ZHEJIANG DAHUA VISION TECHNOLOGY CO.,LTD.

RF TEST REPORT

Report Type:
FCC Part 15.247 RF report

Model:
8812CU3

REPORT NUMBER:
220102160SHA-001

ISSUE DATE:
April 21, 2022

DOCUMENT CONTROL NUMBER:
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TEST REPORT

Report no.: 220102160SHA-001

Applicant:	ZHEJIANG DAHUA VISION TECHNOLOGY CO., LTD. No.1199, Bin'an Road, Binjiang District, Hangzhou, P.R. China
Manufacturer:	ZHEJIANG DAHUA VISION TECHNOLOGY CO., LTD. No.1199, Bin'an Road, Binjiang District, Hangzhou, P.R. China
FCC ID:	SVN-R8812AF

SUMMARY:

The equipment complies with the requirements according to the following standard(s) or Specification:
47CFR Part 15 (2020): Radio Frequency Devices (Subpart C) **ANSI C63.10 (2013):** American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices

PREPARED BY:	**REVIEWED BY:**
Project Engineer Sky Yang	Reviewer Wakeyou Wang

Content

TEST REPORT

Revision History

Report No.	Version	Description	Issued Date
220102160SHA-001	Rev. 01	Initial issue of report	April 21, 2022

Measurement result summary

TEST ITEM	FCC REFERENCE	RESULT
Minimum 6dB Bandwidth	15.247(a)(2)	Pass
Maximum conducted output power	15.247(b)(3)	Pass
Power spectrum density	15.247(e)	Pass
Emission outside the frequency band	15.247(d)	Pass
Radiated Emissions in restricted frequency bands	15.247(d), 15.205&15.209	Pass
Power line conducted emission	15.207(a)	Pass
Occupied bandwidth	-	Tested
Antenna requirement	15.203	Pass

Notes: 1: NA =Not Applicable

TEST REPORT

1 GENERAL INFORMATION

1.1 Description of Equipment Under Test (EUT)

Product name:	WiFi Module
Type/Model:	8812CU3
Description of EUT:	WiFi Module
Rating:	3.3Vdc
EUT type:	☒ Table top ☐ Floor standing
Software Version:	V1.0
Hardware Version:	v5.9.0.1_36324_ COEX20200103
Sample received date:	November 23, 2021
Date of test:	November 23, 2021 to March 21, 2022

1.2 Technical Specification

Frequency Range:	2400MHz ~ 2483.5MHz
Support Standards:	IEEE 802.11b, IEEE 802.11g, IEEE 802.11n-HT20, IEEE 802.11n40
Type of Modulation:	IEEE 802.11b: DSSS(CCK, DQPSK, DBPSK) IEEE 802.11g: OFDM(64-QAM, 16-QAM, QPSK, BPSK) IEEE 802.11n-HT20: OFDM(64-QAM, 16-QAM, QPSK, BPSK) IEEE 802.11n-HT40: OFDM(64-QAM, 16-QAM, QPSK, BPSK)
Channel Number:	IEEE 802.11b: 11 IEEE 802.11g: 11 IEEE 802.11n-HT20: 11 IEEE 802.11n-HT40: 9
Data Rate:	IEEE 802.11b: Up to 11 Mbps IEEE 802.11g: Up to 54 Mbps IEEE 802.11n-HT20: Up to MCS15 IEEE 802.11n-HT40: Up to MCS15
Channel Separation:	5 MHz

1.3 Antenna information

Antenna No.	Model	Antenna type	Antenna Gain	Note
1	PCB	PCB antenna	6.07dB	/
2	PCB	PCB antenna	5.15dB	/

Mode	Tx/Rx Function	Beamforming function	CDD function
802.11b	1Tx/1Rx	NO	NO
802.11g	1Tx/1Rx	NO	NO
802.11n-HT20	1Tx/1Rx	0	YES
802.11n-HT40	1Tx/1Rx	0	YES

Frequency band	Mode	Directional Gain	Note
2.4 GHz	802.11n-HT20	8.63dBi	
	802.11n-HT40	8.63dBi	

Note: Unequal antenna gains, with equal transmit powers. Directional gain is to be computed as follows: transmit signals are correlated, then
Directional gain = 10 log[(10^G1 /20 + 10^G2 /20 + … + 10^GN /20)^2 /N_{ANT}] dBi [Note the “20”s in the denominator of each exponent and the square of the sum of terms; the object is to combine the signal levels coherently.]

1.4 Description of Test Facility

Name:	Intertek Testing Services Shanghai
Address:	Building 86, No. 1198 Qinzhou Road(North), Shanghai 200233, P.R. China
Telephone:	86 21 61278200
Telefax:	86 21 54262353

The test facility is recognized, certified, or accredited by these organizations:	CNAS Accreditation Lab Registration No. CNAS L0139
	FCC Accredited Lab Designation Number: CN1175
	IC Registration Lab Registration code No.: 2042B-1
	VCCI Registration Lab Registration No.: R-14243, G-10845, C-14723, T-12252
	A2LA Accreditation Lab Certificate Number: 3309.02

All tests were sub-contracted.

Shenzhen UnionTrust Quality and Technology Co., Ltd.

Address: Unit D/E of 9/F and 16/F, Block A, Building 6, Baoneng Science and Technology Park, Longhua District, Shenzhen, China 518109

Telephone: +86 (0) 755 2823 0888

Fax: +86 (0) 755 2823 0886

All tests were sub-contracted at Shenzhen UnionTrust Quality and Technology Co., Ltd, and conducted by Kieron Luo

Reviewed and approved by Wakeyou Wang from Intertek Testing Services Shanghai.

The test facility is recognized, certified, or accredited by the following organizations:

CNAS-Lab Code: L9069

The measuring equipment utilized to perform the tests documented in this report has been calibrated once a year or in accordance with the manufacturer's recommendations, and is traceable under the ISO/IEC/EN 17025 to international or national standards. Equipment has been calibrated by accredited calibration laboratories.

TEST REPORT

IC-Registration No.: 21600-1

The 3m Semi-anechoic chamber of Shenzhen UnionTrust Quality and Technology Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 21600-1.

A2LA-Lab Certificate No.: 4312.01

Shenzhen UnionTrust Quality and Technology Co., Ltd. has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2005 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

FCC Accredited Lab.

Designation Number: CN1194

Test Firm Registration Number: 259480

2 TEST SPECIFICATIONS

2.1 Standards or specification

47CFR Part 15 (2020)
ANSI C63.10 (2013)
KDB 558074 (v05or02)

2.2 Mode of operation during the test

While testing transmitting mode of EUT, the continuously transmission was applied by following software.

Software name	Manufacturer	Version	Supplied by
REALTEK 11ac 8822CU USB WLAN NIC Massproduction Kit.exe	NA	V10.01	Client

The lowest, middle and highest channel were tested as representatives.

Frequency Band (MHz)	Modulation	Lowest (L) (MHz)	Middle (M) (MHz)	Highest (H) (MHz)
2400-2483.5	IEEE 802.11b	2412	2437	2462
2400-2483.5	IEEE 802.11g	2412	2437	2462
2400-2483.5	IEEE 802.11n-HT20	2412	2437	2462
2400-2483.5	IEEE 802.11n-HT40	2422	2437	2452

2.3 Test software list

Test Items	Software	Manufacturer	Version
Radiated emission	e3	Audix	9.160323
Conducted emission	e3	Audix	9 20151119i

2.4 Test peripherals list

Item No.	Name	Band and Model	Description
1	Laptop computer	DELL, Latitude 3400	NA

2.5 Test environment condition:

Test items	Temperature	Humidity
Minimum 6dB Bandwidth	24.3°C	51% RH
Maximum conducted output power		
Power spectrum density		
Emission outside the frequency band		
Occupied bandwidth		
Radiated Emissions in restricted frequency bands	24.1°C	49% RH
Power line conducted emission	24.9°C	48% RH

2.6 Instrument list

Radiated Emission					
Used	Equipment	Manufacturer	Type	Internal no.	Due date
☒	3m Chamber SAC	ETS-LINDGREN	3m	NA	2024-01-21
☒	Receiver	R&S	ESIB26	100114	2022-11-04
☒	Broadband Antenna (Pre-amplifier)	ETS-Lindgren	3142E-PA	00201891	2023-04-29
☒	6dB Attenuator	Talent	RA6A5-N-18	18103001	2023-11-10
☒	Preamplifier	HP	8447F	2805A02960	2022-11-04
☒	Double-Ridged Waveguide Horn Antenna (Pre-amplifier)	ETS-Lindgren	3117-PA	00201541	2023-04-29
☒	Pre-amplifier	ETS-Lindgren	00118385	00201874	2022-11-05
☒	Band Reject Filter(2400MHz~2500MHz)	Micro-Tronics	BRM50702	G248	2022-11-05
☒	Test Software	Audix	e3	Software Version: 9.160323	
RF test					
Used	Equipment	Manufacturer	Type	Internal no.	Due date
☒	MXG X-Series RF Vector Signal Generator	KEYSIGHT	N5182B	MY51350267	2022-11-04
☒	EXA Signal Analyzer	KEYSIGHT	N9010A	MY51440197	2022-04-21
☒	USB Wideband Power Sensor	KEYSIGHT	U2021XA	MY55430035	2022-11-04
☒	USB Wideband Power Sensor	KEYSIGHT	U2021XA	MY55430023	2022-11-04
☒	Test Software	AutomationTestSystem	ECIT	Software Version: 1.0.7515.16529	

Conducted Emission Test Equipment List					
Used	Equipment	Manufacturer	Model No.	Serial Number	Cal. Due date (mm dd, yyyy)
☒	Receiver	R&S	ESR7	1316.3003K07-101181-K3	Nov. 04, 2022
☒	Pulse Limiter	R&S	ESH3-Z2	0357.8810.54	Nov. 04, 2022
☒	LISN	R&S	ESH2-Z5	860014/024	Nov. 04, 2022

2.7 Measurement uncertainty

The measurement uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

Test item	Measurement uncertainty
Maximum peak output power	± 0.68dB
Radiated Emissions in restricted frequency bands below 1GHz	± 4.90dB
Radiated Emissions in restricted frequency bands above 1GHz	± 4.80dB
Emission outside the frequency band	± 4.80dB
Power line conducted emission	± 2.7dB

2.8 DUTY CYCLE

Mode	Data rates (Mbps)	On Time (msec)	Period (msec)	Duty Cycle (%)	Duty Cycle Factor (dB)	1/ T Minimum VBW (kHz)	Average Factor (dB)
IEEE 802.11b	1	8.12	8.715	93.17	0.31	0.12	-0.61
IEEE 802.11g	6	1.351	1.862	72.56	1.39	0.74	-2.79
IEEE 802.11n-HT20	MCS8	0.652	1.164	56.01	2.52	1.53	-5.03
IEEE 802.11n-HT40	MCS8	0.334	0.841	39.71	4.01	2.99	-8.02

Remark:

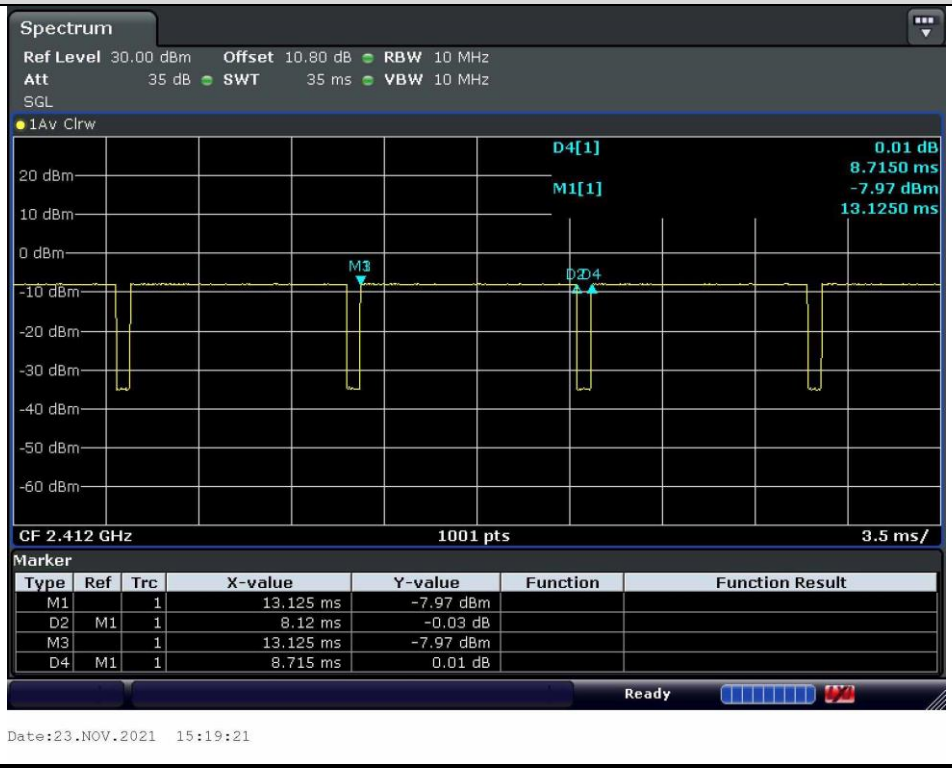
1) Duty cycle= On Time/ Period;

2) Duty Cycle factor = 10 * log(1/ Duty cycle);

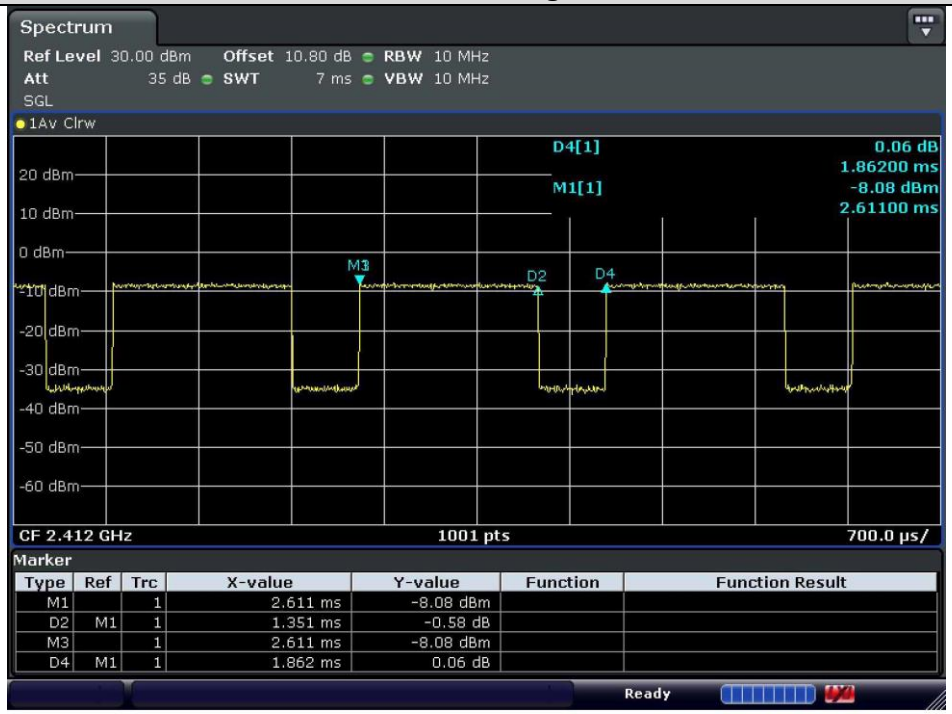
3) Average factor = 20 $\log_{10}$ Duty Cycle.

The test plots as follows

IEEE 802.11b



IEEE 802.11g



Date:23.NOV.2021 15:20:29

IEEE 802.11n-HT20

Date:23.NOV.2021 15:22:59

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IEEE 802.11n-HT40

3 Minimum 6dB bandwidth

Test result: Pass

3.1 Limit

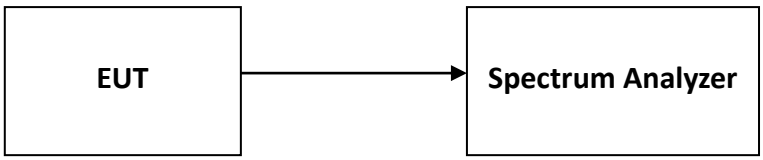
For systems using digital modulation techniques that may operate in the 902 - 928 MHz, 2400 - 2483.5 MHz and 5725 - 5850 MHz bands, the minimum 6 dB bandwidth shall be at least 500 kHz.

3.2 Measurement Procedure

The minimum 6dB bandwidth is measured using the Spectrum Analyzer according to DTS test procedure of “KDB558074 D01 DTS Meas Guidance” (clause 8.2) for compliance requirements.

a) Set RBW = 100 kHz.
b) Set the video bandwidth (VBW) ≥ 3 × RBW.
c) Detector = Peak.
d) Trace mode = max hold.
e) Sweep = auto couple.
f) Allow the trace to stabilize.
g) Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

3.3 Test Configuration



3.4 Test Results of Minimum 6dB bandwidth

Test data reference “Appendix of 220102160SHA-001_15.247-WIFI_Appendix” Appendix A

4 Maximum conducted output power

Test result: Pass

4.1 Limit

For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 W.

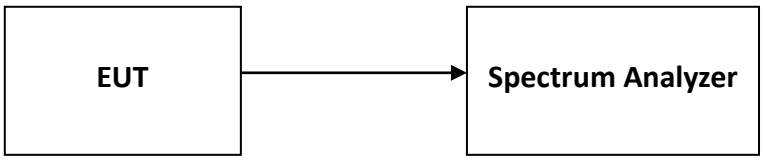
If the transmitting antenna of directional gain greater than 6dBi is used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi. If there have a beam forming type, the limit should be the minimum of 30dBm and 30+ (6 –antenna gain-beam forming gain).

4.2 Measurement Procedure

The EUT was tested according to DTS test procedure of “KDB558074 D01 DTS Meas Guidance” (clause 9.2.2.4) for compliance requirements.

a) Measure the duty cycle, x, of the transmitter output signal as described in Section 6.0.
b) Set span to at least 1.5 x OBW.
c) Set RBW = 1 % to 5 % of the OBW, not to exceed 1 MHz.
d) Set VBW ≥ 3 x RBW.
e) Number of points in sweep ≥ 2 x span / RBW. (This gives bin-to-bin spacing ≤ RBW/2, so that narrowband signals are not lost between frequency bins.)
f) Sweep time = auto.
g) Detector = RMS (i.e., power averaging), if available. Otherwise, use sample detector mode.
h) Do not use sweep triggering. Allow the sweep to “free run”.
i) Trace average at least 100 traces in power averaging (i.e., RMS) mode; however, the number of traces to be averaged shall be increased above 100 as needed such that the average accurately represents the true average over the on and off periods of the transmitter.
j) Compute power by integrating the spectrum across the OBW of the signal using the instrument’s band power measurement function with band limits set equal to the OBW band edges. If the instrument does not have a band power function, sum the spectrum levels (in power units) at intervals equal to the RBW extending across the entire OBW of the spectrum.
k) Add 10 log (1/x), where x is the duty cycle, to the measured power in order to compute the average power during the actual transmission times (because the measurement represents an average over both the on- and off-times of the transmission). For example, add 10 log (1/0.25) = 6 dB if the duty cycle is 25 %.

4.3 Test Configuration



4.4 Test Results of Maximum conducted output power

Test data reference “Appendix of 220102160SHA-001_15.247-WIFI_Appendix” Appendix B

5 Power spectrum density

Test result: **Pass**

5.1 Limit

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8dBm in any 3 kHz band during any time interval of continuous transmission.

If the transmitting antenna of directional gain greater than 6dBi is used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi. If there have a beam forming type, the limit should be the minimum of 8dBm/MHz and 8+ (6 –antenna gain-beam forming gain).

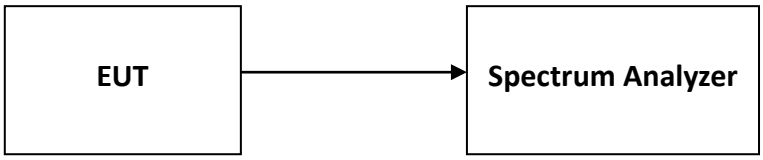
5.2 Measurement Procedure

The power output was tested according to DTS test procedure of “KDB558074 D01 DTS Meas Guidance” (clause 10.5) for compliance requirements.

This procedure is applicable when the EUT cannot be configured to transmit continuously (i.e., duty cycle < 98 %), and when sweep triggering/signal gating cannot be used to measure only when the EUT is transmitting at its maximum power control level, and when the transmission duty cycle is constant (i.e., duty cycle variations are less than ± 2 %):

a) Measure the duty cycle (x) of the transmitter output signal as described in Section 6.0.
b) Set instrument center frequency to DTS channel center frequency.
c) Set span to at least 1.5 x OBW.
d) Set RBW to: 3 kHz ≤ RBW ≤ 100 kHz.
e) Set VBW ≥3 x RBW.
f) Detector = power averaging (RMS) or sample detector (when RMS not available).
g) Ensure that the number of measurement points in the sweep ≥ 2 x span/RBW.
h) Sweep time = auto couple.
i) Do not use sweep triggering. Allow sweep to “free run”.
j) Employ trace averaging (RMS) mode over a minimum of 100 traces.
k) Use the peak marker function to determine the maximum amplitude level.
l) Add 10 log (1/x), where x is the duty cycle measured in step (a, to the measured PSD to compute the average PSD during the actual transmission time.
m) If resultant value exceeds the limit, then reduce RBW (no less than 3 kHz) and repeat (note that this may require zooming in on the emission of interest and reducing the span in order to meet the minimum measurement point requirement as the RBW is reduced).

5.3 Test Configuration



5.4 Test Results of Power spectrum density

Test data reference “Appendix of 220102160SHA-001_15.247-WIFI_Appendix” Appendix C

6 Emission outside the frequency band

Test result: **Pass**

6.1 Limit

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum 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.

6.2 Measurement Procedure

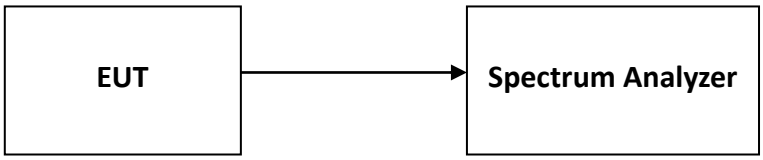
The EUT was tested according to DTS test procedure of “KDB558074 D01 DTS Meas Guidance” (clause 11.0) for compliance requirements.

Reference level measurement
Establish a reference level by using the following procedure:
a) Set instrument center frequency to DTS channel center frequency.
b) Set the span to ≥ 1.5 times the DTS bandwidth.
c) Set the RBW = 100 kHz.
d) Set the VBW ≥ 3 x RBW.
e) Detector = peak.
f) Sweep time = auto couple.
g) Trace mode = max hold.
h) Allow trace to fully stabilize.
i) Use the peak marker function to determine the maximum PSD level.

Emission level measurement
a) Set the center frequency and span to encompass frequency range to be measured.
b) Set the RBW = 100 kHz.
c) Set the VBW ≥ 3 x RBW.
d) Detector = peak.
e) Sweep time = auto couple.
f) Trace mode = max hold.
g) Allow trace to fully stabilize.
h) Use the peak marker function to determine the maximum amplitude level.

Ensure that the amplitude of all unwanted emissions outside of the authorized frequency band (excluding restricted frequency bands) are attenuated by at least the minimum requirements specified in 11.1 a) or 11.1 b). Report the three highest emissions relative to the limit.

6.3 Test Configuration



6.4 The results of Emission outside the frequency band

Test data reference “Appendix of 220102160SHA-001_15.247-WIFI_Appendix” Appendix D

7 Radiated Emissions in restricted frequency bands

Test result: **Pass**

7.1 Limit

The radiated emissions which fall in the restricted bands, must also comply with the radiated emission limits specified showed as below:

Frequencies (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

7.2 Measurement Procedure

For Radiated emission below 30MHz:

a) The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.
b) The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
c) Both X and Y axes of the antenna are set to make the measurement.
d) For each suspected emission, the EUT was arranged to its worst case and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
e) The test-receiver system was set to Quasi-Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 9kHz at frequency below 30MHz.

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For Radiated emission above 30MHz:

a) The EUT was placed on the top of a rotating table 0.8 meters (for 30MHz ~ 1GHz) / 1.5 meters (for above 1GHz) above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.

b) The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c) 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.

d) 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.

e) The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.

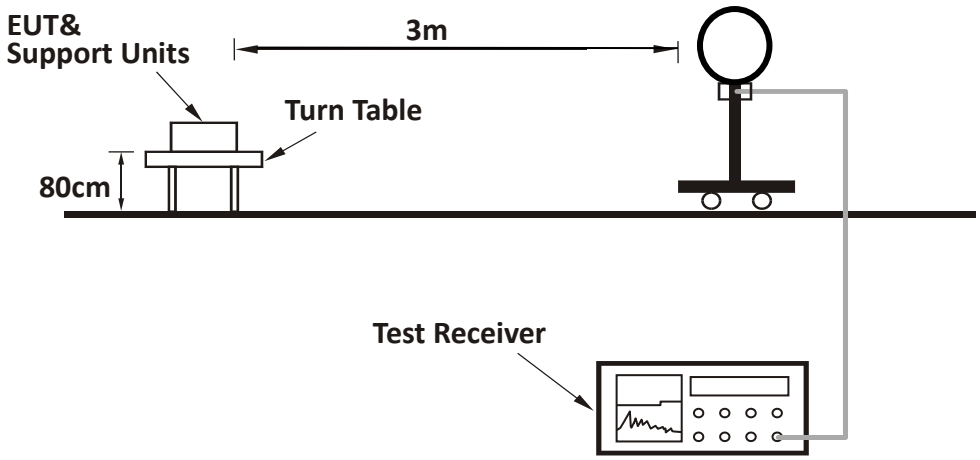
f) The test-receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

Note:

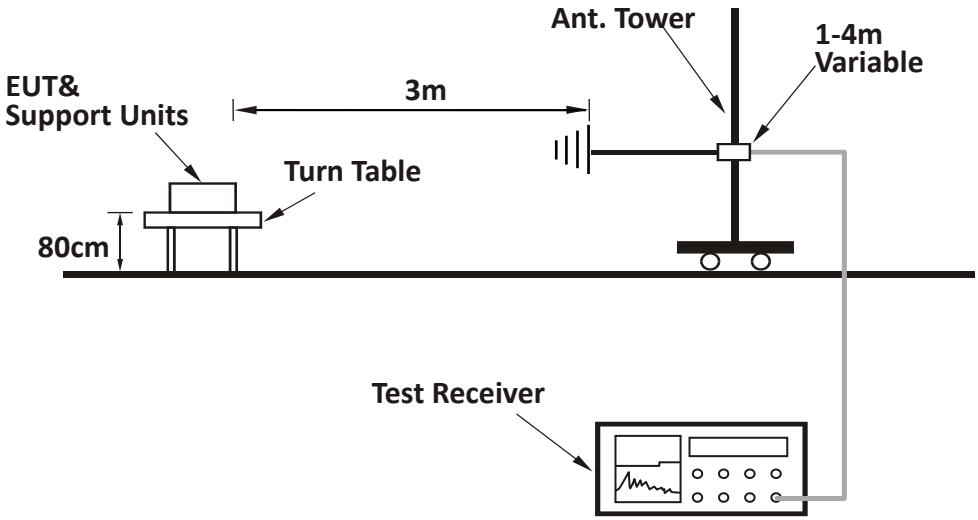
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is ≥ 1/T (Duty cycle < 98%) or 3 x RBW (Duty cycle ≥ 98%) for Average detection (AV) at frequency above 1GHz.
4. All modes of operation were investigated and the worst-case emissions are reported

7.3 Test Configuration

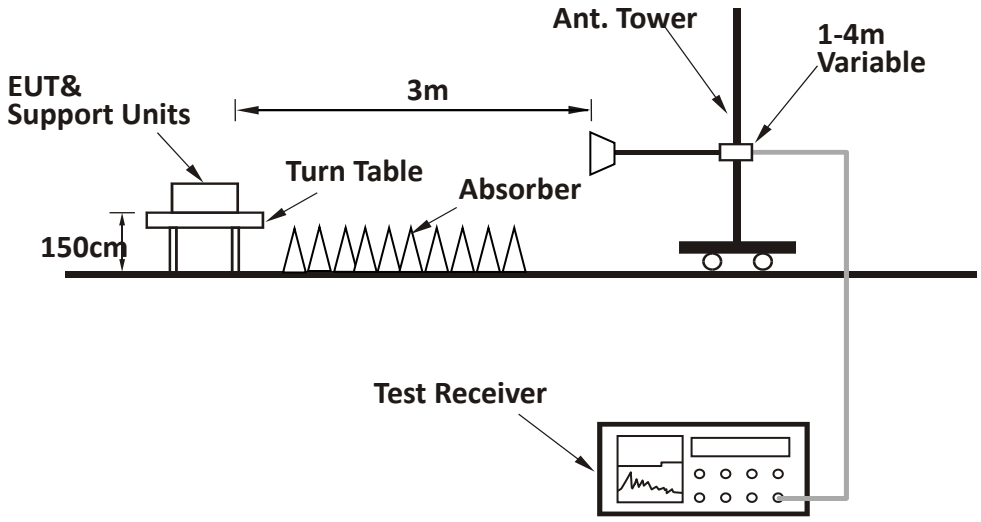
For Radiated emission below 30MHz:



For Radiated emission 30MHz to 1GHz:



For Radiated emission above 1GHz:



7.4 Test Results of Radiated Emissions

Test data reference “Appendix of 220102160SHA-001_15.247-WIFI_Appendix” Appendix E

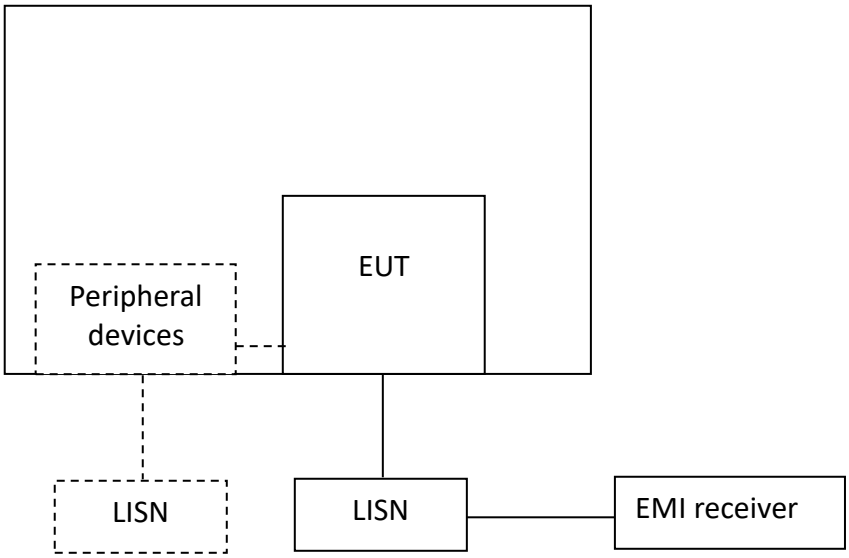
8 Power line conducted emission

Test result: **Pass**

8.1 Limit

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	QP	AV
0.15-0.5	66 to 56*	56 to 46 *
0.5-5	56	46
5-30	60	50
* Decreases with the logarithm of the frequency.		

8.2 Test Configuration



8.3 Measurement Procedure

Measured levels of ac power-line conducted emission shall be the emission voltages from the voltage probe, where permitted, or across the 50 Ω LISN port (to which the EUT is connected), where permitted, terminated into a 50 Ω measuring instrument. All emission voltage and current measurements shall be made on each current-carrying conductor at the plug end of the EUT power cord by the use of mating plugs and receptacles on the LISN, if used. Equipment shall be tested with power cords that are normally supplied or recommended by the manufacturer and that have electrical and shielding characteristics that are the same as those cords normally supplied or recommended by the manufacturer. For those measurements using a LISN, the 50 Ω measuring port is terminated by a measuring instrument having 50 Ω input impedance. All other ports are terminated in 50 Ω loads.

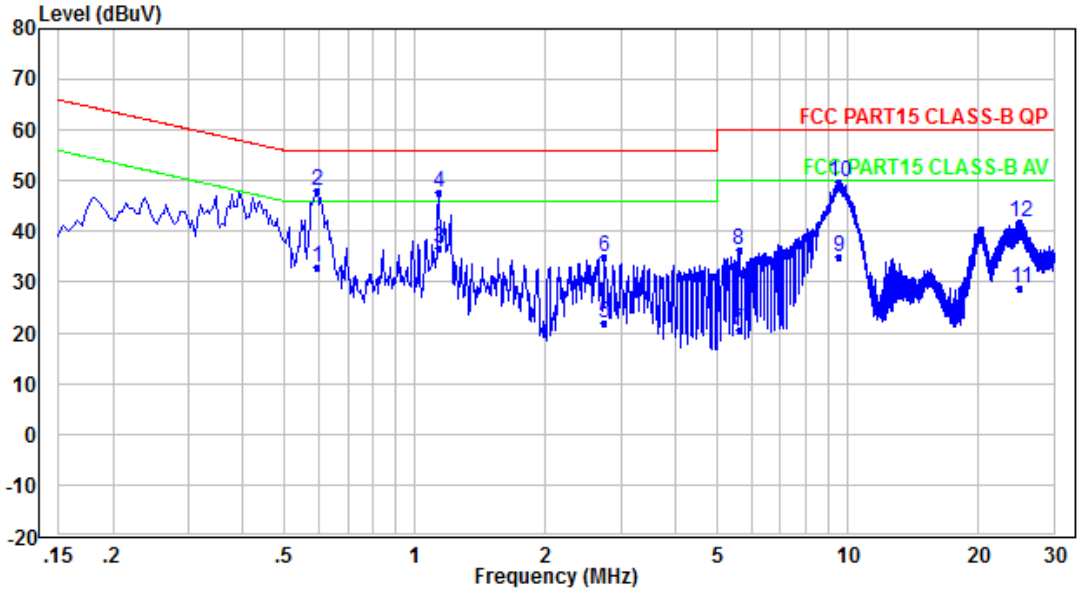
Tabletop devices shall be placed on a platform of nominal size 1 m by 1.5 m, raised 80 cm above the reference ground plane. The vertical conducting plane or wall of an RF-shielded (screened) room shall be located 40 cm to the rear of the EUT. Floor-standing devices shall be placed either directly on the reference ground-plane or on insulating material as described in ANSI C63.4. All other surfaces of tabletop or floor-standing EUTs shall be at least 80 cm from any other grounded conducting surface, including the case or cases of one or more LISNs.

The bandwidth of the test receiver is set at 9 kHz.

8.4 Test Results of Power line conducted emission

Test Curve:

Live Line

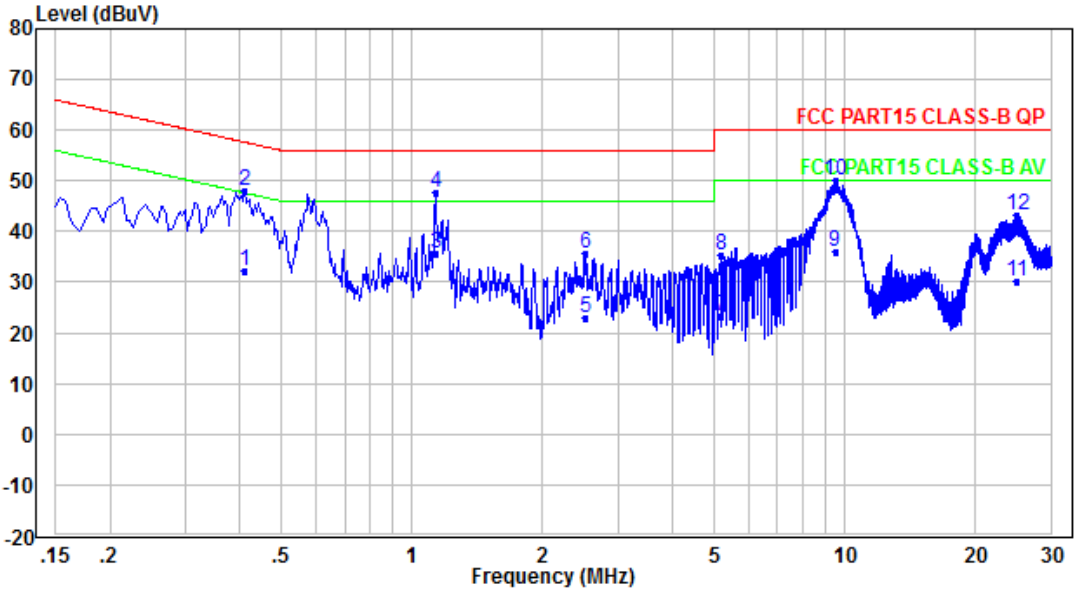


Test Data:

Frequency (MHz)	Quasi-peak			Average		
	Level dB(μV)	Limit dB(μV)	Margin (dB)	Level dB(μV)	Limit dB(μV)	Margin (dB)
0.596	47.89	56.00	8.11	32.89	46.00	13.11
1.134	47.82	56.00	8.18	36.82	46.00	9.18
2.748	34.97	56.00	21.03	21.97	46.00	24.03
5.610	36.39	60.00	23.61	20.39	50.00	29.61
9.517	49.87	60.00	10.13	34.87	50.00	15.13
25.100	41.90	60.00	18.10	28.90	50.00	21.10

TEST REPORT

Neutral Line



Test Data:

Frequency (MHz)	Quasi-peak			Average		
	Level dB(μV)	Limit dB(μV)	Margin (dB)	Level dB(μV)	Limit dB(μV)	Margin (dB)
0.410	48.09	57.65	9.56	32.09	47.65	15.56
1.134	47.61	56.00	8.39	35.61	46.00	10.39
2.528	35.82	56.00	20.18	22.82	46.00	23.18
5.170	35.45	60.00	24.55	23.45	50.00	26.55
9.513	49.95	60.00	10.05	35.95	50.00	14.05
24.966	43.20	60.00	16.80	30.20	50.00	19.80

Remark:

1. *Correct Factor = LISN Factor + Cable Loss, the value was added to Original Receiver Reading by the software automatically.*
2. *Level = Original Receiver Reading + Correct Factor*
3. *Margin = Limit - Level*
4. *All possible modes of operation were investigated, only the worst-case emissions reported.*

9 Antenna requirement

Requirement:
An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.

Result:
EUT uses permanently attached antenna to the intentional radiator, so it can comply with the provisions of this section.

Appendix I: Photograph of test setup

See test photos attached in Appendix 1 for the actual connections between Product and support equipment.

Appendix II: Photograph of equipment under test

Refer to Appendix 2 for EUT external and internal photos.

********** END **********