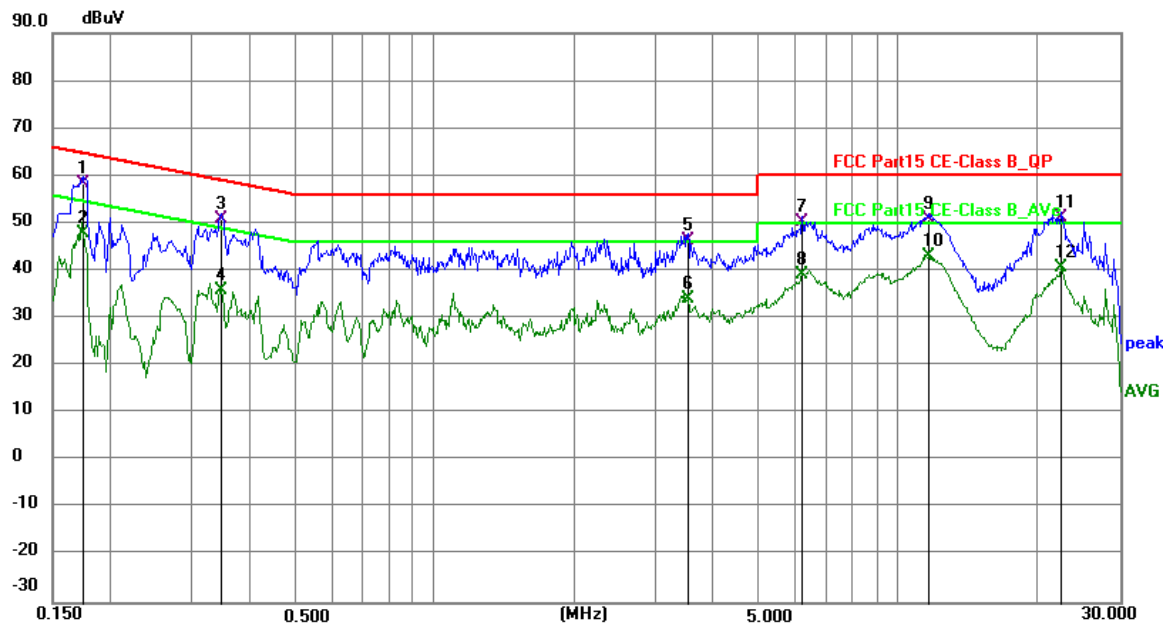


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.3321	41.55	9.63	51.18	59.40	-8.22	QP	P	
2	0.3321	30.07	9.63	39.70	49.40	-9.70	AVG	P	
3	0.6675	36.71	9.63	46.34	56.00	-9.66	QP	P	
4	0.6675	25.35	9.63	34.98	46.00	-11.02	AVG	P	
5	1.2164	38.61	9.64	48.25	56.00	-7.75	QP	P	
6	1.2164	25.47	9.64	35.11	46.00	-10.89	AVG	P	
7	2.0220	35.94	9.65	45.59	56.00	-10.41	QP	P	
8	2.0220	24.25	9.65	33.90	46.00	-12.10	AVG	P	
9	11.7015	40.94	9.73	50.67	60.00	-9.33	QP	P	
10 *	11.7015	32.90	9.73	42.63	50.00	-7.37	AVG	P	
11	27.2355	39.32	9.74	49.06	60.00	-10.94	QP	P	
12	27.2355	24.22	9.74	33.96	50.00	-16.04	AVG	P	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Test Mode	TX N(HT20) Mode Channel 01 ANT1+ANT2	Phase	Neutral
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No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1 *	0.1749	48.72	9.62	58.34	64.72	-6.38	QP	P	
2	0.1749	38.10	9.62	47.72	54.72	-7.00	AVG	P	
3	0.3465	41.11	9.62	50.73	59.05	-8.32	QP	P	
4	0.3465	26.15	9.62	35.77	49.05	-13.28	AVG	P	
5	3.5115	36.78	9.67	46.45	56.00	-9.55	QP	P	
6	3.5115	24.37	9.67	34.04	46.00	-11.96	AVG	P	
7	6.2025	40.47	9.69	50.16	60.00	-9.84	QP	P	
8	6.2025	29.32	9.69	39.01	50.00	-10.99	AVG	P	
9	11.5755	41.15	9.74	50.89	60.00	-9.11	QP	P	
10	11.5755	33.43	9.74	43.17	50.00	-6.83	AVG	P	
11	22.4430	41.26	9.82	51.08	60.00	-8.92	QP	P	
12	22.4430	30.96	9.82	40.78	50.00	-9.22	AVG	P	

REMARKS:

(1) Measurement Value = Reading Level + Correct Factor.

(2) Margin Level = Measurement Value - Limit Value.

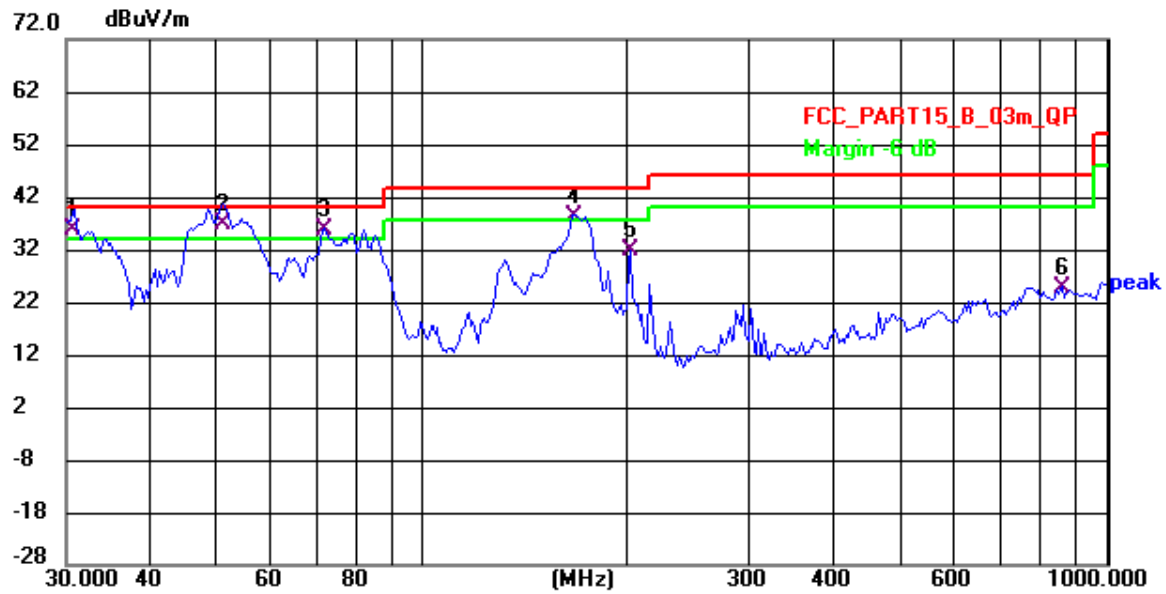
APPENDIX B - RADIATED EMISSION - 9 KHZ TO 30 MHZ

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.

APPENDIX C - RADIATED EMISSION - 30 MHZ TO 1000 MHZ

Test Mode	TX N(HT20) Mode Channel 01 ANT1+ANT2	Polarization	Vertical
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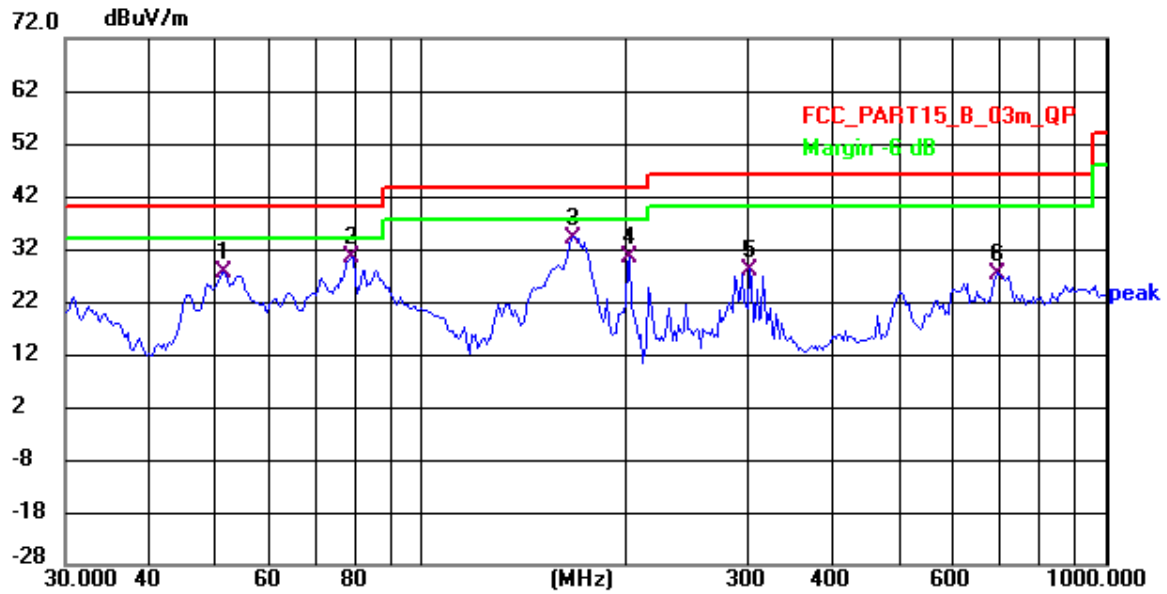


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1 !	30.668	59.24	-23.35	35.89	40.00	-4.11	QP	200	338	P	
2 *	50.852	58.81	-22.09	36.72	40.00	-3.28	QP	100	103	P	
3 !	71.705	60.10	-24.34	35.76	40.00	-4.24	QP	100	5	P	
4 !	166.639	59.23	-20.91	38.32	43.50	-5.18	QP	100	19	P	
5	201.454	56.50	-24.74	31.76	43.50	-11.74	QP	100	182	P	
6	862.802	33.82	-9.03	24.79	46.00	-21.21	QP	200	41	P	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

Test Mode	TX N(HT20) Mode Channel 01 ANT1+ANT2	Polarization	Horizontal
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No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	51.176	49.57	-22.12	27.45	40.00	-12.55	QP	100	172	P	
2	78.564	55.84	-25.61	30.23	40.00	-9.77	QP	200	347	P	
3 *	166.639	54.96	-20.91	34.05	43.50	-9.45	QP	200	288	P	
4	201.454	55.06	-24.74	30.32	43.50	-13.18	QP	100	299	P	
5	300.699	50.22	-22.17	28.05	46.00	-17.95	QP	100	84	P	
6	693.910	39.54	-12.25	27.29	46.00	-18.71	QP	200	16	P	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

APPENDIXD -RADIATED EMISSION- ABOVE 1000MHZ

Test Result of Radiated Spurious at Band edges.

Note: All test plots below include both horizontal and vertical, only show the worst mode data

Test Results					PASS			
Frequency Range					2310MHz~2410MHz			
Test Mode					TX B Mode Channel 01 ANT1			
N o.	Freq MHz	Polarity	Reading (dBuV/m)	Correct Factor	Result (dBuV/m)	Limit (dBuV/m)	Margin	Remark
1	2390	H	75.24	-21.45	53.79	74.00	-20.21	Peak
2	2390	H	--	-21.45	--	54.00	--	Avg
3	2400	H	79.47	-26.20	53.27	74.00	-20.73	Peak
4	2400	H	--	-26.20	--	54.00	--	Avg
1	2390	V	74.39	-21.45	52.94	74.00	-21.06	Peak
2	2390	V	--	-21.45	--	54.00	--	Avg
3	2400	V	78.77	-26.20	52.57	74.00	-21.43	Peak
4	2400	V	--	-26.20	--	54.00	--	Avg
Test Results					PASS			
Frequency Range					2450MHz~2550MHz			
Test Mode					TX B Mode Channel 11 ANT1			
1	2483.5	H	78.48	-25.35	53.13	74.00	-20.87	Peak
2	2483.5	H	--	-25.29	--	54.00	--	Avg
1	2483.5	V	78.56	-25.35	53.21	74.00	-20.79	Peak
2	2483.5	V	--	-25.29	--	54.00	--	Avg

Note: 1. Means other frequency and mode comply with standard requirements and at least have 20dB margin.

2. Correct Factor=Cable Loss+ Antenna Factor-Amplifier Gain.

Result=Reading + Correct Factor.

Margin= Result-Limit.

3. If the limits for the measurement with the average detector are met when using a receiver with a peak detector, the test unit shall be deemed to meet both limits and the measurement with the average detector need not be carried out.

Test Results					PASS			
Frequency Range					2310MHz~2410MHz			
Test Mode					TX G Mode Channel 01 ANT1			
N o.	Freq MHz	Polarity	Reading (dBuV/m)	Correct Factor	Result (dBuV/m)	Limit (dBuV/m)	Margin	Remark
1	2390	H	74.84	-21.45	53.39	74.00	-20.61	Peak
2	2390	H	--	-21.45	--	54.00	--	Avg
3	2400	H	79.35	-26.20	53.15	74.00	-20.85	Peak
4	2400	H	--	-26.20	--	54.00	--	Avg
1	2390	V	74.40	-21.45	52.95	74.00	-21.05	Peak
2	2390	V	--	-21.45	--	54.00	--	Avg
3	2400	V	79.50	-26.20	53.30	74.00	-20.70	Peak
4	2400	V	--	-26.20	--	54.00	--	Avg
Test Results					PASS			
Frequency Range					2450MHz~2550MHz			
Test Mode					TX G Mode Channel 11 ANT1			
1	2483.5	H	78.90	-25.35	53.55	74.00	-20.45	Peak
2	2483.5	H	--	-25.29	--	54.00	--	Avg
1	2483.5	V	78.85	-25.35	53.50	74.00	-20.50	Peak
2	2483.5	V	--	-25.29	--	54.00	--	Avg
<p>Note: 1. Means other frequency and mode comply with standard requirements and at least have 20dB margin.</p> <p>2. Correct Factor=Cable Loss+ Antenna Factor-Amplifier Gain. Result=Reading + Correct Factor. Margin= Result-Limit.</p> <p>3. If the limits for the measurement with the average detector are met when using a receiver with a peak detector, the test unit shall be deemed to meet both limits and the measurement with the average detector need not be carried out.</p>								

Test Results					PASS			
Frequency Range					2310MHz~2410MHz			
Test Mode					TX N(HT20) Mode Channel 01 ANT1+ANT2			
N o.	Freq MHz	Polarity	Reading (dBuV/m)	Correct Factor	Result (dBuV/m)	Limit (dBuV/m)	Margin	Remark
1	2390	H	75.01	-21.45	53.56	74.00	-20.44	Peak
2	2390	H	--	-21.45	--	54.00	--	Avg
3	2400	H	79.25	-26.20	53.05	74.00	-20.95	Peak
4	2400	H	--	-26.20	--	54.00	--	Avg
1	2390	V	75.25	-21.45	53.80	74.00	-20.20	Peak
2	2390	V	--	-21.45	--	54.00	--	Avg
3	2400	V	79.58	-26.20	53.38	74.00	-20.62	Peak
4	2400	V	--	-26.20	--	54.00	--	Avg
Test Results					PASS			
Frequency Range					2450MHz~2550MHz			
Test Mode					TX N(HT20) Mode Channel 11 ANT1+ANT2			
1	2483.5	H	79.03	-25.35	53.68	74.00	-20.32	Peak
2	2483.5	H	--	-25.29	--	54.00	--	Avg
1	2483.5	V	78.89	-25.35	53.54	74.00	-20.46	Peak
2	2483.5	V	--	-25.29	--	54.00	--	Avg
<p>Note: 1. Means other frequency and mode comply with standard requirements and at least have 20dB margin.</p> <p>2. Correct Factor=Cable Loss+ Antenna Factor-Amplifier Gain.</p> <p>Result=Reading + Correct Factor.</p> <p>Margin= Result-Limit.</p> <p>3. If the limits for the measurement with the average detector are met when using a receiver with a peak detector, the test unit shall be deemed to meet both limits and the measurement with the average detector need not be carried out.</p>								

Test Results					PASS			
Frequency Range					2310MHz~2410MHz			
Test Mode					TX N(HT40) Mode Channel 03 ANT1+ANT2			
N o.	Freq MHz	Polarity	Reading (dBuV/m)	Correct Factor	Result (dBuV/m)	Limit (dBuV/m)	Margin	Remark
1	2390	H	74.85	-21.45	53.40	74.00	-20.60	Peak
2	2390	H	--	-21.45	--	54.00	--	Avg
3	2400	H	79.00	-26.20	52.80	74.00	-21.20	Peak
4	2400	H	--	-26.20	--	54.00	--	Avg
1	2390	V	75.05	-21.45	53.60	74.00	-20.40	Peak
2	2390	V	--	-21.45	--	54.00	--	Avg
3	2400	V	78.73	-26.20	52.53	74.00	-21.47	Peak
4	2400	V	--	-26.20	--	54.00	--	Avg
Test Results					PASS			
Frequency Range					2450MHz~2550MHz			
Test Mode					TX N(HT40) Mode Channel 11 ANT1+ANT2			
1	2483.5	H	78.50	-25.35	53.15	74.00	-20.85	Peak
2	2483.5	H	--	-25.29	--	54.00	--	Avg
1	2483.5	V	78.73	-25.35	53.38	74.00	-20.62	Peak
2	2483.5	V	--	-25.29	--	54.00	--	Avg
<p>Note: 1. Means other frequency and mode comply with standard requirements and at least have 20dB margin.</p> <p>2. Correct Factor=Cable Loss+ Antenna Factor-Amplifier Gain. Result=Reading + Correct Factor. Margin= Result-Limit.</p> <p>3. If the limits for the measurement with the average detector are met when using a receiver with a peak detector, the test unit shall be deemed to meet both limits and the measurement with the average detector need not be carried out.</p>								

ABOVE 1000 MHz

Note: All the modes have been tested and recorded worst mode in the report.

Modulation Type: IEEE 802.11N20MIMO

Channel 1 / 2412 MHz

Frequency	Ant.Pol. H/V	Peak reading (dBuV)	AV reading (dBuV)	Correction Factor	Emission Level		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)
					Peak (dBuV/m)	AV (dBuV/m)			
4824.00	H	54.46	51.3	-1.89	52.57	49.41	74	54	-21.43
7236.00	H	44.98	---	7.9	52.88	---	74	54	-21.12
---	H	---	---	---	---	---	---	---	---
4824.00	V	55.39	---	-1.89	53.50	---	74	54	-20.50
7236.00	V	43.18	---	7.9	51.08	---	74	54	-22.92
---	V	---	---	---	---	---	---	---	---

Channel 6 / 2437 MHz

Frequency	Ant.Pol. H/V	Peak reading (dBuV)	AV reading (dBuV)	Correction Factor	Emission Level		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)
					Peak (dBuV/m)	AV (dBuV/m)			
4874.00	H	55.32	52.31	-1.57	53.75	50.74	74	54	-20.25
7311.00	H	41.50	---	8.2	49.70	---	74	54	-24.30
---	H	---	---	---	---	---	---	---	---
4874.00	V	54.34	---	-1.57	52.77	---	74	54	-21.23
7311.00	V	43.33	---	8.2	51.53	---	74	54	-22.47
---	V	---	---	---	---	---	---	---	---

Channel 11 / 2462 MHz

Frequency	Ant.Pol. H/V	Peak reading (dBuV)	AV reading (dBuV)	Correction Factor	Emission Level		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)
					Peak (dBuV/m)	AV (dBuV/m)			
4924.00	H	53.40	52	-1.28	52.12	50.72	74	54	-21.88
7386.00	H	41.47	---	9.3	50.77	---	74	54	-23.23
---	H	---	---	---	---	---	---	---	---
4924.00	V	54.83	---	-1.28	53.55	---	74	54	-20.45
7386.00	V	43.85	---	9.3	53.15	---	74	54	-20.85
---	V	---	---	---	---	---	---	---	---

Notes:

- 1). Radiated emissions measured in frequency range from 9 KHz~10th harmonic or 26.5GHz (which is less) were made with an instrument using Peak detector mode.
- 2). Data of measurement within this frequency range shown "----" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 3). Worst case data at 1Mbps at IEEE 802.11b.
- 4). Measured Level = Reading Level + Factor, Margin = Measured Level – Limit

End of Test Report