

## FCC/IC - TEST REPORT

Report Number : **708882003258-01** Date of Issue: March 31, 2021

Model : TCWBRCU1

Product Type : WIFI and Bluetooth module

Applicant : Hangzhou Tuya Information Technology Co.,Ltd

Address : Room701,Building3,More Center,No.87 GuDun  
Road,Hangzhou,Zhejiang China

Manufacturer : Hangzhou Tuya Information Technology Co.,Ltd

Address : Room701,Building3,More Center,No.87 GuDun  
Road,Hangzhou,Zhejiang China

Test Result : ☒ **Positive** ☐ **Negative**

Total pages including  
Appendices : 25

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## 2 Details about the Test Laboratory

### Details about the Test Laboratory

#### Test Site 1

Company name: TÜV SÜD Certification and Testing (China) Co., Ltd. Shanghai Branch  
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Registration  
Number: 820234

Test Firm IC  
Registration  
Number: 25988

Telephone: +86 21 6141 0123  
Fax: +86 21 6140 8600

### 3 Description of the Equipment under Test

#### Description of the Equipment Under Test

Product:	WIFI and Bluetooth module
Model no.:	TCWBRCU1
FCC ID:	2ANDL-TCWBRCU1
IC:	23243-TCWBRCU1
Options and accessories:	NA
Rating:	DC 5V
RF Transmission Frequency:	For 802.11b/g/n-HT20: 2412~2462 MHz For 802.15.1:2402~2480 MHz
No. of Operated Channel:	2.4GHz WIFI: 11 for 802.11b/802.11g/802.11(H20) 2.4GHz BLE: 40
Modulation:	For 2.4GHz WIFI: Direct Sequence Spread Spectrum (DSSS) for 802.11b Orthogonal Frequency Division Multiplexing (OFDM) for 802.11g/n For 2.4GHz BLE: GFSK
Antenna Type:	PCB antenna
Antenna Gain:	2.5 dBi
Description of the EUT:	The Equipment Under Test (EUT) is a low-power embedded Wi-Fi and Bluetooth module (4.2). We tested it and listed the worst data in this report.
Test sample no.:	SHA-560465-1

The sample's mentioned in this report is/are submitted/ supplied/ manufactured by client. The laboratory therefore assumes no responsibility for accuracy of information on the brand name, model number, origin of manufacture, consignment, antenna gain or any information supplied.



## 4 Summary of Test Standards

Test Standards	
FCC Part 15 Subpart C 10-1-2014 Edition	PART 15 - RADIO FREQUENCY DEVICES Subpart C - Intentional Radiators
RSS-Gen Issue 5 Amendment 1 March 2019	General Requirements for Compliance of Radio Apparatus
RSS-247 Issue 2 February 2017	Digital Transmission Systems (DTSS), Frequency Hopping Systems (FHSS) and License-Exempt Local Area Network (LE-LAN) Devices

All the test methods were according to KDB 558074 D01 15.247 Meas Guidance v05r02 and ANSI C63.10 (2013).

## 5 Summary of Test Results

Technical Requirements						
FCC Part 15 Subpart C						
Test Condition		Pages	Test Site	Test Result		
				Pass	Fail	N/A
§15.207 & RSS-GEN 8.8	Conducted emission AC power port	---	---	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
§15.247 (b) (3) & RSS-247 5.4(d)	Conducted peak output power	13-14	Site 1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
§15.247(a)(1) & RSS-247 5.1(b)	20dB bandwidth	---	---	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
§15.247(a)(1) & RSS-247 5.1(b)	Carrier frequency separation	---	---	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
§15.247(a)(1)(iii) & RSS-247 5.1(d)	Number of hopping frequencies	---	---	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
§15.247(a)(1)(iii) & RSS-247 5.1(d)	Dwell Time	---	---	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
§15.247(a)(2) & RSS-247 5.2(a) & RSSGEN 6.7	6dB bandwidth and 99% Occupied Bandwidth	---	---	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
§15.247(e) & RSS-247 5.2(b)	Power spectral density	---	---	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
§15.247(d) & RSS-247 5.5	Spurious RF conducted emissions	---	---	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
§15.247(d) & RSS-247 5.5	Band edge	---	---	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
§15.247(d) & §15.209 & RSS-247 5.5 & RSS-Gen 6.13	Spurious radiated emissions for transmitter	15-21	Site 1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
§15.203 & RSS-Gen 6.8	Antenna requirement	See note 1		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Remark 1: N/A – Not Applicable.

Note 1: The EUT uses a PCB antenna, which gain is 2.5dBi. In accordance to §15.203 and RSS-Gen 6.8, It is considered sufficiently to comply with the provisions of this section.



## 6 General Remarks

### Remarks

NOTICE: This report is a SUPPLEMENT OF PROJECT 708882003258-00. So the report is not valid without the report of 708882003258-00.

This report was based on the report 708882003258-00 for updating schematics in order to disable the reset IC.

So in this test report only test data of "Conducted peak output power" and "Spurious radiated emissions for transmitter" were new data, other tests were referred from 708882003258-00, and the test data are still effective.

This submittal(s) (test report) is intended for FCC ID: 2ANDL-TCWBRCU1, IC: 23243-TCWBRCU1 complies with Section 15.207, 15.209, 15.247 of the FCC Part 15, Subpart C Rules and RSS-247, RSS-GEN.

This report is only for the 2.4GHz Wi-Fi test report, for the 2.4GHz BLE test report please refer to 708882003259-01.

According to the client's declaration, the "ILAC – A2LA Accredited" symbol is added to the report.

### SUMMARY:

All tests according to the regulations cited on page 5 were

☒ - Performed

☐ - **Not** Performed

The Equipment under Test

☒ - **Fulfills** the general approval requirements.

☐ - **Does not** fulfill the general approval requirements.

Sample Received Date: March 12, 2021

Testing Start Date: March 14, 2021

Testing End Date: March 22, 2021



China

-TÜV SÜD Certification and Testing (China) Co., Ltd. Shanghai Branch

Reviewed by:

Prepared by:

Tested by:

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Jiaxi XU

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EMC Section Manager

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EMC Project Engineer

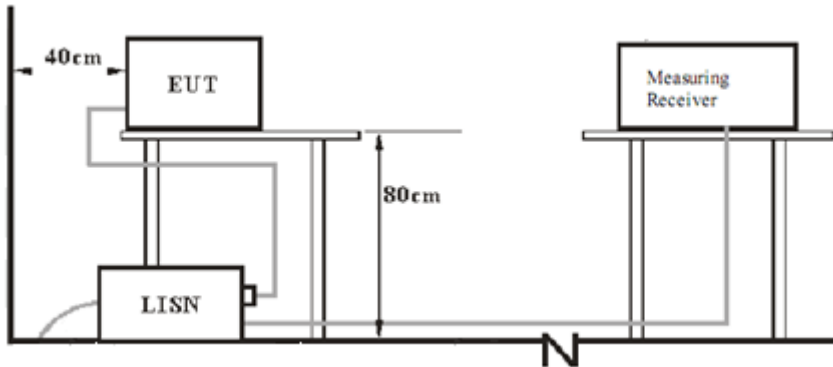
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Jiaxi XU  
EMC Test Engineer



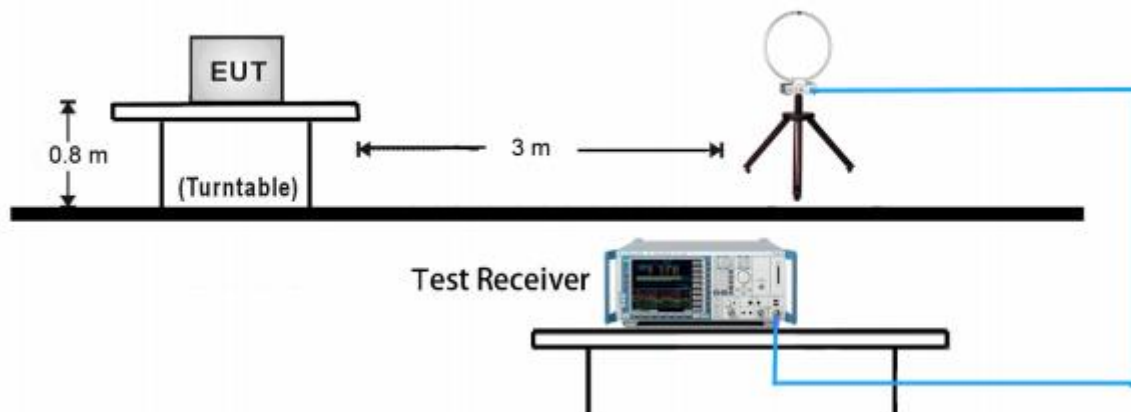
## 7 Test Setups

### 7.1 AC Power Line Conducted Emission test setups

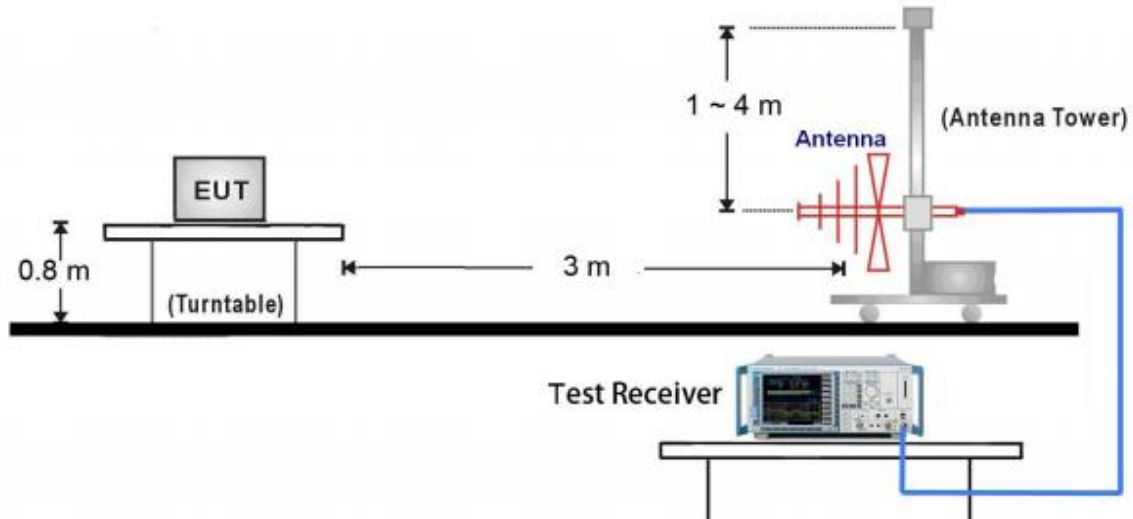


### 7.2 Radiated test setups

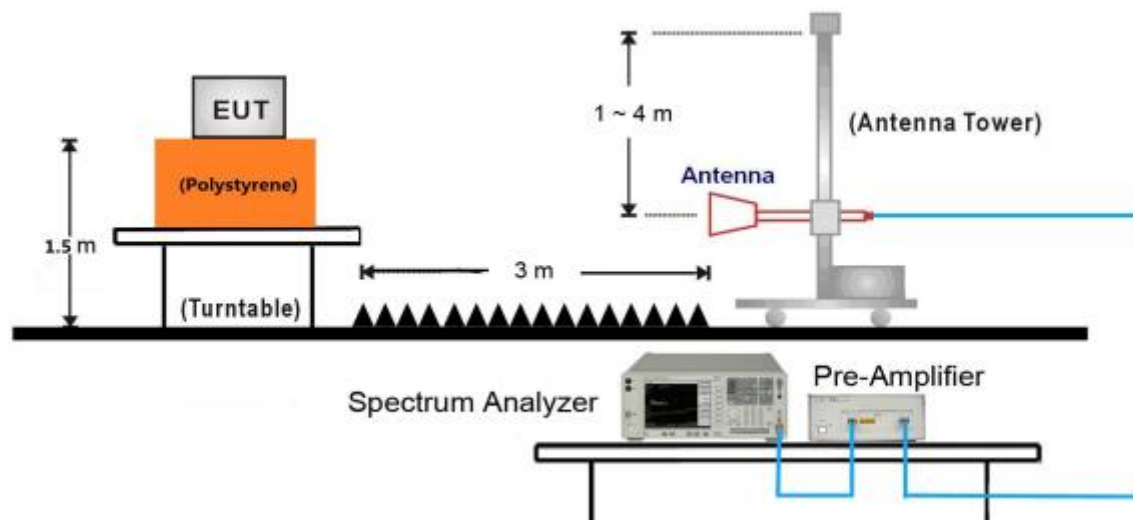
#### 9kHz ~ 30MHz Test Setup:



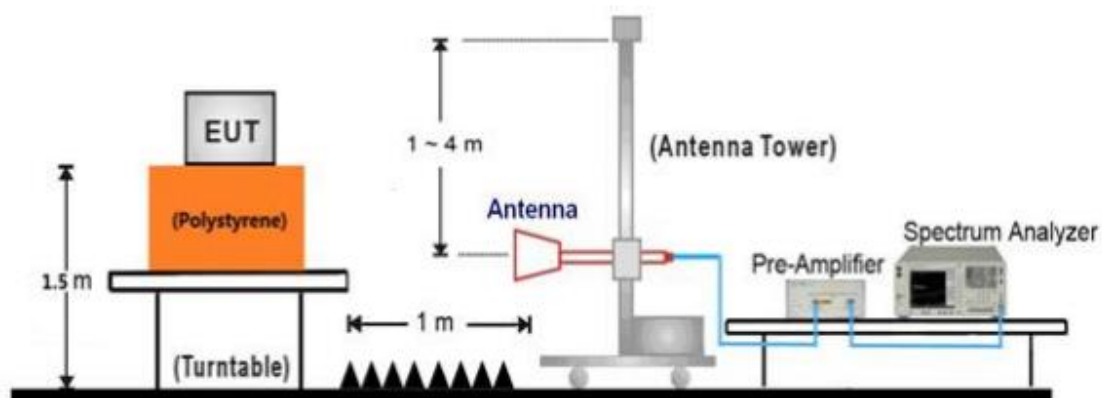
### 30MHz ~ 1GHz Test Setup:



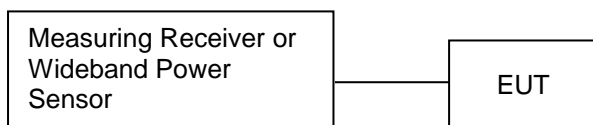
### 1GHz ~ 18GHz Test Setup:



### 18GHz ~ 25GHz Test Setup:



### 7.3 Conducted RF test setups





## 8 Systems test configuration

Auxiliary Equipment Used during Test:

DESCRIPTION	MANUFACTURER	MODEL NO.(SHIELD)	S/N(LENGTH)
Notebook	Lenove	X240	Notebook

Test software: AmebaD\_mptool\_2V1 for Wi-Fi  
Bluetooth RF Test Tool (REALTEK) for BLE

The system was configured to channel 1(2412MHz), 6(2437MHz), and 11(2462MHz) for 802.11 b/g/n HT20 test.

Non-hopping mode: The system was configured to operate at a signal channel transmitting. The test software allows the configuration and operation at the worst-case duty and the highest transmit power.

## 9 Technical Requirement

### 9.1 Conducted peak output power

#### Test Method

1. Use the following spectrum analyzer settings:  
RBW > the 6 dB bandwidth of the emission being measured, VBW $\geq$ 3RBW, Span $\geq$ 3RBW  
Sweep = auto, Detector function = peak, Trace = max hold.
2. Add a correction factor to the display.
3. Use a power meter to measure the conducted peak output power.

#### Limits

According to §15.247 (b) (1) & RSS-247 5.4(d), conducted peak output power limit as below:

Frequency Range MHz	Limit W	Limit dBm
2400-2483.5	$\leq 1$	$\leq 30$

Frequency Range MHz	Limit (EIRP) W	Limit dBm
2400-2483.5	$\leq 4$	$\leq 36$

Test result as below table

#### 802.11B

Frequency MHz	Conducted Peak Output Power dBm	Result
Low channel 2412MHz	17.82	Pass
Middle channel 2437MHz	17.67	Pass
High channel 2462MHz	18.12	Pass

#### 802.11G

Frequency MHz	Conducted Peak Output Power dBm	Result
Low channel 2412MHz	19.81	Pass
Middle channel 2437MHz	19.65	Pass
High channel 2462MHz	19.43	Pass

#### 802.11N20

Frequency MHz	Conducted Peak Output Power dBm	Result
Low channel 2412MHz	19.76	Pass
Middle channel 2437MHz	19.75	Pass
High channel 2462MHz	20.04	Pass



## 802.11B

Frequency MHz	EIRP dBm	Result
Low channel 2412MHz	20.32	Pass
Middle channel 2437MHz	20.17	Pass
High channel 2462MHz	20.62	Pass

## 802.11G

Frequency MHz	EIRP dBm	Result
Low channel 2412MHz	22.31	Pass
Middle channel 2437MHz	22.15	Pass
High channel 2462MHz	21.93	Pass

## 802.11N20

Frequency MHz	EIRP dBm	Result
Low channel 2412MHz	22.26	Pass
Middle channel 2437MHz	22.25	Pass
High channel 2462MHz	22.54	Pass

## 9.2 Spurious radiated emissions for transmitter

### Test Method

1. The EUT was placed on a turn table which is 1.5m above ground plane for above 1GHz and 0.8m above ground for below 1GHz at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
2. The EUT was set 3 meters away from the interference – receiving antenna, which was mounted on the top of a variable – height antenna tower.
3. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
5. Use the following spectrum analyzer settings According to C63.10:

#### For Below 1GHz

Use the following spectrum analyzer settings:

Span = wide enough to capture the peak level of the in-band emission and all spurious  
RBW = 100 kHz to 120 kHz, VBW ≥ RBW for peak measurement, Sweep = auto, Detector function = peak, Trace = max hold.

#### For Peak unwanted emissions Above 1GHz:

Span = wide enough to capture the peak level of the in-band emission and all spurious  
RBW = 1MHz, VBW ≥ RBW for peak measurement, Sweep = auto, Detector function = peak, Trace = max hold.

#### Procedures for average unwanted emissions measurements above 1000 MHz

- a) RBW = 1MHz.
- b) VBW ≥  $[3 \times \text{RBW}]$ .
- c) Detector = RMS (power averaging), if  $[\text{span} / (\# \text{ of points in sweep})] \leq \text{RBW} / 2$ .  
Satisfying this condition can require increasing the number of points in the sweep or reducing the span. If the condition is not satisfied, then the detector mode shall be set to peak.
- d) Averaging type = power (i.e., rms) (As an alternative, the detector and averaging type may be set for linear voltage averaging. Some instruments require linear display mode to use linear voltage averaging. Log or dB averaging shall not be used.)
- e) Sweep time = auto.
- f) Perform a trace average of at least 100 traces if the transmission is continuous. If the transmission is not continuous, then the number of traces shall be increased by a factor of  $1 / D$ , where D is the duty cycle. For example, with 50% duty cycle, at least 200 traces shall be averaged. (If a specific emission is demonstrated to be continuous—i.e., 100% duty cycle—then rather than turning ON and OFF with the transmit cycle, at least 100 traces shall be averaged.)
- g) If tests are performed with the EUT transmitting at a duty cycle less than 98%, then a correction factor shall be added to the measurement results prior to comparing with the emission limit, to compute the emission level that would have been measured had the test been performed at 100% duty cycle. The correction factor is computed as follows:
  - 1) If power averaging (rms) mode was used in the preceding step e), then the correction

factor is  $[10 \log (1 / D)]$ , where D is the duty cycle. For example, if the transmit duty cycle was 50%, then 3 dB shall be added to the measured emission levels.

2) If linear voltage averaging mode was used in the preceding step e), then the correction factor is  $[20 \log (1 / D)]$ , where D is the duty cycle. For example, if the transmit duty cycle was 50%, then 6 dB shall be added to the measured emission levels.

3) If a specific emission is demonstrated to be continuous (100% duty cycle) rather than turning ON and OFF with the transmit cycle, then no duty cycle correction is required for that emission.

## Limit

The radio emission outside the operating frequency band 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. Radiated emissions which fall in the restricted bands, as defined in section 15.205 and RSS-GEN 8.10, must comply with the radiated emission limits specified in section 15.209.

Frequency MHz	Field Strength uV/m	Measured Distance Meters
0.009~0.490	2400/F (kHz)	300
0.490~1.705	24000/F (kHz)	30
1.705~30	30	30

Frequency MHz	Field Strength uV/m	Field Strength dBμV/m	Detector
30-88	100	40	QP
88-216	150	43.5	QP
216-960	200	46	QP
960-1000	500	54	QP
Above 1000	500	54	AV
Above 1000	5000	74	PK



### Spurious radiated emissions for transmitter

According to C63.10, if the peak (or quasi-peak) measured value complies with the average limit, it is unnecessary to perform an average measurement, so AV emission value did not show in below table if the peak value complies with average limit.

The only worse case (which is subject to the maximum EIRP, N20 mode) test result is listed in the report.

### Transmitting spurious emission test result as below:

Test mode: 802.11B					
Channel 1 (2412MHz)					
Frequency (MHz)	Measure Level (dBuV/m)	Limit (dBuV/M)	Margin (dB)	Detector	Polarization
2381.4	44.7	74.0	29.3	Peak	Horizontal
4823.9	50.2	74.0	23.8	Peak	Horizontal
2383.2	43.4	74.0	30.6	Peak	Vertical
4823.9	46.3	74.0	27.7	Peak	Vertical

Test mode: 802.11B					
Channel 6 (2437MHz)					
Frequency (MHz)	Measure Level (dBuV/m)	Limit (dBuV/M)	Margin (dB)	Detector	Polarization
4873.7	50.2	74.0	23.8	Peak	Horizontal
4873.7	46.0	74.0	28	Peak	Vertical

Test mode: 802.11B					
Channel 11 (2462MHz)					
Frequency (MHz)	Measure Level (dBuV/m)	Limit (dBuV/M)	Margin (dB)	Detector	Polarization
2483.5	45.8	74.0	28.2	Peak	Horizontal
4924.2	49.0	74.0	25	Peak	Horizontal
2483.6	45.8	74.0	28.2	Peak	Vertical
4923.6	46.3	74.0	27.7	Peak	Vertical

#### Remark:

- (1) Emission level= Original Receiver Reading + Correct Factor
- (2) Correct Factor = Antenna Factor + Cable Loss -Amplifier gain
- (3) Margin = limit – Corrected Reading

Test mode: 802.11G					
Channel 1 (2412MHz)					
Frequency (MHz)	Measure Level (dBuV/m)	Limit (dBuV/M)	Margin (dB)	Detector	Polarization
2389.2	57.5	74.0	16.5	Peak	Horizontal
2389.2	43.3	54.0	10.7	Average	Horizontal
4823.9	45.6	74.0	28.4	Peak	Horizontal
2389.3	51.1	74.0	22.9	Peak	Vertical
4829.5	43.2	74.0	30.8	Peak	Vertical

Test mode: 802.11G					
Channel 6 (2437MHz)					
Frequency (MHz)	Measure Level (dBuV/m)	Limit (dBuV/M)	Margin (dB)	Detector	Polarization
4874.9	45.4	74.0	28.6	Peak	Horizontal
4576.8	43.6	74.0	30.4	Peak	Vertical

Test mode: 802.11G					
Channel 11 (2462MHz)					
Frequency (MHz)	Measure Level (dBuV/m)	Limit (dBuV/M)	Margin (dB)	Detector	Polarization
2483.6	54.7	74.0	19.3	Peak	Horizontal
2483.6	43.4	54.0	10.6	Average	Horizontal
4921.9	44.3	74.0	29.7	Peak	Horizontal
2483.7	47.4	74.0	26.6	Peak	Vertical
4345.0	43.6	74.0	30.4	Peak	Vertical

## Remark:

- (1) Emission level= Original Receiver Reading + Correct Factor
- (2) Correct Factor = Antenna Factor + Cable Loss -Amplifier gain
- (3) Margin = limit – Corrected Reading

Test mode: 802.11N20					
Channel 1 (2412MHz)					
Frequency (MHz)	Measure Level (dBuV/m)	Limit (dBuV/M)	Margin (dB)	Detector	Polarization
2389.9	63.5	74.0	10.5	Peak	Horizontal
2389.9	47.2	54.0	6.8	Average	Horizontal
4826.7	46.1	74.0	27.9	Peak	Horizontal
2389.9	55.0	74.0	19	Peak	Vertical
2389.9	39.3	54.0	14.7	Average	Vertical
5044.9	44.7	74.0	29.3	Peak	Vertical

Test mode: 802.11N20					
Channel 6 (2437MHz)					
Frequency (MHz)	Measure Level (dBuV/m)	Limit (dBuV/M)	Margin (dB)	Detector	Polarization
4409.1	43.8	74.0	30.2	Peak	Horizontal
5005.8	44.3	74.0	29.7	Peak	Vertical

Test mode: 802.11N20					
Channel 11 (2462MHz)					
Frequency (MHz)	Measure Level (dBuV/m)	Limit (dBuV/M)	Margin (dB)	Detector	Polarization
2483.7	50.5	74.0	23.5	Peak	Horizontal
5383.7	44.9	74.0	29.1	Peak	Horizontal
2483.8	45.0	74.0	29	Peak	Vertical
5864.3	46.9	74.0	27.1	Peak	Vertical

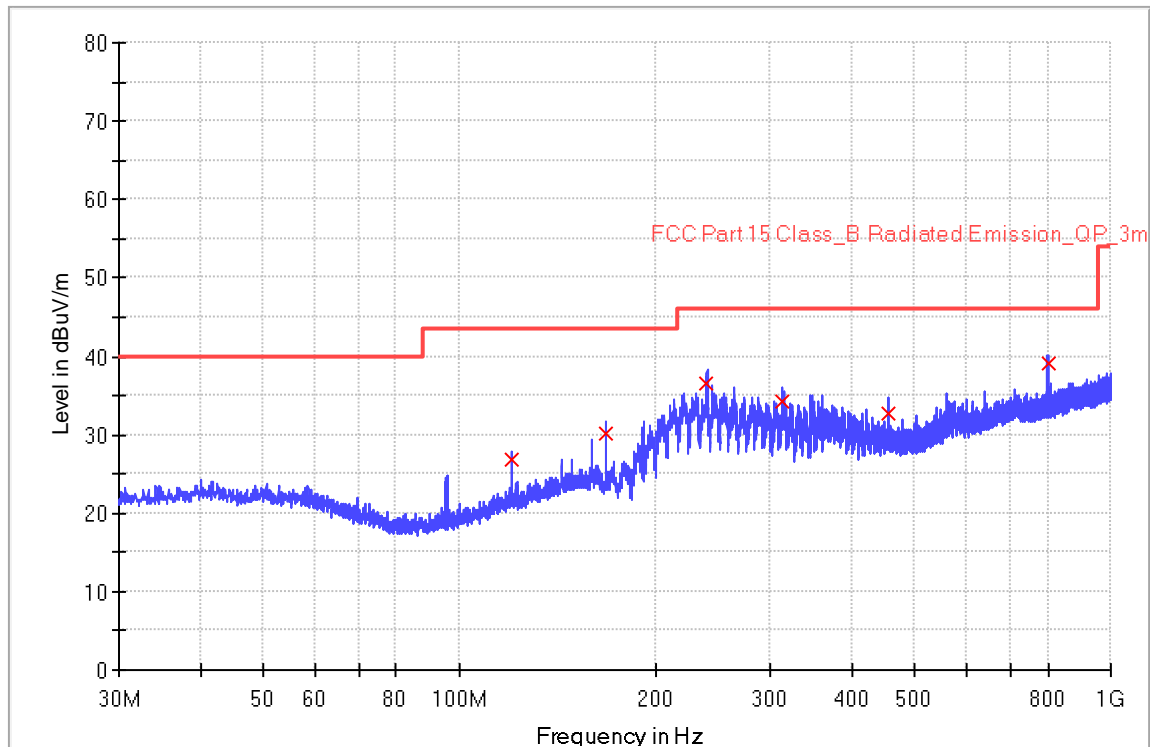
## Remark:

- (1) Emission level= Original Receiver Reading + Correct Factor
- (2) Correct Factor = Antenna Factor + Cable Loss -Amplifier gain
- (3) Margin = limit – Corrected Reading

The worst case of Radiated Emission below 1GHz:

Site: 3 meter chamber	Time: 2021/03/14 - 14:30
Limit: FCC_Part15.209 and RSS-GEN 8.8_RE(3m)	Engineer: Wenqiang LU
Probe: VULB9168	Polarity: Horizontal
UT: WIFI and Bluetooth module, Model no: TCWBRCU1	Power: 120VAC, 60Hz (powered by notebook)
Note: Transmit by at channel 2462MHz 802.11n20 (worst case).	
Note: Pre-scan with three orthogonal axis and worst case as X axis.	

RE\_VULB9168\_pre\_Cont\_30-1000



## Limit and Margin

Frequency (MHz)	QuasiPeak (dBuV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Margin - QPK (dB)	Limit - QPK (dBuV/m)
119.920000	26.7	1000.0	120.000	100.3	H	339.0	13.5	16.8	43.5
168.040000	30.0	1000.0	120.000	100.3	H	301.0	14.9	13.5	43.5
239.840000	36.5	1000.0	120.000	100.3	H	66.0	13.4	9.5	46.0
312.040000	34.2	1000.0	120.000	100.3	H	188.0	15.3	11.8	46.0
456.040000	32.7	1000.0	120.000	100.3	H	255.0	18.6	13.3	46.0
800.000000	39.1	1000.0	120.000	100.3	H	126.0	24.6	6.9	46.0

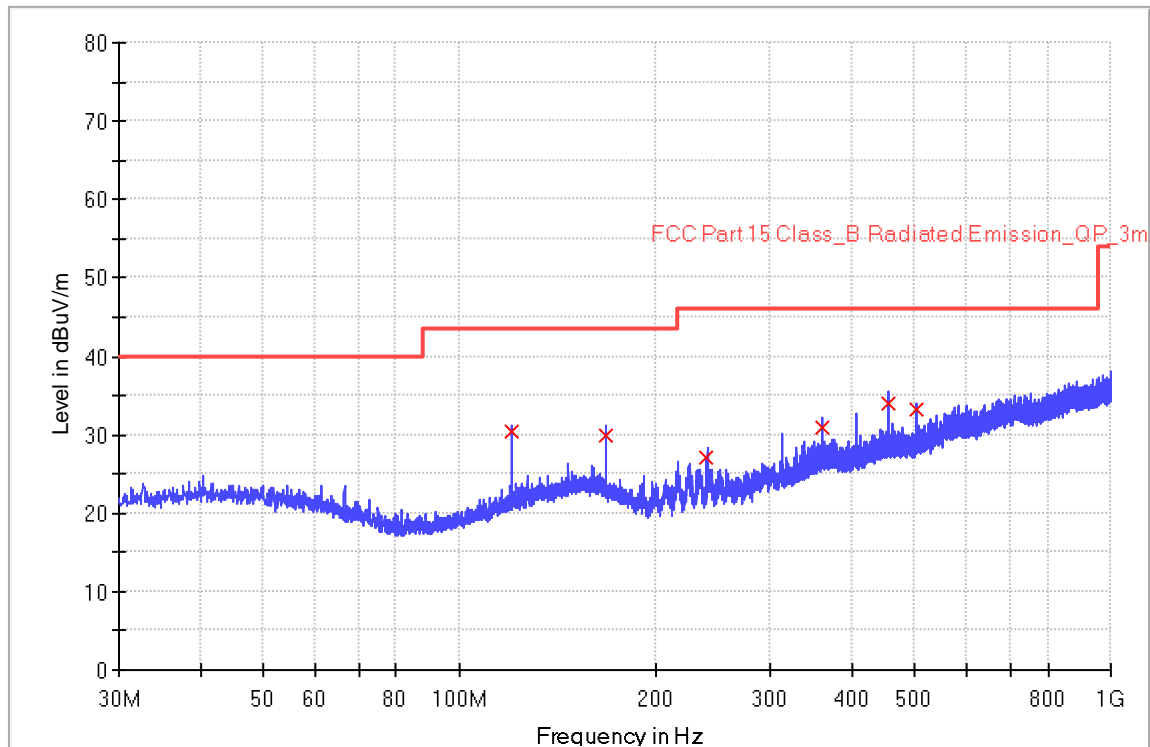
Note 1: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Note 2: The test trace is same as the ambient noise and the amplitude of the emissions are attenuated more than 20dB below the permissible (the test frequency range: 9kHz ~ 30MHz, 18GHz ~ 25GHz), therefore no data appear in the report.

Site: 3 meter chamber	Time: 2021/03/14 - 09:31
Limit: FCC_Part15.209 and RSS-GEN 8.8_RE(3m)	Engineer: Wenqiang LU
Probe: VULB9168	Polarity: Vertical
UT: WIFI and Bluetooth module, Model no: TCWBRCU1	Power: 120VAC, 60Hz (powered by notebook)
Note: Transmit by at channel 2462MHz 802.11n20 (worst case).	
Note: Pre-scan with three orthogonal axis and worst case as X axis.	

RE\_VULB9168\_pre\_Cont\_30-1000



## Limit and Margin

Frequency (MHz)	QuasiPeak (dBuV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Margin - QPK (dB)	Limit - QPK (dBuV/m)
120.000000	30.3	1000.0	120.000	100.3	V	43.0	13.5	13.2	43.5
168.000000	29.9	1000.0	120.000	100.3	V	83.0	14.9	13.7	43.5
239.440000	27.0	1000.0	120.000	100.3	V	308.0	13.4	19.0	46.0
360.040000	31.0	1000.0	120.000	100.3	V	204.0	16.5	15.0	46.0
455.960000	34.1	1000.0	120.000	100.3	V	247.0	18.6	11.9	46.0
503.960000	33.3	1000.0	120.000	100.3	V	353.0	19.6	12.7	46.0

Note 1: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Note 2: The test trace is same as the ambient noise and the amplitude of the emissions are attenuated more than 20dB below the permissible (the test frequency range: 9kHz ~ 30MHz, 18GHz ~ 25GHz), therefore no data appear in the report.



## 10 Test Equipment List

List of Test Instruments  
Test Site1

	DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	CAL. DATE	CAL. DUE DATE
C	Wideband power sensor	Rohde & Schwarz	NRP-Z81	104782	2020-12-23	2021-12-22
RE	EMI Test Receiver	Rohde & Schwarz	ESR3	101906	2020-8-4	2021-8-3
	Signal Analyzer	Rohde & Schwarz	FSV40	101091	2020-8-4	2021-8-3
	Trilog Super Broadband Test Antenna	Schwarzbeck	VULB 9168	961	2019-3-16	2022-3-15
	Horn Antenna	Rohde & Schwarz	HF907	102393	2018-6-11	2021-4-1
	Pre-amplifier	Rohde & Schwarz	SCU-18D	19006451	2020-8-4	2021-8-3
	Loop antenna	Rohde & Schwarz	HFH2-Z2	100443	2020-6-28	2021-6-27
	DOUBLE-RIDGED WAVEGUIDE HORN WITH PRE-AMPLIFIER (18 GHZ - 40 GHZ)	ETS-Lindgren	3116C-PA	002222727	2020-9-23	2021-9-22
	3m Semi-anechoic chamber	TDK	9X6X6	----	2018-5-11	2021-5-10
Measurement Software Information						
Test Item	Software	Manufacturer	Version			
C	Power Viewer	Rohde & Schwarz	V 11.0			
RE	EMC 32	Rohde & Schwarz	V9.15.00			

### C - Conducted RF tests

- Conducted peak output power
- 6dB bandwidth and 99% Occupied Bandwidth
- Power spectral density\*
- Spurious RF conducted emissions
- Band edge

## 11 System Measurement Uncertainty

For a 95% confidence level, the measurement expanded uncertainties for defined systems, in accordance with the recommendations of ISO 17025 were:

Items	Extended Uncertainty
Conducted Disturbance at Mains Terminals	150kHz to 30MHz, LISN, $\pm 3.16\text{dB}$
Radiated Disturbance	30MHz to 1GHz, $\pm 5.03\text{dB}$ (Horizontal) $\pm 5.12\text{dB}$ (Vertical) 1GHz to 18GHz, $\pm 5.49\text{dB}$ 18GHz to 40GHz, $\pm 5.63\text{dB}$
Carrier power conducted measurement	50MHz~18GHz, $\pm 1.238\text{dB}$
Spurious Emission Conducted Measurement	9kHz ~40GHz, $\pm 1.224\text{dB}$



## 12 Photographs of Test Set-ups

Refer to the < Test Setup photos >.





## 13 Photographs of EUT

Refer to the < External Photos > & < Internal Photos >.

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THE END