

RADIO PERFORMANCE TEST REPORT

Test Report No. : OT-22O-RWD-026

Reception No. : 2209003110

Applicant : LG Electronics USA

Address : 111 Sylvan Avenue North Building, Englewood Cliffs, New Jersey, United States

Manufacturer : Hitachi-LG Data Storage Korea, Inc.

Address : (Gasam-dong), 189, Gasandigital1-ro, Geumcheon-gu, Seoul, Korea

Type of Equipment : Network Webcam

FCC ID. : BEJAN-VC22PR

Model Name : AN-VC22PR

Multiple Model Name : HL-GE1

Serial number : N/A

Total page of Report : 76 pages (including this page)

Date of Incoming : August 12, 2022

Date of issue : October 21, 2022

SUMMARY

The equipment complies with the regulation; **FCC PART 15 SUBPART C Section 15.247**

This test report only contains the result of a single test of the sample supplied for the examination.

It is not a generally valid assessment of the features of the respective products of the mass-production.

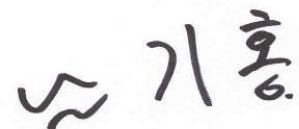
This report is not correlated with the "KS Q ISO/IEC 17025 and KOLAS accreditation" of Korean Laboratory Accreditation Scheme.



Tested by
Sieon Lee / Assistant Manager
ONETECH Corp.



Reviewed by
Tae-Ho, Kim / General Manager
ONETECH Corp.



Approved by
Ki-Hong, Nam / General Manager
ONETECH Corp.

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※ Please refer to the Appendix section for All test plots

Revision History

Rev. No.	Issue Report No.	Issued Date	Revisions	Section Affected
0	OT-22O-RWD-026	October 21, 2022	Initial Release	All

1. VERIFICATION OF COMPLIANCE

Applicant : LG Electronics USA
Address : 111 Sylvan Avenue North Building, Englewood Cliffs, New Jersey, United States
Contact Person : Sung Soo, Kim / Director, Regulatory and Environmental Affairs
Telephone No. : 201-266-2215
FCC ID : BEJAN-VC22PR
Model Name : AN-VC22PR
Brand Name : LG
Serial Number : N/A
Date : October 21, 2022

EQUIPMENT CLASS	DTS – DIGITAL TRNSMISSION SYSTEM
E.U.T. DESCRIPTION	Network Webcam
THIS REPORT CONCERNS	Original Grant
MEASUREMENT PROCEDURES	ANSI C63.10: 2013
TYPE OF EQUIPMENT TESTED	Pre-Production
KIND OF EQUIPMENT AUTHORIZATION REQUESTED	Certification
EQUIPMENT WILL BE OPERATED UNDER FCC RULES PART(S)	FCC PART 15 SUBPART C Section 15.247 KDB 558074 D01 15.247 Meas Guidance v05r02
Modifications on the Equipment to Achieve Compliance	None
Final Test was Conducted On	3 m, Semi Anechoic Chamber

-. The above equipment was tested by ONETECH Corp. for compliance with the requirement set forth in the FCC Rules and Regulations. This said equipment in the configuration described in this report, shows the maximum emission levels emanating from equipment are within the compliance requirements.

2. TEST SUMMARY

2.1 Test items and results

SECTION	TEST ITEMS	RESULTS
15.247 (a) (2)	Minimum 6 dB Bandwidth	Met the Limit / PASS
15.247 (b) (3)	Maximum Conducted(average) Output Power	Met the Limit / PASS
15.247 (d)	100 kHz Bandwidth Outside the Frequency Band	Met the Limit / PASS
15.247 (d)	Radiated Emission which fall in the Restricted Band	Met the Limit / PASS
15.247 (e)	Peak Power Spectral Density	Met the Limit / PASS
15.209	Radiated Emission Limits	Met the Limit / PASS
15.207	Conducted Limits	Met the Limit / PASS
15.203	Antenna Requirement	Met requirement / PASS

2.2 Additions, deviations, exclusions from standards

No additions, deviations or exclusions have been made from standard.

2.3 Related Submittal(s) / Grant(s)

Original submittal only

2.4 Purpose of the test

To determine whether the equipment under test fulfills the requirements of the regulation stated in FCC PART 15 SUBPART C Section 15.247.

2.5 Test Methodology

Both conducted and radiated testing was performed according to the procedures in ANSI C63.10: 2013. Radiated testing was performed at a distance of 3 m from EUT to the antenna.

2.6 Test Facility

The Onetech Corp. has been designated to perform equipment testing in compliance with ISO/IEC 17025.

The Electromagnetic compatibility measurement facilities are located at 43-14, Jinsaegol-gil, Chowol-eup, Gwangju-si, Gyeonggi-do, 12735, Korea.

-. Site Filing:

VCCI (Voluntary Control Council for Interference) – Registration No. R-20122/ C-14617/ G-10666/ T-11842

ISED (Innovation, Science and Economic Development Canada) – Registration No. Site# 3736A-3

KOLAS (Korea Laboratory Accreditation Scheme) - Accreditation NO. KT085

FCC (Federal Communications Commission) - Accreditation No. KR0013

RRA (Radio Research Agency) – Designation No. KR0013

3. GENERAL INFORMATION

3.1 Product Description

The LG Electronics USA, Model AN-VC22PR (referred to as the EUT in this report) is a Network Webcam. The product specification described herein was obtained from product data sheet or user's manual.

DEVICE TYPE	Network Webcam	
OPERATING FREQUENCY	Bluetooth	2 402 MHz ~ 2 480 MHz
	WLAN 2.4 GHz	2 412 MHz ~ 2 462 MHz (802.11b/g/n(HT20))
		2 422 MHz ~ 2 452 MHz (802.11n(HT40))
	WLAN 5 150 MHz ~ 5 250 MHz Band	5 180 MHz ~ 5 240 MHz (802.11a/n(HT20)/ac(VHT20))
		5 190 MHz ~ 5 230 MHz (802.11n(HT40)/ac(VHT40))
		5 210 MHz (802.11ac(VHT80))
	WLAN 5 250 MHz ~ 5 350 MHz Band	5 260 MHz ~ 5 320 MHz (802.11a/n(HT20)/ac(VHT20))
		5 270 MHz ~ 5 310 MHz (802.11n(HT40)/ac(VHT40))
		5 290 MHz (802.11ac(VHT80))
	WLAN 5 470 MHz ~ 5 725 MHz Band	5 500 MHz ~ 5 720 MHz (802.11a/n(HT20)/ac(VHT20))
		5 510 MHz ~ 5 710 MHz (802.11n(HT40)/ac(VHT40))
		5 530 MHz ~ 5 690 MHz (802.11ac(VHT80))
	WLAN 5 725 MHz ~ 5 850 MHz Band	5 745 MHz ~ 5 825 MHz (802.11a/n(HT20)/ac(VHT20))
		5 755 MHz ~ 5 795 MHz (802.11n(HT40)/ac(VHT40))
		5 775 MHz (802.11ac(VHT80))
MODULATION TYPE	Bluetooth	GFSK for 1Mbps, $\pi/4$ -DQPSK for 2Mbps, 8-DPSK for 3Mbps
	WLAN 2.4 GHz	802.11b: DSSS Modulation(DBPSK/DQPSK/CCK)
		802.11g/n(HT20)/n(HT40): OFDM Modulation(BPSK/QPSK/16QAM/64QAM)
	WLAN 5 GHz	802.11a/n(HT20)/n(HT40)/ac(VHT80): OFDM Modulation(BPSK/QPSK/16QAM/64QAM)

RF OUTPUT POWER	Bluetooth	1 Mbps		8.01 dBm
		2 Mbps		7.60 dBm
		3 Mbps		7.89 dBm
	WLAN 2.4 GHz	Antenna 1		17.75 dBm(802.11b) 15.27 dBm(802.11g) 14.52 dBm(802.11n_HT20) 14.54 dBm(802.11n_HT40)
		Antenna 2		18.81 dBm(802.11b) 16.59 dBm(802.11g) 15.56 dBm(802.11n_HT20) 16.44 dBm(802.11n_HT40)
		Multiple Transmit	Antenna 1	11.57 dBm(802.11n_HT20) 12.02 dBm(802.11n_HT40)
			Antenna 2	12.90 dBm(802.11n_HT20) 13.22 dBm(802.11n_HT40)
			Antenna 1 + Antenna 2	15.30 dBm(802.11n_HT20) 15.60 dBm(802.11n_HT40)
		Antenna 1		16.62 dBm(802.11a) 15.84 dBm(802.11n_HT20) 14.51 dBm(802.11n_HT40) 11.45 dBm(802.11ac_VHT80)
		Antenna 2		15.66 dBm(802.11a) 14.84 dBm(802.11n_HT20) 13.65 dBm(802.11n_HT40) 10.06 dBm(802.11ac_VHT80)
	WLAN 5 150 MHz ~ 5 250 MHz Band	Multiple Transmit	Antenna 1	12.70 dBm(802.11n_HT20) 11.53 dBm(802.11n_HT40) 8.7 dBm(802.11ac_VHT80)
			Antenna 2	11.83 dBm(802.11n_HT20) 10.59 dBm(802.11n_HT40) 7.35 dBm(802.11ac_VHT80)
			Antenna 1 + Antenna 2	16.08 dBm(802.11n_HT20) 15.58 dBm(802.11n_HT40) 13.99 dBm(802.11ac_VHT80)

RF OUTPUT POWER	WLAN 5 250 MHz ~ 5 350 MHz Band	Antenna 1		17.32 dBm(802.11a) 16.57 dBm(802.11n_HT20) 12.16 dBm(802.11n_HT40) 11.04 dBm(802.11ac_VHT80)
		Antenna 2		16.50 dBm(802.11a) 15.63 dBm(802.11n_HT20) 11.87 dBm(802.11n_HT40) 9.83 dBm(802.11ac_VHT80)
		Multiple Transmit	Antenna 1	13.48 dBm(802.11n_HT20) 11.78 dBm(802.11n_HT40) 8.86 dBm(802.11ac_VHT80)
			Antenna 2	12.87 dBm(802.11n_HT20) 11.45 dBm(802.11n_HT40) 7.77 dBm(802.11ac_VHT80)
			Antenna 1 + Antenna 2	16.93 dBm(802.11n_HT20) 16.11 dBm(802.11n_HT40) 14.26 dBm(802.11ac_VHT80)
	WLAN 5 470 MHz ~ 5 725 MHz Band	Antenna 1		16.43 dBm(802.11a) 15.43 dBm(802.11n_HT20) 14.35 dBm(802.11n_HT40) 11.57 dBm(802.11ac_VHT80)
		Antenna 1_Straddle		14.99 dBm(802.11a) 14.09 dBm(802.11n_HT20) 13.60 dBm(802.11n_HT40) 10.78 dBm(802.11ac_VHT80)
		Antenna 2		15.11 dBm(802.11a) 14.32 dBm(802.11n_HT20) 13.60 dBm(802.11n_HT40) 10.73 dBm(802.11ac_VHT80)
		Antenna 2_Straddle		13.81 dBm(802.11a) 12.84 dBm(802.11n_HT20) 12.19 dBm(802.11n_HT40) 9.13 dBm(802.11ac_VHT80)

RF OUTPUT POWER	WLAN 5 470 MHz ~ 5 725 MHz Band	Multiple Transmit	Antenna 1	12.41 dBm(802.11n_HT20) 11.13 dBm(802.11n_HT40) 8.64 dBm(802.11ac_VHT80)
			Antenna 2	11.49 dBm(802.11n_HT20) 10.52 dBm(802.11n_HT40) 7.64 dBm(802.11ac_VHT80)
			Antenna 1 + Antenna 2	15.76 dBm(802.11n_HT20) 15.33 dBm(802.11n_HT40) 14.08 dBm(802.11ac_VHT80)
		Multiple Transmit _Straddle	Antenna 1	10.91 dBm(802.11n_HT20) 10.17 dBm(802.11n_HT40) 8.19 dBm(802.11ac_VHT80)
			Antenna 2	10.13 dBm(802.11n_HT20) 9.39 dBm(802.11n_HT40) 6.47 dBm(802.11ac_VHT80)
			Antenna 1 + Antenna 2	14.33 dBm(802.11n_HT20) 14.29 dBm(802.11n_HT40) 13.32 dBm(802.11ac_VHT80)
	WLAN 5 725 MHz ~ 5 850 MHz Band	Antenna 1		15.81 dBm(802.11a) 14.78 dBm(802.11n_HT20) 13.52 dBm(802.11n_HT40) 11.49 dBm(802.11ac_VHT80)
		Antenna 1_Straddle		8.76 dBm(802.11a) 8.27 dBm(802.11n_HT20) 3.21 dBm(802.11n_HT40) -3.46 dBm(802.11ac_VHT80)
		Antenna 2		14.20 dBm(802.11a) 13.23 dBm(802.11n_HT20) 12.15 dBm(802.11n_HT40) 10.17 dBm(802.11ac_VHT80)
		Antenna 2_Straddle		7.41 dBm(802.11a) 6.94 dBm(802.11n_HT20) 1.44 dBm(802.11n_HT40) -5.54 dBm(802.11ac_VHT80)

RF OUTPUT POWER	WLAN 5 725 MHz ~ 5 850 MHz Band	Multiple Transmit	Antenna 1	11.79 dBm(802.11n_HT20) 10.49 dBm(802.11n_HT40) 7.54 dBm(802.11ac_VHT80)
			Antenna 2	10.47 dBm(802.11n_HT20) 9.55 dBm(802.11n_HT40) 6.15 dBm(802.11ac_VHT80)
			Antenna 1 + Antenna 2	14.92 dBm(802.11n_HT20) 14.54 dBm(802.11n_HT40) 12.81 dBm(802.11ac_VHT80)
		Multiple Transmit _Straddle	Antenna 1	5.06 dBm(802.11n_HT20) -0.29 dBm(802.11n_HT40) -5.83 dBm(802.11ac_VHT80)
			Antenna 2	4.08 dBm(802.11n_HT20) 1.44 dBm(802.11n_HT40) -8.09 dBm(802.11ac_VHT80)
			Antenna 1 + Antenna 2	8.39 dBm(802.11n_HT20) 3.66 dBm(802.11n_HT40) -0.90 dBm(802.11ac_VHT80)

ANTENNA TYPE	SLOT Antenna		
ANTENNA GAIN	Bluetooth	-0.71 dBi	
	WLAN 2.4 GHz	Antenna 1	-0.71 dBi
		Antenna 2	1.11 dBi
		Multiple Transmit	3.30 dBi
	5 150 MHz ~ 5 250 MHz Band	Antenna 1	2.48 dBi
		Antenna 2	0.71 dBi
		Multiple Transmit	4.69 dBi
	5 250 MHz ~ 5 350 MHz Band	Antenna 1	2.48 dBi
		Antenna 2	0.71 dBi
		Multiple Transmit	4.69 dBi
	5 470 MHz ~ 5 725 MHz Band	Antenna 1	2.78 dBi
		Antenna 2	0.51 dBi
		Multiple Transmit	4.80 dBi
	5 725 MHz ~ 5 850 MHz Band	Antenna 1	2.32 dBi
		Antenna 2	1.02 dBi
		Multiple Transmit	4.73 dBi
List of each Osc. or crystal Freq.(Freq. >= 1 MHz)		48 MHz, 27 MHz, 38.4 MHz	

3.2 Alternative type(s)/model(s); also covered by this test report.

-. The following lists consist of the added model and their differences.

Model Name	Differences	Tested
AN-VC22PR	Basic Model	☒
HL-GE1	This model is identical to the basic model except for the model name.	☐

Note: 1. Applicant consigns only basic model to test. Therefore this test report just guarantees the units, which have been tested.

2. The Applicant/manufacture is responsible for the compliance of all variants.

4. EUT MODIFICATIONS

-. None

5. SYSTEM TEST CONFIGURATION

5.1 Justification

This device was configured for testing in a typical way as a normal customer is supposed to be used. During the test, the following components were installed inside of the EUT.

DEVICE TYPE	MANUFACTURER	MODEL/PART NUMBER	FCC ID
Main Board	Hitachi-LG Data Storage Korea, Inc.	N/A	N/A
Sub Board	Hitachi-LG Data Storage Korea, Inc.	N/A	N/A

5.2 Peripheral equipment

Defined as equipment needed for correct operation of the EUT, but not considered as tested:

Model	Manufacturer	Description	Connected to
AN-VC22PR	Hitachi-LG Data Storage Korea, Inc.	Network Webcam (EUT)	-
14-n241TU	HP	Notebook PC	EUT
PPP009C	CHICONY POWER TECHNOLOGY (Chong qing) CO., Ltd.	AC Adapter	-

5.3 Mode of operation during the test

-. Channel List (WLAN 2.4 GHz)

Channel	Frequency[MHz]	Channel	Frequency[MHz]	Channel	Frequency[MHz]
1	2 412.00	6	2 437.00	11	2 462.00
2	2 417.00	7	2 442.00		
3	2 422.00	8	2 447.00		
4	2 427.00	9	2 452.00		
5	2 432.00	10	2 457.00		

- Duty Cycle

[Antenna 1]

Band	TEST Mode	Data Rate	On Time (ms)	Total Time (ms)	Duty Cycle (%)	Duty Cycle Factor (dB)
WLAN 2.4 GHz	802.11 b	1	12.623	12.638	99.89	0.01
		2	6.311	6.325	99.78	0.01
		5.5	2.356	2.370	99.43	0.03
		11	1.226	1.239	98.92	0.05
	802.11 g	6	2.096	2.113	99.19	0.04
		9	1.404	1.421	98.81	0.05
		12	1.060	1.077	98.45	0.07
		18	0.712	0.729	97.69	0.10
		24	0.540	0.557	97.01	0.13
		36	0.368	0.879	41.85	3.78
		48	0.280	0.782	35.79	4.46
		54	0.252	0.754	33.38	4.77
	802.11 n(HT20)	MCS0	3.689	4.399	83.86	0.77
		MCS1	1.889	2.579	73.23	1.35
		MCS2	1.289	1.988	64.81	1.88
		MCS3	0.488	1.135	42.98	3.67
		MCS4	0.336	0.991	33.88	4.70
		MCS5	0.264	0.910	28.99	5.38
		MCS6	0.236	0.873	27.01	5.69
		MCS7	0.216	0.871	24.77	6.06
	802.11 n(HT40)	MCS0	1.824	2.559	71.27	1.47
		MCS1	0.960	1.695	56.60	2.47
		MCS2	0.672	1.398	48.04	3.18
		MCS3	0.256	0.947	27.00	5.69
		MCS4	0.184	0.875	21.01	6.78
		MCS5	0.148	0.785	18.82	7.25
		MCS6	0.136	0.818	16.58	7.81
		MCS7	0.124	0.779	15.88	7.99

Note – Duty Cycle : (Tx On Time / (Tx On Time + Tx Off Time)) * 100

Correction Factor : 10 * Log(1 / (Duty Cycle / 100))

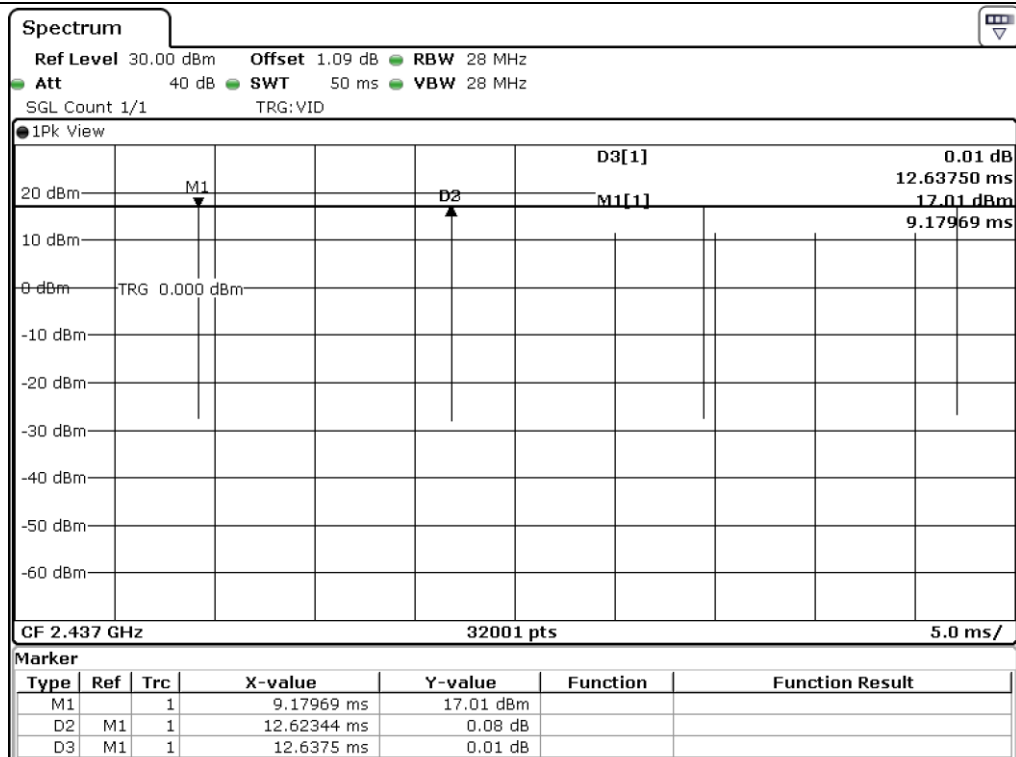
[Antenna 2]

Band	TEST Mode	Data Rate	On Time (ms)	Total Time (ms)	Duty Cycle (%)	Duty Cycle Factor (dB)
WLAN 2.4 GHz	802.11 b	1	12.623	12.636	99.89	0.01
		2	6.312	6.325	99.79	0.01
		5.5	2.356	2.369	99.43	0.03
		11	1.226	1.239	98.93	0.05
	802.11 g	6	2.096	2.113	99.21	0.04
		9	1.404	1.421	98.82	0.05
		12	1.060	1.077	98.45	0.07
		18	0.712	0.729	97.72	0.10
		24	0.540	0.556	97.00	0.13
		36	0.368	0.879	41.85	3.78
		48	0.280	0.773	36.20	4.46
		54	0.252	0.754	33.41	4.77
	802.11 n(HT20)	MCS0	3.689	4.406	83.72	0.77
		MCS1	1.888	2.714	69.57	1.35
		MCS2	1.288	2.006	64.22	1.88
		MCS3	0.488	1.162	41.99	3.67
		MCS4	0.336	1.009	33.29	4.70
		MCS5	0.264	0.910	28.98	5.38
		MCS6	0.236	0.900	26.21	5.69
		MCS7	0.216	0.871	24.78	6.06
	802.11 n(HT40)	MCS0	1.824	2.559	71.26	1.47
		MCS1	0.960	1.723	55.71	2.47
		MCS2	0.672	1.389	48.35	3.18
		MCS3	0.256	0.929	27.55	5.69
		MCS4	0.184	0.848	21.69	6.78
		MCS5	0.148	0.812	18.21	7.25
		MCS6	0.136	0.809	16.80	7.81
		MCS7	0.124	0.797	15.53	7.99

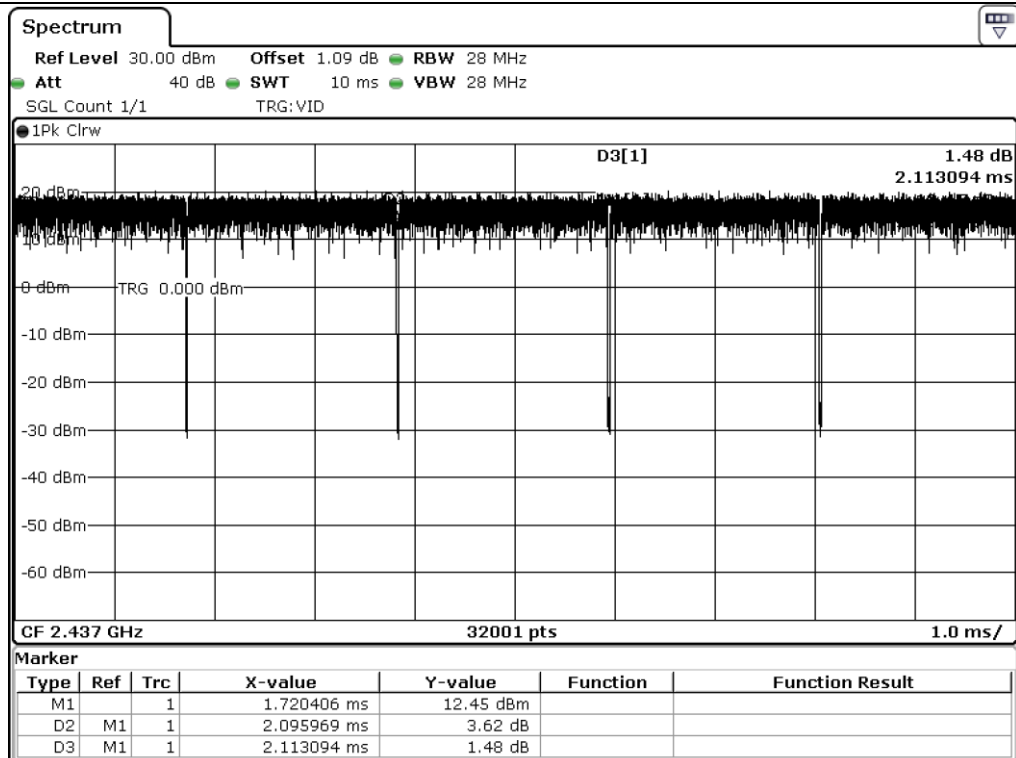
Note – Duty Cycle : (Tx On Time / (Tx On Time + Tx Off Time)) * 100

Correction Factor : $10 * \log(1 / (\text{Duty Cycle} / 100))$

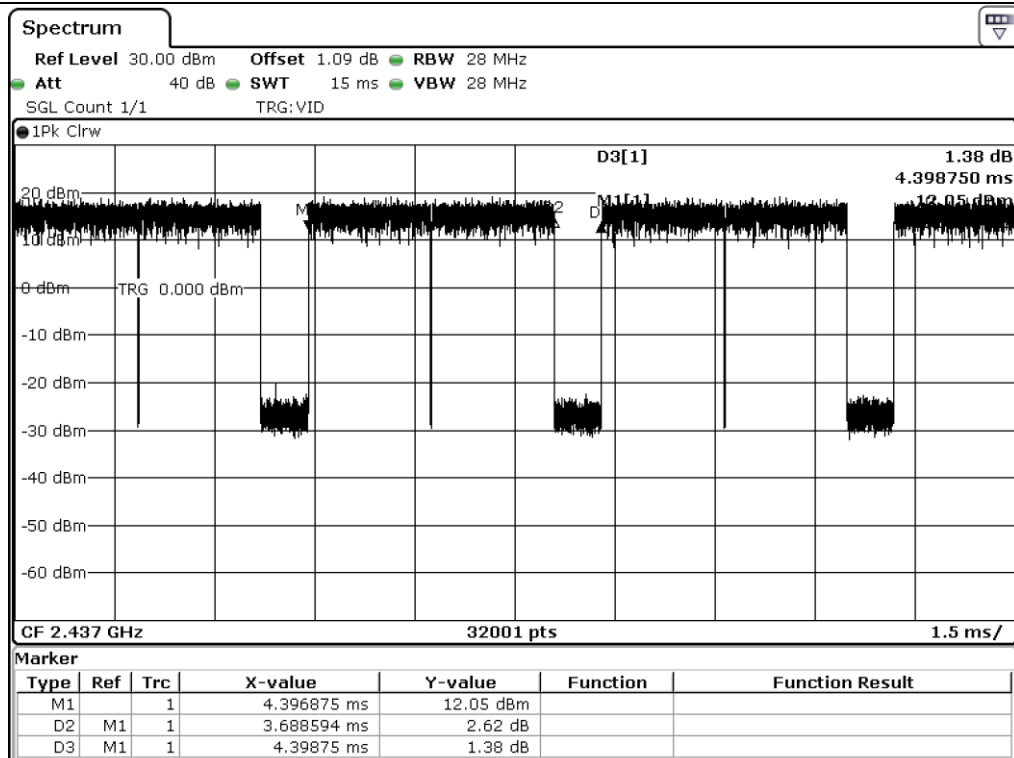
-. Test Plot



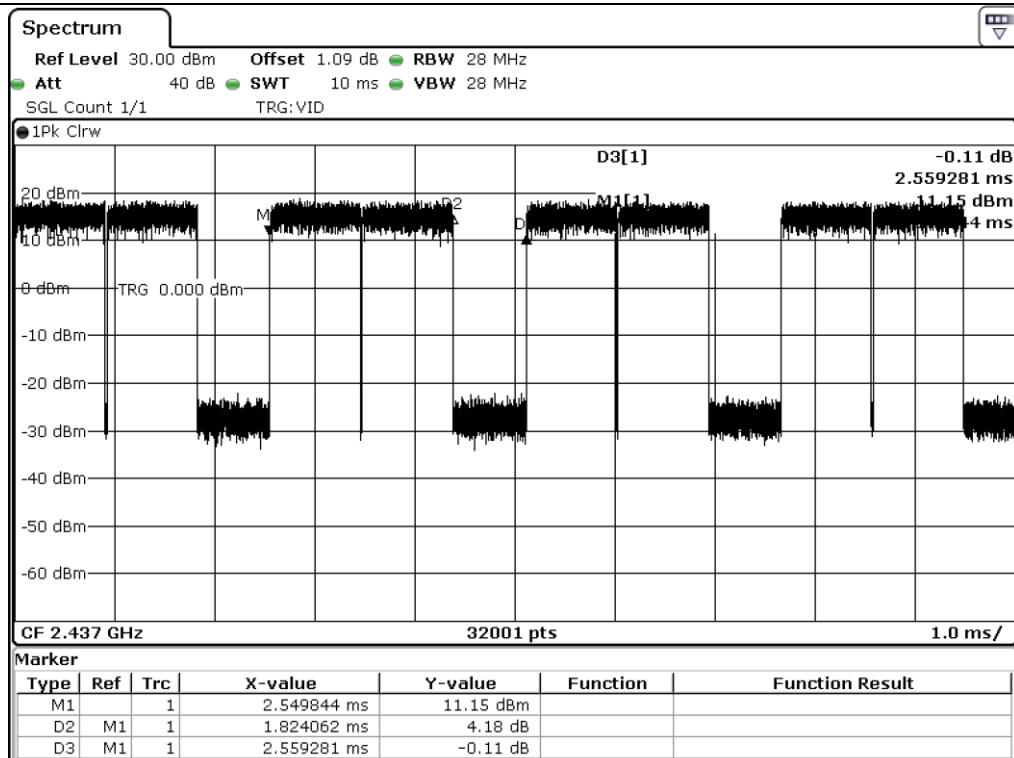
802.11 b_Antenna 1



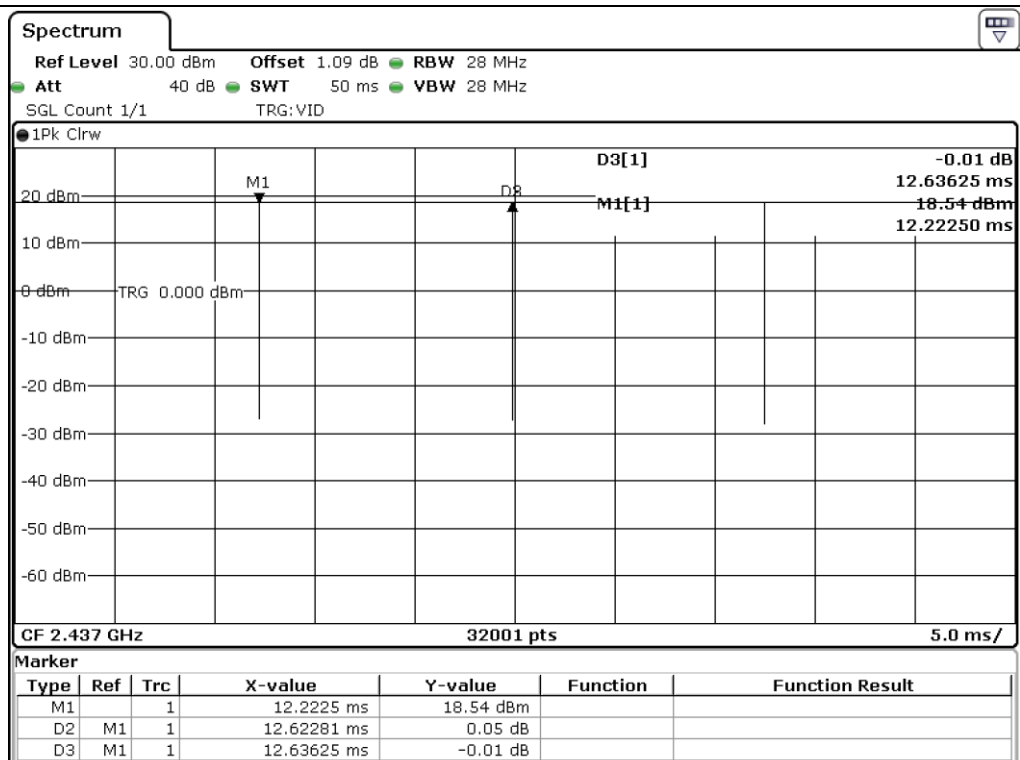
802.11 g_Antenna 1



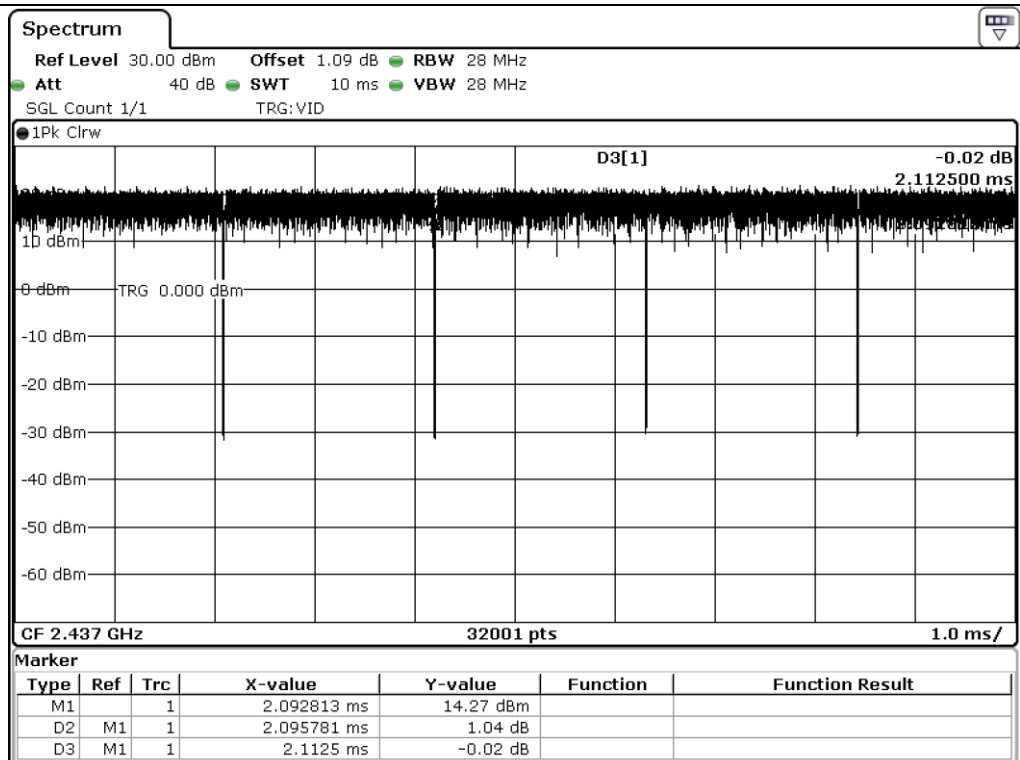
802.11 HT 20_Antenna 1



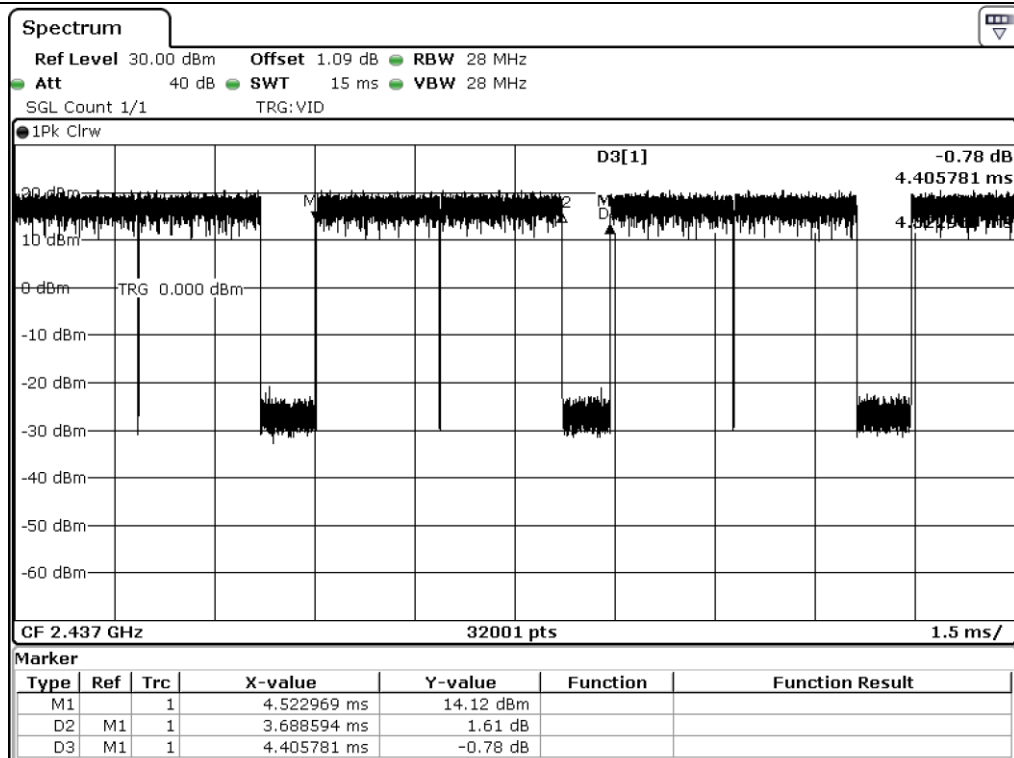
802.11 HT 40_Antenna 2



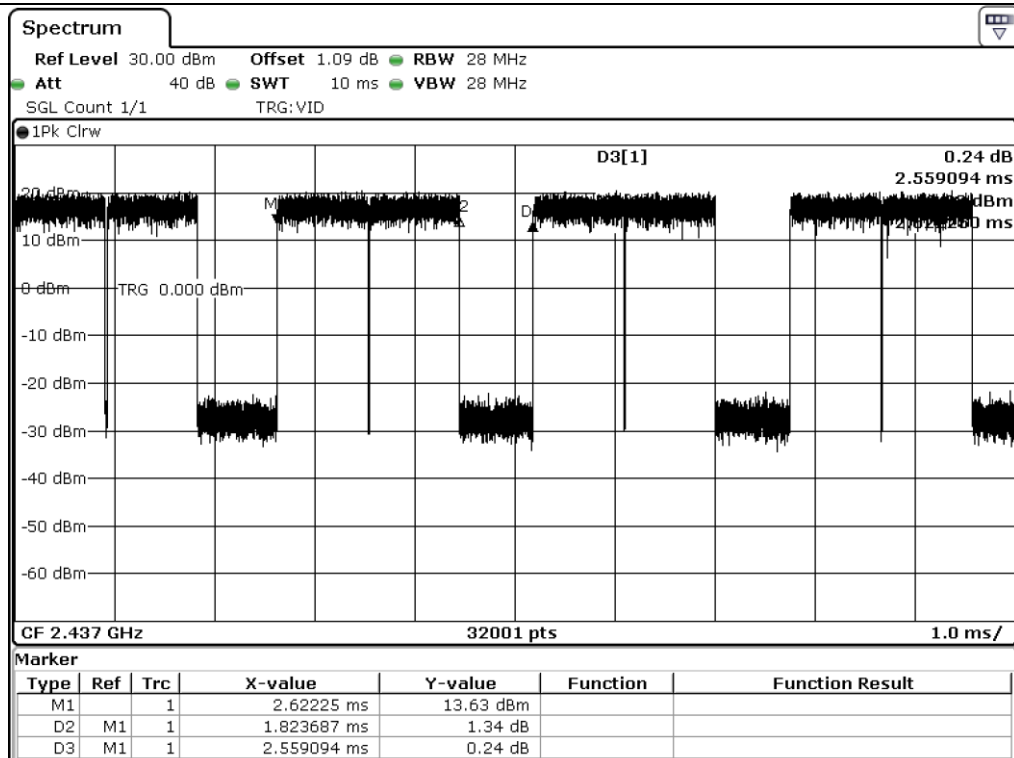
802.11 b_Antenna 2



802.11 g_Antenna 2



802.11 HT 20_Antenna 2



802.11 HT 40_Antenna 2

5.4 Configuration of Test System

Line Conducted Test: The EUT was tested in the Transmitting mode. All supporting equipment were connected to another LISN. Preliminary Power line Conducted Emission test was performed by using the procedure in ANSI C63.10: 2013 to determine the worse operating conditions.

Radiated Emission Test: Preliminary radiated emissions test were conducted using the procedure in ANSI C63.10: 2013 to determine the worse operating conditions. Final radiated emission tests were conducted at 3 meter Semi Anechoic Chamber.

The turntable was rotated through 360 degrees and the EUT was tested by positioned three orthogonal planes to obtain the highest reading on the field strength meter. Once maximum reading was determined, the search antenna was raised and lowered in both vertical and horizontal polarization.

5.5 Antenna Requirement

For intentional device, according to section 15.203, 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.

Antenna Construction:

The SLOT Antennas are located the in the EUT internally, so It is not able to be replaced by user.

6. PRELIMINARY TEST

6.1 AC Power line Conducted Emissions Tests

During Preliminary Test, the following operating mode was investigated.

Operation Mode	The Worse operating condition (Please check one only)
Transmitting Mode	X

6.2 General Radiated Emissions Tests

During Preliminary Test, the following operating mode was investigated.

Operation Mode	The Worse operating condition (Please check one only)
Transmitting Mode	X

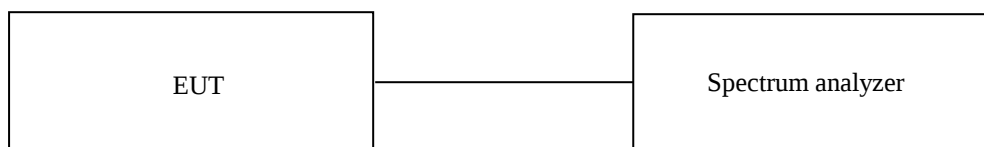
7. MINIMUM 6 dB BANDWIDTH

7.1 Operating environment

Temperature : 24 °C
Relative humidity : 52 % R.H.

7.2 Test set-up

The antenna output of the EUT was connected to the spectrum analyzer. The resolution bandwidth is set to 100 kHz, and peak detection was used. The 6 dB bandwidth is defined as the total spectrum over which the power is higher than the peak power minus 6 dB.



7.3 Test Date

September 26, 2022 ~ October 21, 2022

7.4 Test data for 802.11b WLAN Mode

7.4.1 Test data for Antenna 1

-. Test Result : Pass

CHANNEL	FREQUENCY (MHz)	6 dB Bandwidth (MHz)	LIMIT (MHz)	Margin (MHz)
Low	2 412.00	8.09	0.50	7.59
Middle	2 437.00	8.09	0.50	7.59
High	2 462.00	8.09	0.50	7.59

Remark. Margin = Measured Value – Limit

7.4.2 Test data for Antenna 2

-. Test Result : Pass

CHANNEL	FREQUENCY (MHz)	6 dB Bandwidth (MHz)	LIMIT (MHz)	Margin (MHz)
Low	2 412.00	8.09	0.50	7.59
Middle	2 437.00	8.09	0.50	7.59
High	2 462.00	8.09	0.50	7.59

Remark. Margin = Measured Value – Limit

7.5 Test data for 802.11g WLAN Mode

7.5.1 Test data for Antenna 1

-. Test Result : Pass

CHANNEL	FREQUENCY (MHz)	6 dB Bandwidth (MHz)	LIMIT (MHz)	Margin (MHz)
Low	2 412.00	15.98	0.50	15.48
Middle	2 437.00	16.03	0.50	15.53
High	2 462.00	16.33	0.50	15.83

Remark. Margin = Measured Value – Limit

7.5.2 Test data for Antenna 2

-. Test Result : Pass

CHANNEL	FREQUENCY (MHz)	6 dB Bandwidth (MHz)	LIMIT (MHz)	Margin (MHz)
Low	2 412.00	16.03	0.50	15.53
Middle	2 437.00	16.03	0.50	15.53
High	2 462.00	16.28	0.50	15.78

Remark. Margin = Measured Value – Limit

7.6 Test data for 802.11n_HT20 WLAN Mode

7.6.1 Test data for Antenna 1

-. Test Result : Pass

CHANNEL	FREQUENCY (MHz)	6 dB Bandwidth (MHz)	LIMIT (MHz)	Margin (MHz)
Low	2 412.00	15.98	0.50	15.48
Middle	2 437.00	17.18	0.50	16.68
High	2 462.00	16.58	0.50	16.08

Remark. Margin = Measured Value – Limit

7.6.2 Test data for Antenna 2

-. Test Result : Pass

CHANNEL	FREQUENCY (MHz)	6 dB Bandwidth (MHz)	LIMIT (MHz)	Margin (MHz)
Low	2 412.00	15.73	0.50	15.23
Middle	2 437.00	16.13	0.50	15.63
High	2 462.00	16.78	0.50	16.28

Remark. Margin = Measured Value – Limit

7.6.3 Test data for Multiple Antenna

7.6.3.1 Test data for Antenna 1

-. Test Result : Pass

CHANNEL	FREQUENCY (MHz)	6 dB Bandwidth (MHz)	LIMIT (MHz)	Margin (MHz)
Low	2 412.00	17.13	0.50	16.63
Middle	2 437.00	17.18	0.50	16.68
High	2 462.00	16.93	0.50	16.43

Remark. Margin = Measured Value – Limit

7.6.3.2 Test data for Antenna 2

-. Test Result : Pass

CHANNEL	FREQUENCY (MHz)	6 dB Bandwidth (MHz)	LIMIT (MHz)	Margin (MHz)
Low	2 412.00	15.78	0.50	15.28
Middle	2 437.00	16.88	0.50	16.38
High	2 462.00	16.53	0.50	16.03

Remark. Margin = Measured Value – Limit

7.7 Test data for 802.11n_HT40 WLAN Mode

7.7.1 Test data for Antenna 1

-. Test Result : Pass

CHANNEL	FREQUENCY (MHz)	6 dB Bandwidth (MHz)	LIMIT (MHz)	Margin (MHz)
Low	2 422.00	35.36	0.50	34.86
Middle	2 437.00	35.86	0.50	35.36
High	2 452.00	35.86	0.50	35.36

Remark. Margin = Measured Value – Limit

7.7.2 Test data for Antenna 2

-. Test Result : Pass

CHANNEL	FREQUENCY (MHz)	6 dB Bandwidth (MHz)	LIMIT (MHz)	Margin (MHz)
Low	2 422.00	35.46	0.50	34.96
Middle	2 437.00	35.86	0.50	35.36
High	2 452.00	35.86	0.50	35.36

Remark. Margin = Measured Value – Limit

7.7.3 Test data for Multiple Antenna

7.7.3.1 Test data for Antenna 1

-. Test Result : Pass

CHANNEL	FREQUENCY (MHz)	6 dB Bandwidth (MHz)	LIMIT (MHz)	Margin (MHz)
Low	2 422.00	35.36	0.50	34.86
Middle	2 437.00	35.86	0.50	35.36
High	2 452.00	35.86	0.50	35.36

Remark. Margin = Measured Value – Limit

7.7.3.2 Test data for Antenna 2

-. Test Result : Pass

CHANNEL	FREQUENCY (MHz)	6 dB Bandwidth (MHz)	LIMIT (MHz)	Margin (MHz)
Low	2 422.00	35.36	0.50	34.86
Middle	2 437.00	35.86	0.50	35.36
High	2 452.00	35.86	0.50	35.36

Remark. Margin = Measured Value - Limit

8. MAXIMUM CONDUCTED(AVERAGE) OUTPUT POWER

8.1 Operating environment

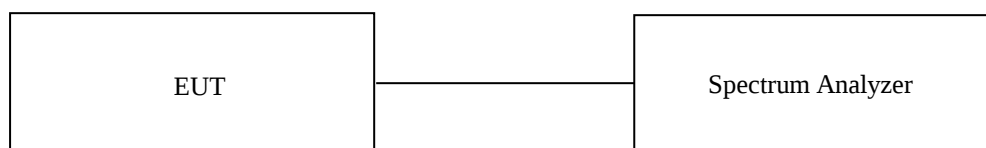
Temperature : 24 °C

Relative humidity : 52 % R.H.

8.2 Test set-up

The antenna output of the EUT was connected to the spectrum analyzer.

The resolution bandwidth is set to 1 MHz, the video bandwidth is set to 3 times the resolution bandwidth.



8.3 Test Date

September 26, 2022 ~ October 21, 2022

8.4 Test data for 802.11b WLAN Mode

8.4.1 Test data for Antenna 1

-. Test Result : Pass

-. Duty Cycle : 99.89 %

CHANNEL	FREQUENCY (MHz)	Occupied Bandwidth (MHz)	MEASURED VALUE (dBm)	Duty Factor (dB)	Total Value (dBm)	LIMIT (dBm)	MARGIN (dB)
LOW	2 412.00	12.94	17.71	0.01	17.72	30.00	12.28
MIDDLE	2 437.00	12.99	17.73	0.01	17.74	30.00	12.26
HIGH	2 462.00	13.04	17.74	0.01	17.75	30.00	12.25

Remark : Margin = Limit – Total Value (=Measured Value + Duty Factor)

8.4.2 Test data for Antenna 2

-. Test Result : Pass

-. Duty Cycle : 99.89 %

CHANNEL	FREQUENCY (MHz)	Occupied Bandwidth (MHz)	MEASURED VALUE (dBm)	Duty Factor (dB)	Total Value (dBm)	LIMIT (dBm)	MARGIN (dB)
LOW	2 412.00	12.99	18.80	0.01	18.81	30.00	11.19
MIDDLE	2 437.00	13.04	18.79	0.01	18.80	30.00	11.20
HIGH	2 462.00	13.04	18.74	0.01	18.75	30.00	11.25

Remark : Margin = Limit – Total Value (=Measured Value + Duty Factor)

8.5 Test data for 802.11g WLAN Mode

8.5.1 Test data for Antenna 1

-. Test Result : Pass

-. Duty Cycle : 99.19 %

CHANNEL	FREQUENCY (MHz)	Occupied Bandwidth (MHz)	MEASURED VALUE (dBm)	Duty Factor (dB)	Total Value (dBm)	LIMIT (dBm)	MARGIN (dB)
LOW	2 412.00	16.28	15.17	0.04	15.21	30.00	14.79
MIDDLE	2 437.00	16.28	15.15	0.04	15.19	30.00	14.81
HIGH	2 462.00	16.23	15.23	0.04	15.27	30.00	14.73

Remark : Margin = Limit – Total Value (=Measured Value + Duty Factor)

8.5.2 Test data for Antenna 2

-. Test Result : Pass

-. Duty Cycle : 99.21 %

CHANNEL	FREQUENCY (MHz)	Occupied Bandwidth (MHz)	MEASURED VALUE (dBm)	Duty Factor (dB)	Total Value (dBm)	LIMIT (dBm)	MARGIN (dB)
LOW	2 412.00	16.28	16.42	0.04	16.46	30.00	13.54
MIDDLE	2 437.00	16.23	16.34	0.04	16.38	30.00	13.62
HIGH	2 462.00	16.23	16.55	0.04	16.59	30.00	13.41

Remark : Margin = Limit – Total Value (=Measured Value + Duty Factor)

8.6 Test data for 802.11n_HT20 WLAN Mode

8.6.1 Test data for Antenna 1

-. Test Result : Pass

-. Duty Cycle : 83.86 %

CHANNEL	FREQUENCY (MHz)	Occupied Bandwidth (MHz)	MEASURED VALUE (dBm)	Duty Factor (dB)	Total Value (dBm)	LIMIT (dBm)	MARGIN (dB)
LOW	2 412.00	17.48	13.54	0.77	14.31	30.00	15.69
MIDDLE	2 437.00	17.48	13.42	0.77	14.19	30.00	15.81
HIGH	2 462.00	17.48	13.75	0.77	14.52	30.00	15.48

Remark : Margin = Limit – Total Value (=Measured Value + Duty Factor)

8.6.2 Test data for Antenna 2

-. Test Result : Pass

-. Duty Cycle : 83.72 %

CHANNEL	FREQUENCY (MHz)	Occupied Bandwidth (MHz)	MEASURED VALUE (dBm)	Duty Factor (dB)	Total Value (dBm)	LIMIT (dBm)	MARGIN (dB)
LOW	2 412.00	17.48	14.76	0.77	15.53	30.00	14.47
MIDDLE	2 437.00	17.53	14.58	0.77	15.35	30.00	14.65
HIGH	2 462.00	17.48	14.79	0.77	15.56	30.00	14.44

Remark : Margin = Limit – Total Value (=Measured Value + Duty Factor)

8.6.3 Test data for Multiple Transmit

8.6.3.1 Test data for Antenna 1

-. Test Result : Pass

-. Duty Cycle : 83.86 %

CHANNEL	FREQUENCY (MHz)	Occupied Bandwidth (MHz)	MEASURED VALUE (dBm)	Duty Factor (dB)	Total Value (dBm)	LIMIT (dBm)	MARGIN (dB)
LOW	2 412.00	17.48	10.57	0.77	11.34	30.00	18.66
MIDDLE	2 437.00	17.48	10.50	0.77	11.27	30.00	18.73
HIGH	2 462.00	17.53	10.80	0.77	11.57	30.00	18.43

Remark : Margin = Limit – Total Value (=Measured Value + Duty Factor)

8.6.3.2 Test data for Antenna 2

-. Test Result : Pass

-. Duty Cycle : 83.72 %

CHANNEL	FREQUENCY (MHz)	Occupied Bandwidth (MHz)	MEASURED VALUE (dBm)	Duty Factor (dB)	Total Value (dBm)	LIMIT (dBm)	MARGIN (dB)
LOW	2 412.00	17.48	11.84	0.77	12.61	30.00	17.39
MIDDLE	2 437.00	17.53	11.92	0.77	12.69	30.00	17.31
HIGH	2 462.00	17.53	12.13	0.77	12.90	30.00	17.10

Remark : Margin = Limit – Total Value (=Measured Value + Duty Factor)

8.6.3.3 Test data for Antenna 1 + Antenna 2

-. Test Result : Pass

CHANNEL	FREQUENCY (MHz)	SUM VALUE (dBm)	LIMIT (dBm)	MARGIN (dB)
LOW	2 412.00	15.03	30.00	14.97
MIDDLE	2 437.00	15.05	30.00	14.95
HIGH	2 462.00	15.30	30.00	14.70

Remark : Margin = Limit - SUM Value

8.7 Test data for 802.11n_HT40 WLAN Mode

8.7.1 Test data for Antenna 1

-. Test Result : Pass

-. Duty Cycle : 71.27 %

CHANNEL	FREQUENCY (MHz)	Occupied Bandwidth (MHz)	MEASURED VALUE (dBm)	Duty Factor (dB)	Total Value (dBm)	LIMIT (dBm)	MARGIN (dB)
LOW	2 422.00	35.96	13.06	1.47	14.53	30.00	15.47
MIDDLE	2 437.00	36.06	13.05	1.47	14.52	30.00	15.48
HIGH	2 452.00	36.16	13.07	1.47	14.54	30.00	15.46

Remark : Margin = Limit – Total Value (=Measured Value + Duty Factor)

8.7.2 Test data for Antenna 2

-. Test Result : Pass

-. Duty Cycle : 71.26 %

CHANNEL	FREQUENCY (MHz)	Occupied Bandwidth (MHz)	MEASURED VALUE (dBm)	Duty Factor (dB)	Total Value (dBm)	LIMIT (dBm)	MARGIN (dB)
LOW	2 422.00	35.96	14.67	1.47	16.14	30.00	13.86
MIDDLE	2 437.00	36.06	14.97	1.47	16.44	30.00	13.56
HIGH	2 452.00	36.06	14.74	1.47	16.21	30.00	13.79

Remark : Margin = Limit – Total Value (=Measured Value + Duty Factor)

8.7.3 Test data for Multiple Transmit

8.7.3.1 Test data for Antenna 1

-. Test Result : Pass

-. Duty Cycle : 71.27 %

CHANNEL	FREQUENCY (MHz)	Occupied Bandwidth (MHz)	MEASURED VALUE (dBm)	Duty Factor (dB)	Total Value (dBm)	LIMIT (dBm)	MARGIN (dB)
LOW	2 422.00	35.96	10.55	1.47	12.02	30.00	17.98
MIDDLE	2 437.00	36.06	10.36	1.47	11.83	30.00	18.17
HIGH	2 452.00	36.06	10.36	1.47	11.83	30.00	18.17

Remark : Margin = Limit – Total Value (=Measured Value + Duty Factor)

8.7.3.2 Test data for Antenna 2

-. Test Result : Pass

-. Duty Cycle : 71.26 %

CHANNEL	FREQUENCY (MHz)	Occupied Bandwidth (MHz)	MEASURED VALUE (dBm)	Duty Factor (dB)	Total Value (dBm)	LIMIT (dBm)	MARGIN (dB)
LOW	2 422.00	35.96	11.63	1.47	13.10	30.00	16.90
MIDDLE	2 437.00	36.06	11.64	1.47	13.11	30.00	16.89
HIGH	2 452.00	36.06	11.75	1.47	13.22	30.00	16.78

Remark : Margin = Limit – Total Value (=Measured Value + Duty Factor)

8.7.3.3 Test data for Antenna 1 + Antenna 2

-. Test Result : Pass

CHANNEL	FREQUENCY (MHz)	SUM VALUE (dBm)	LIMIT (dBm)	MARGIN (dB)
LOW	2 422.00	15.60	30.00	14.40
MIDDLE	2 437.00	15.53	30.00	14.47
HIGH	2 452.00	15.59	30.00	14.41

Remark : Margin = Limit - SUM Value

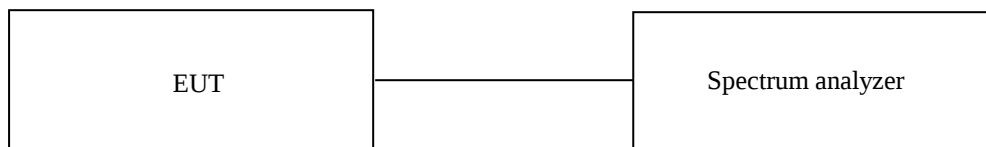
9. 100 kHz BANDWIDTH OUTSIDE THE FREQUENCY BAND

9.1 Operating environment

Temperature : 24 °C
Relative humidity : 52 % R.H.

9.2 Test set-up for conducted measurement

The antenna output of the EUT was connected to the spectrum analyzer. The resolution and video bandwidth is set to 100 kHz, and peak detection was used.



9.3 Test set-up for radiated measurement

The radiated emissions measurements were performed on the 3 m semi anechoic chamber. The EUT was placed on turntable approximately 1.5 m above the ground plane.

The frequency spectrum from 30 MHz to 26.5 GHz was scanned and maximum emission levels at each frequency recorded. The system was rotated 360°, and the antenna was varied in the height between 1.0 m and 4.0 m in order to determine the maximum emission levels. This procedure was performed for horizontal and vertical polarization of the receiving antenna.

9.4 Test Date

September 26, 2022 ~ October 21, 2022

9.5 Test data for conducted emission

- Refer to the Appendix

9.6 Test data for radiated emission

9.6.1 Radiated Emission which fall in the Restricted Band

9.6.1.1 Test data for 802.11b WLAN Mode

9.6.1.1.1 Test data for Antenna 1

- Resolution bandwidth : 1 MHz and Peak Detector for Peak Mode
1 MHz and RMS Detector for Average Mode
- Video bandwidth : 3 MHz for Peak and Average Mode
- Measurement distance : 3 m
- Duty Cycle : 99.89 %
- Result : PASSED

Frequency (MHz)	Reading (dBμV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	AMP Factor	ATT (dB)	Duty Factor (dB)	Total (dBμV/m)	Limits (dBμV/m)	Margin (dB)
Test Data for Low Channel											
2 321.97	54.42	Peak	H	28.00	7.19	44.97	5.77	-	50.41	74.00	23.59
2 366.09	42.94	Average	H	28.16	7.27	44.95	5.77	0.01	39.20	54.00	14.80
2 377.20	54.72	Peak	V	28.27	7.44	44.95	5.77	-	51.25	74.00	22.75
2 350.40	42.87	Average	V	28.00	7.27	44.96	5.77	0.01	38.96	54.00	15.04
Test Data for High Channel											
2 493.68	54.84	Peak	H	28.81	7.53	44.90	5.77	-	52.05	74.00	21.95
2 489.54	43.41	Average	H	28.82	7.62	44.90	5.77	0.01	40.73	54.00	13.27
2 496.72	54.89	Peak	V	28.81	7.53	44.90	5.77	-	52.10	74.00	21.90
2 498.77	43.01	Average	V	28.80	7.53	44.90	5.77	0.01	40.22	54.00	13.78

Tabulated test data for Restricted Band

Remark: "H": Horizontal, "V": Vertical

Margin (dB) = Limits (dBμV/m) - Total Level (dBμV/m)

Total Level = Reading + Antenna Factor + Cable Loss + ATT + Duty Factor – AMP Factor

9.6.1.1.2 Test data for Antenna 2

- . Resolution bandwidth : 1 MHz and Peak Detector for Peak Mode
1 MHz and RMS Detector for Average Mode
- . Video bandwidth : 3 MHz for Peak and Average Mode
- . Measurement distance : 3 m
- . Duty Cycle : 99.89 %
- . Result : PASSED

Frequency (MHz)	Reading (dBμV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	AMP Factor	ATT (dB)	Duty Factor (dB)	Total (dBμV/m)	Limits (dBμV/m)	Margin (dB)
Test Data for Low Channel											
2 321.57	54.49	Peak	H	28.00	7.19	44.97	5.77	-	50.48	74.00	23.52
2 383.72	42.98	Average	H	28.34	7.44	44.95	5.77	0.01	39.59	54.00	14.41
2 372.82	54.63	Peak	V	28.23	7.27	44.95	5.77	-	50.95	74.00	23.05
2 318.92	42.92	Average	V	28.00	7.19	44.97	5.77	0.01	38.92	54.00	15.08
Test Data for High Channel											
2 487.23	56.00	Peak	H	28.83	7.62	44.91	5.77	-	53.31	74.00	20.69
2 483.66	46.14	Average	H	28.83	7.62	44.91	5.77	0.01	43.46	54.00	10.54
2 484.23	54.64	Peak	V	28.83	7.62	44.91	5.77	-	51.95	74.00	22.05
2 494.93	43.41	Average	V	28.81	7.53	44.90	5.77	0.01	40.63	54.00	13.37

Tabulated test data for Restricted Band

Remark: "H": Horizontal, "V": Vertical

Margin (dB) = Limits (dBμV/m) - Total Level (dBμV/m)

Total Level = Reading + Antenna Factor + Cable Loss + ATT + Duty Factor – AMP Factor

9.6.1.2 Test data for 802.11g WLAN Mode

9.6.1.2.1 Test data for Antenna 1

- Resolution bandwidth : 1 MHz and Peak Detector for Peak Mode
1 MHz and RMS Detector for Average Mode
- Video bandwidth : 3 MHz for Peak and Average Mode
- Measurement distance : 3 m
- Duty Cycle : 99.19 %
- Result : PASSED

Frequency (MHz)	Reading (dBμV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	AMP Factor	ATT (dB)	Duty Factor (dB)	Total (dBμV/m)	Limits (dBμV/m)	Margin (dB)
Test Data for Low Channel											
2 390.04	56.87	Peak	H	28.40	7.44	44.94	5.77	-	53.54	74.00	20.46
2 389.94	42.99	Average	H	28.40	7.44	44.94	5.77	0.04	39.70	54.00	14.30
2 368.54	55.31	Peak	V	28.19	7.27	44.95	5.77	-	51.59	74.00	22.41
2 389.74	43.15	Average	V	28.40	7.44	44.94	5.77	0.04	39.86	54.00	14.14
Test Data for High Channel											
2 484.11	56.48	Peak	H	28.83	7.62	44.91	5.77	-	53.79	74.00	20.21
2 483.89	45.07	Average	H	28.83	7.62	44.91	5.77	0.04	42.42	54.00	11.58
2 483.70	56.20	Peak	V	28.83	7.62	44.91	5.77	-	53.51	74.00	20.49
2 483.89	43.46	Average	V	28.83	7.62	44.91	5.77	0.04	40.81	54.00	13.19

Tabulated test data for Restricted Band

Remark: "H": Horizontal, "V": Vertical

Margin (dB) = Limits (dBμV/m) - Total Level (dBμV/m)

Total Level = Reading + Antenna Factor + Cable Loss + ATT + Duty Factor – AMP Factor

9.6.1.2.2 Test data for Antenna 2

- . Resolution bandwidth : 1 MHz and Peak Detector for Peak Mode
1 MHz and RMS Detector for Average Mode
- . Video bandwidth : 3 MHz for Peak and Average Mode
- . Measurement distance : 3 m
- . Duty Cycle : 99.21 %
- . Result : PASSED

Frequency (MHz)	Reading (dBμV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	AMP Factor	ATT (dB)	Duty Factor (dB)	Total (dBμV/m)	Limits (dBμV/m)	Margin (dB)
Test Data for Low Channel											
2 389.23	55.62	Peak	H	28.39	7.44	44.94	5.77	-	52.28	74.00	21.72
2 390.04	43.56	Average	H	28.40	7.44	44.94	5.77	0.04	40.27	54.00	13.73
2 389.63	55.87	Peak	V	28.40	7.44	44.94	5.77	-	52.54	74.00	21.46
2 389.84	42.97	Average	V	28.40	7.44	44.94	5.77	0.04	39.68	54.00	14.32
Test Data for High Channel											
2 484.53	62.32	Peak	H	28.83	7.62	44.91	5.77	-	59.63	74.00	14.37
2 483.54	45.89	Average	H	28.83	7.62	44.91	5.77	0.04	43.24	54.00	10.76
2 484.15	64.10	Peak	V	28.83	7.62	44.91	5.77	-	61.41	74.00	12.59
2 483.54	45.46	Average	V	28.83	7.62	44.91	5.77	0.04	42.81	54.00	11.19

Tabulated test data for Restricted Band

Remark: "H": Horizontal, "V": Vertical

Margin (dB) = Limits (dBμV/m) - Total Level (dBμV/m)

Total Level = Reading + Antenna Factor + Cable Loss + ATT + Duty Factor – AMP Factor

9.7.1.3 Test data for 802.11n_HT20 WLAN Mode

9.7.1.3.1 Test data for Antenna 1

- Resolution bandwidth : 1 MHz and Peak Detector for Peak Mode
1 MHz and RMS Detector for Average Mode
- Video bandwidth : 3 MHz for Peak and Average Mode
- Measurement distance : 3 m
- Duty Cycle : 83.86 %
- Result : PASSED

Frequency (MHz)	Reading (dBμV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	AMP Factor	ATT (dB)	Duty Factor (dB)	Total (dBμV/m)	Limits (dBμV/m)	Margin (dB)
Test Data for Low Channel											
2 390.04	57.46	Peak	H	28.40	7.44	44.94	5.77	-	54.13	74.00	19.87
2 389.94	45.86	Average	H	28.40	7.44	44.94	5.77	0.77	43.30	54.00	10.70
2 336.44	54.77	Peak	V	28.00	7.27	44.97	5.77	-	50.84	74.00	23.16
2 390.04	43.31	Average	V	28.40	7.44	44.94	5.77	0.77	40.75	54.00	13.25
Test Data for High Channel											
2 484.83	57.52	Peak	H	28.83	7.62	44.91	5.77	-	54.83	74.00	19.17
2 483.54	44.29	Average	H	28.83	7.62	44.91	5.77	0.77	42.37	54.00	11.63
2 486.85	55.02	Peak	V	28.83	7.62	44.91	5.77	-	52.33	74.00	21.67
2 484.27	43.49	Average	V	28.83	7.62	44.91	5.77	0.77	41.57	54.00	12.43

Tabulated test data for Restricted Band

Remark: "H": Horizontal, "V": Vertical

Margin (dB) = Limits (dBμV/m) - Total Level (dBμV/m)

Total Level = Reading + Antenna Factor + Cable Loss + ATT + Duty Factor – AMP Factor

9.7.1.2.2 Test data for Antenna 2

- Resolution bandwidth : 1 MHz and Peak Detector for Peak Mode
1 MHz and RMS Detector for Average Mode
- Video bandwidth : 3 MHz for Peak and Average Mode
- Measurement distance : 3 m
- Duty Cycle : 83.72 %
- Result : PASSED

Frequency (MHz)	Reading (dBμV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	AMP Factor	ATT (dB)	Duty Factor (dB)	Total (dBμV/m)	Limits (dBμV/m)	Margin (dB)
Test Data for Low Channel											
2 389.74	59.56	Peak	H	28.40	7.44	44.94	5.77	-	56.23	74.00	17.77
2 389.94	47.24	Average	H	28.40	7.44	44.94	5.77	0.77	44.68	54.00	9.32
2 390.04	55.36	Peak	V	28.40	7.44	44.94	5.77	-	52.03	74.00	21.97
2 389.84	43.63	Average	V	28.40	7.44	44.94	5.77	0.77	41.07	54.00	12.93
Test Data for High Channel											
2 483.51	65.43	Peak	H	28.83	7.62	44.91	5.77	-	62.74	74.00	11.26
2 483.73	52.82	Average	H	28.83	7.62	44.91	5.77	0.77	50.90	54.00	3.10
2 484.99	60.81	Peak	V	28.83	7.62	44.91	5.77	-	58.12	74.00	15.88
2 483.70	47.53	Average	V	28.83	7.62	44.91	5.77	0.77	45.61	54.00	8.39

Tabulated test data for Restricted Band

Remark: "H": Horizontal, "V": Vertical

Margin (dB) = Limits (dBμV/m) - Total Level (dBμV/m)

Total Level = Reading + Antenna Factor + Cable Loss + ATT + Duty Factor – AMP Factor

9.7.1.2.2 Test data for Multiple Transmit

- Resolution bandwidth : 1 MHz and Peak Detector for Peak Mode
1 MHz and RMS Detector for Average Mode
- Video bandwidth : 3 MHz for Peak and Average Mode
- Measurement distance : 3 m
- Duty Cycle : 83.72 %
- Result : PASSED

Frequency (MHz)	Reading (dBμV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	AMP Factor	ATT (dB)	Duty Factor (dB)	Total (dBμV/m)	Limits (dBμV/m)	Margin (dB)
Test Data for Low Channel											
2 323.50	55.02	Peak	H	28.00	7.19	44.97	5.77	-	51.01	74.00	22.99
2 330.94	43.58	Average	H	28.00	7.27	44.97	5.77	0.77	40.42	54.00	13.58
2 345.41	55.44	Peak	V	28.00	7.27	44.96	5.77	-	51.52	74.00	22.48
2 320.85	43.43	Average	V	28.00	7.19	44.97	5.77	0.77	40.19	54.00	13.81
Test Data for High Channel											
2 484.64	57.55	Peak	H	28.83	7.62	44.91	5.77	-	54.86	74.00	15.97
2 483.58	45.48	Average	H	28.83	7.62	44.91	5.77	0.77	43.56	54.00	3.05
2 483.92	57.30	Peak	V	28.83	7.62	44.91	5.77	-	54.61	74.00	15.88
2 484.07	43.99	Average	V	28.83	7.62	44.91	5.77	0.77	42.07	54.00	3.34

Tabulated test data for Restricted Band

Remark: "H": Horizontal, "V": Vertical

Margin (dB) = Limits (dBμV/m) - Total Level (dBμV/m)

Total Level = Reading + Antenna Factor + Cable Loss + ATT + Duty Factor – AMP Factor

9.7.1.4 Test data for 802.11n_HT40 WLAN Mode

9.7.1.4.1 Test data for Antenna 1

- Resolution bandwidth : 1 MHz and Peak Detector for Peak Mode
1 MHz and RMS Detector for Average Mode
- Video bandwidth : 3 MHz for Peak and Average Mode
- Measurement distance : 3 m
- Duty Cycle : 71.27 %
- Result : PASSED

Frequency (MHz)	Reading (dBμV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	AMP Factor	ATT (dB)	Duty Factor (dB)	Total (dBμV/m)	Limits (dBμV/m)	Margin (dB)
Test Data for Low Channel											
2 386.92	62.04	Peak	H	28.37	7.44	44.95	5.77	-	58.67	74.00	15.33
2 389.61	48.55	Average	H	28.40	7.44	44.94	5.77	1.47	46.69	54.00	7.31
2 390.06	59.86	Peak	V	28.40	7.44	44.94	5.77	-	56.53	74.00	17.47
2 390.06	47.26	Average	V	28.40	7.44	44.94	5.77	1.47	45.40	54.00	8.60
Test Data for High Channel											
2 483.53	59.99	Peak	H	28.83	7.62	44.91	5.77	-	57.30	74.00	16.70
2 484.20	48.02	Average	H	28.83	7.62	44.91	5.77	1.47	46.80	54.00	7.20
2 483.48	56.31	Peak	V	28.83	7.62	44.91	5.77	-	53.62	74.00	20.38
2 484.06	44.38	Average	V	28.83	7.62	44.91	5.77	1.47	43.16	54.00	10.84

Tabulated test data for Restricted Band

Remark: "H": Horizontal, "V": Vertical

Margin (dB) = Limits (dBμV/m) - Total Level (dBμV/m)

Total Level = Reading + Antenna Factor + Cable Loss + ATT + Duty Factor – AMP Factor

9.7.1.4.2 Test data for Antenna 2

- Resolution bandwidth : 1 MHz and Peak Detector for Peak Mode
1 MHz and RMS Detector for Average Mode
- Video bandwidth : 3 MHz for Peak and Average Mode
- Measurement distance : 3 m
- Duty Cycle : 71.26 %
- Result : PASSED

Frequency (MHz)	Reading (dBμV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	AMP Factor	ATT (dB)	Duty Factor (dB)	Total (dBμV/m)	Limits (dBμV/m)	Margin (dB)
Test Data for Low Channel											
2 389.05	58.91	Peak	H	28.39	7.44	44.94	5.77	-	55.57	74.00	18.43
2 389.38	47.25	Average	H	28.39	7.44	44.94	5.77	1.47	45.38	54.00	8.62
2 388.04	58.98	Peak	V	28.38	7.44	44.94	5.77	-	55.63	74.00	18.37
2 389.61	45.03	Average	V	28.40	7.44	44.94	5.77	1.47	43.17	54.00	10.83
Test Data for High Channel											
2 485.06	63.24	Peak	H	28.83	7.62	44.91	5.77	-	60.55	74.00	13.45
2 483.91	48.46	Average	H	28.83	7.62	44.91	5.77	1.47	47.24	54.00	6.76
2 484.82	61.99	Peak	V	28.83	7.62	44.91	5.77	-	59.30	74.00	14.70
2 483.86	48.45	Average	V	28.83	7.62	44.91	5.77	1.47	47.23	54.00	6.77

Tabulated test data for Restricted Band

Remark: "H": Horizontal, "V": Vertical

Margin (dB) = Limits (dBμV/m) - Total Level (dBμV/m)

Total Level = Reading + Antenna Factor + Cable Loss + ATT + Duty Factor – AMP Factor

9.7.1.4.3 Test data for Multiple Transmit

- Resolution bandwidth : 1 MHz and Peak Detector for Peak Mode
1 MHz and RMS Detector for Average Mode
- Video bandwidth : 3 MHz for Peak and Average Mode
- Measurement distance : 3 m
- Duty Cycle : 71.26 %
- Result : PASSED

Frequency (MHz)	Reading (dBμV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	AMP Factor	ATT (dB)	Duty Factor (dB)	Total (dBμV/m)	Limits (dBμV/m)	Margin (dB)
Test Data for Low Channel											
2 387.03	56.78	Peak	H	28.37	7.44	44.95	5.77	-	53.41	74.00	20.59
2 389.72	45.00	Average	H	28.40	7.44	44.94	5.77	1.47	43.14	54.00	10.86
2 388.15	56.80	Peak	V	28.38	7.44	44.94	5.77	-	53.45	74.00	20.55
2 387.71	44.07	Average	V	28.38	7.44	44.94	5.77	1.47	42.19	54.00	11.81
Test Data for High Channel											
2 487.51	59.71	Peak	H	28.82	7.62	44.90	5.77	-	57.02	74.00	16.98
2 484.01	44.77	Average	H	28.83	7.62	44.91	5.77	1.47	43.55	54.00	10.45
2 486.50	55.36	Peak	V	28.83	7.62	44.91	5.77	-	52.67	74.00	21.33
2 483.96	43.83	Average	V	28.83	7.62	44.91	5.77	1.47	42.61	54.00	11.39

Tabulated test data for Restricted Band

Remark: "H": Horizontal, "V": Vertical

Margin (dB) = Limits (dBμV/m) - Total Level (dBμV/m)

Total Level = Reading + Antenna Factor + Cable Loss + ATT + Duty Factor – AMP Factor

9.6.2 Spurious & Harmonic Radiated Emission

9.6.2.1 Test data for 802.11b WLAN Mode

9.6.2.1.1 Test data for Antenna 1

- Resolution bandwidth : 1 MHz and Peak Detector for Peak Mode for the emissions fall in restricted band,
1 MHz and RMS Detector for Average Mode for the emissions fall in restricted band
100 kHz for Peak Mode for the emissions outside restricted band
- Video bandwidth : 3 MHz for Peak and Average Mode
- Frequency range : 1 GHz ~ 26.5 GHz
- Measurement distance : 3 m
- Duty Cycle : 99.89 %
- Result : PASSED

Frequency (MHz)	Reading (dBμV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	AMP Factor	Duty Factor (dB)	Total (dBμV/m)	Limits (dBμV/m)	Margin (dB)
Test Data for Low Channel										
4 824.00	50.34	Peak	H	33.45	12.02	44.66	-	51.15	74.00	22.85
4 824.00	38.38	Average	H	33.45	12.02	44.66	0.01	39.20	54.00	14.80
4 824.00	49.44	Peak	V	33.45	12.02	44.66	-	50.25	74.00	23.75
4 824.00	38.52	Average	V	33.45	12.02	44.66	0.01	39.34	54.00	14.66
Test Data for Middle Channel										
4 874.00	49.79	Peak	H	33.45	12.02	44.68	-	50.58	74.00	23.42
4 874.00	40.77	Average	H	33.45	12.02	44.68	0.01	41.57	54.00	12.43
4 874.00	49.44	Peak	V	33.45	12.02	44.68	-	50.23	74.00	23.77
4 874.00	37.46	Average	V	33.45	12.02	44.68	0.01	38.26	54.00	15.74
Test Data for High Channel										
4 924.00	49.78	Peak	H	33.55	12.02	44.68	-	50.67	74.00	23.33
4 924.00	37.91	Average	H	33.55	12.02	44.68	0.01	38.81	54.00	15.19
4 924.00	50.03	Peak	V	33.55	12.02	44.68	-	50.92	74.00	23.08
4 924.00	37.77	Average	V	33.55	12.02	44.68	0.01	38.67	54.00	15.33

Tabulated test data for Restricted Band

Remark: "H": Horizontal, "V": Vertical

Margin (dB) = Limits (dBμV/m) - Total Level (dBμV/m)

Total Level = Reading + Antenna Factor + Cable Loss + Duty Factor - AMP Factor

9.6.2.1.2 Test data for Antenna 2

- Resolution bandwidth : 1 MHz and Peak Detector for Peak Mode for the emissions fall in restricted band,
1 MHz and RMS Detector for Average Mode for the emissions fall in restricted band
100 kHz for Peak Mode for the emissions outside restricted band
- Video bandwidth : 3 MHz for Peak and Average Mode
- Frequency range : 1 GHz ~ 26.5 GHz
- Measurement distance : 3 m
- Duty Cycle : 99.89 %
- Result : PASSED

Frequency (MHz)	Reading (dBμV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	AMP Factor	Duty Factor (dB)	Total (dBμV/m)	Limits (dBμV/m)	Margin (dB)
Test Data for Low Channel										
4 824.00	49.61	Peak	H	33.45	12.02	44.66	-	50.42	74.00	23.58
4 824.00	37.57	Average	H	33.45	12.02	44.66	0.01	38.39	54.00	15.61
4 824.00	49.64	Peak	V	33.45	12.02	44.66	-	50.45	74.00	23.55
4 824.00	37.67	Average	V	33.45	12.02	44.66	0.01	38.49	54.00	15.51
Test Data for Middle Channel										
4 874.00	49.32	Peak	H	33.45	12.02	44.68	-	50.11	74.00	23.89
4 874.00	37.48	Average	H	33.45	12.02	44.68	0.01	38.28	54.00	15.72
4 874.00	49.71	Peak	V	33.45	12.02	44.68	-	50.50	74.00	23.50
4 874.00	37.85	Average	V	33.45	12.02	44.68	0.01	38.65	54.00	15.35
Test Data for High Channel										
4 924.00	49.71	Peak	H	33.55	12.02	44.68	-	50.60	74.00	23.40
4 924.00	37.56	Average	H	33.55	12.02	44.68	0.01	38.46	54.00	15.54
4 924.00	50.08	Peak	V	33.55	12.02	44.68	-	50.97	74.00	23.03
4 924.00	39.37	Average	V	33.55	12.02	44.68	0.01	40.27	54.00	13.73

Tabulated test data for Restricted Band

Remark: "H": Horizontal, "V": Vertical

Margin (dB) = Limits (dBμV/m) - Total Level (dBμV/m)

Total Level = Reading + Antenna Factor + Cable Loss + Duty Factor– AMP Factor

9.6.2.2 Test data for 802.11g WLAN Mode

9.6.2.2.1 Test data for Antenna 1

- Resolution bandwidth : 1 MHz and Peak Detector for Peak Mode for the emissions fall in restricted band,
1 MHz and RMS Detector for Average Mode for the emissions fall in restricted band
100 kHz for Peak Mode for the emissions outside restricted band
- Video bandwidth : 3 MHz for Peak and Average Mode
- Frequency range : 1 GHz ~ 26.5 GHz
- Measurement distance : 3 m
- Duty Cycle : 99.19 %
- Result : PASSED

Frequency (MHz)	Reading (dBμV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	AMP Factor	Duty Factor (dB)	Total (dBμV/m)	Limits (dBμV/m)	Margin (dB)
Test Data for Low Channel										
4 824.00	49.36	Peak	H	33.45	12.02	44.66	-	50.17	74.00	23.83
4 824.00	37.57	Average	H	33.45	12.02	44.66	0.04	38.42	54.00	15.58
4 824.00	49.51	Peak	V	33.45	12.02	44.66	-	50.32	74.00	23.68
4 824.00	37.65	Average	V	33.45	12.02	44.66	0.04	38.50	54.00	15.50
Test Data for Middle Channel										
4 874.00	49.75	Peak	H	33.45	12.02	44.68	-	50.54	74.00	23.46
4 874.00	37.38	Average	H	33.45	12.02	44.68	0.04	38.21	54.00	15.79
4 874.00	49.46	Peak	V	33.45	12.02	44.68	-	50.25	74.00	23.75
4 874.00	37.50	Average	V	33.45	12.02	44.68	0.04	38.33	54.00	15.67
Test Data for High Channel										
4 924.00	49.68	Peak	H	33.55	12.02	44.68	-	50.57	74.00	23.43
4 924.00	37.49	Average	H	33.55	12.02	44.68	0.04	38.42	54.00	15.58
4 924.00	49.87	Peak	V	33.55	12.02	44.68	-	50.76	74.00	23.24
4 924.00	37.50	Average	V	33.55	12.02	44.68	0.04	38.43	54.00	15.57

Tabulated test data for Restricted Band

Remark: "H": Horizontal, "V": Vertical

$$\text{Margin (dB)} = \text{Limits (dB}\mu\text{V/m)} - \text{Total Level (dB}\mu\text{V/m)}$$

$$\text{Total Level} = \text{Reading} + \text{Antenna Factor} + \text{Cable Loss} + \text{Duty Factor} - \text{AMP Factor}$$

9.6.2.2.2 Test data for Antenna 2

- Resolution bandwidth : 1 MHz and Peak Detector for Peak Mode for the emissions fall in restricted band,
1 MHz and RMS Detector for Average Mode for the emissions fall in restricted band
100 kHz for Peak Mode for the emissions outside restricted band
- Video bandwidth : 3 MHz for Peak and Average Mode
- Frequency range : 1 GHz ~ 26.5 GHz
- Measurement distance : 3 m
- Duty Cycle : 99.21 %
- Result : PASSED

Frequency (MHz)	Reading (dBμV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	AMP Factor	Duty Factor (dB)	Total (dBμV/m)	Limits (dBμV/m)	Margin (dB)
Test Data for Low Channel										
4 824.00	49.56	Peak	H	33.45	12.02	44.66	-	50.37	74.00	23.63
4 824.00	37.77	Average	H	33.45	12.02	44.66	0.04	38.62	54.00	15.38
4 824.00	49.69	Peak	V	33.45	12.02	44.66	-	50.50	74.00	23.50
4 824.00	37.64	Average	V	33.45	12.02	44.66	0.04	38.49	54.00	15.51
Test Data for Middle Channel										
4 874.00	49.93	Peak	H	33.45	12.02	44.68	-	50.72	74.00	23.28
4 874.00	37.49	Average	H	33.45	12.02	44.68	0.04	38.32	54.00	15.68
4 874.00	49.88	Peak	V	33.45	12.02	44.68	-	50.67	74.00	23.33
4 874.00	37.42	Average	V	33.45	12.02	44.68	0.04	38.25	54.00	15.75
Test Data for High Channel										
4 924.00	49.97	Peak	H	33.55	12.02	44.68	-	50.86	74.00	23.14
4 924.00	37.54	Average	H	33.55	12.02	44.68	0.04	38.47	54.00	15.53
4 924.00	49.63	Peak	V	33.55	12.02	44.68	-	50.52	74.00	23.48
4 924.00	37.67	Average	V	33.55	12.02	44.68	0.04	38.60	54.00	15.40

Tabulated test data for Restricted Band

Remark: "H": Horizontal, "V": Vertical

Margin (dB) = Limits (dBμV/m) - Total Level (dBμV/m)

Total Level = Reading + Antenna Factor + Cable Loss + Duty Factor- AMP Factor

9.6.2.3 Test data for 802.11n_HT20 WLAN Mode

9.6.2.3.1 Test data for Antenna 1

- Resolution bandwidth : 1 MHz and Peak Detector for Peak Mode for the emissions fall in restricted band,
1 MHz and RMS Detector for Average Mode for the emissions fall in restricted band
100 kHz for Peak Mode for the emissions outside restricted band
- Video bandwidth : 3 MHz for Peak and Average Mode
- Frequency range : 1 GHz ~ 26.5 GHz
- Measurement distance : 3 m
- Duty Cycle : 83.86 %
- Result : PASSED

Frequency (MHz)	Reading (dBμV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	AMP Factor	Duty Factor (dB)	Total (dBμV/m)	Limits (dBμV/m)	Margin (dB)
Test Data for Low Channel										
4 824.00	51.25	Peak	H	33.45	12.02	44.66	-	52.06	74.00	21.94
4 824.00	38.45	Average	H	33.45	12.02	44.66	0.77	40.03	54.00	13.97
4 824.00	50.00	Peak	V	33.45	12.02	44.66	-	50.81	74.00	23.19
4 824.00	38.17	Average	V	33.45	12.02	44.66	0.77	39.75	54.00	14.25
Test Data for Middle Channel										
4 874.00	50.28	Peak	H	33.45	12.02	44.68	-	51.07	74.00	22.93
4 874.00	38.03	Average	H	33.45	12.02	44.68	0.77	39.59	54.00	14.41
4 874.00	49.70	Peak	V	33.45	12.02	44.68	-	50.49	74.00	23.51
4 874.00	37.86	Average	V	33.45	12.02	44.68	0.77	39.42	54.00	14.58
Test Data for High Channel										
4 924.00	50.52	Peak	H	33.55	12.02	44.68	-	51.41	74.00	22.59
4 924.00	38.05	Average	H	33.55	12.02	44.68	0.77	39.71	54.00	14.29
4 924.00	49.99	Peak	V	33.55	12.02	44.68	-	50.88	74.00	23.12
4 924.00	38.10	Average	V	33.55	12.02	44.68	0.77	39.76	54.00	14.24

Tabulated test data for Restricted Band

Remark: "H": Horizontal, "V": Vertical

$$\text{Margin (dB)} = \text{Limits (dB}\mu\text{V/m)} - \text{Total Level (dB}\mu\text{V/m)}$$

$$\text{Total Level} = \text{Reading} + \text{Antenna Factor} + \text{Cable Loss} + \text{Duty Factor} - \text{AMP Factor}$$

9.6.2.2.2 Test data for Antenna 2

- Resolution bandwidth : 1 MHz and Peak Detector for Peak Mode for the emissions fall in restricted band,
1 MHz and RMS Detector for Average Mode for the emissions fall in restricted band
100 kHz for Peak Mode for the emissions outside restricted band
- Video bandwidth : 3 MHz for Peak and Average Mode
- Frequency range : 1 GHz ~ 26.5 GHz
- Measurement distance : 3 m
- Duty Cycle : 83.72 %
- Result : PASSED

Frequency (MHz)	Reading (dBμV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	AMP Factor	Duty Factor (dB)	Total (dBμV/m)	Limits (dBμV/m)	Margin (dB)
Test Data for Low Channel										
4 824.00	49.53	Peak	H	33.45	12.02	44.66	-	50.34	74.00	23.66
4 824.00	37.79	Average	H	33.45	12.02	44.66	0.77	39.37	54.00	14.63
4 824.00	50.23	Peak	V	33.45	12.02	44.66	-	51.04	74.00	22.96
4 824.00	37.82	Average	V	33.45	12.02	44.66	0.77	39.40	54.00	14.60
Test Data for Middle Channel										
4 874.00	49.75	Peak	H	33.45	12.02	44.68	-	50.54	74.00	23.46
4 874.00	37.78	Average	H	33.45	12.02	44.68	0.77	39.34	54.00	14.66
4 874.00	49.90	Peak	V	33.45	12.02	44.68	-	50.69	74.00	23.31
4 874.00	37.65	Average	V	33.45	12.02	44.68	0.77	39.21	54.00	14.79
Test Data for High Channel										
4 924.00	49.81	Peak	H	33.55	12.02	44.68	-	50.70	74.00	23.30
4 924.00	37.73	Average	H	33.55	12.02	44.68	0.77	39.39	54.00	14.61
4 924.00	50.03	Peak	V	33.55	12.02	44.68	-	50.92	74.00	23.08
4 924.00	37.65	Average	V	33.55	12.02	44.68	0.77	39.31	54.00	14.69

Tabulated test data for Restricted Band

Remark: "H": Horizontal, "V": Vertical

Margin (dB) = Limits (dBμV/m) - Total Level (dBμV/m)

Total Level = Reading + Antenna Factor + Cable Loss + Duty Factor- AMP Factor

9.6.2.3.1 Test data for Multiple Transmit

- Resolution bandwidth : 1 MHz and Peak Detector for Peak Mode for the emissions fall in restricted band,
1 MHz and RMS Detector for Average Mode for the emissions fall in restricted band
100 kHz for Peak Mode for the emissions outside restricted band
- Video bandwidth : 3 MHz for Peak and Average Mode
- Frequency range : 1 GHz ~ 26.5 GHz
- Measurement distance : 3 m
- Duty Cycle : 83.72 %
- Result : PASSED

Frequency (MHz)	Reading (dBμV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	AMP Factor	Duty Factor (dB)	Total (dBμV/m)	Limits (dBμV/m)	Margin (dB)
Test Data for Low Channel										
4 824.00	50.43	Peak	H	33.45	12.02	44.66	-	51.24	74.00	22.76
4 824.00	38.22	Average	H	33.45	12.02	44.66	0.77	39.80	54.00	14.20
4 824.00	50.35	Peak	V	33.45	12.02	44.66	-	51.16	74.00	22.84
4 824.00	38.08	Average	V	33.45	12.02	44.66	0.77	39.66	54.00	14.34
Test Data for Middle Channel										
4 874.00	49.89	Peak	H	33.45	12.02	44.68	-	50.68	74.00	23.32
4 874.00	37.87	Average	H	33.45	12.02	44.68	0.77	39.43	54.00	14.57
4 874.00	49.69	Peak	V	33.45	12.02	44.68	-	50.48	74.00	23.52
4 874.00	38.04	Average	V	33.45	12.02	44.68	0.77	39.60	54.00	14.40
Test Data for High Channel										
4 924.00	50.37	Peak	H	33.55	12.02	44.68	-	51.26	74.00	22.74
4 924.00	37.95	Average	H	33.55	12.02	44.68	0.77	39.61	54.00	14.39
4 924.00	49.84	Peak	V	33.55	12.02	44.68	-	50.73	74.00	23.27
4 924.00	37.89	Average	V	33.55	12.02	44.68	0.77	39.55	54.00	14.45

Tabulated test data for Restricted Band

Remark: "H": Horizontal, "V": Vertical

Margin (dB) = Limits (dBμV/m) - Total Level (dBμV/m)

Total Level = Reading + Antenna Factor + Cable Loss + Duty Factor- AMP Factor

9.6.2.4 Test data for 802.11n_HT40 WLAN Mode

9.6.2.4.1 Test data for Antenna 1

- Resolution bandwidth : 1 MHz and Peak Detector for Peak Mode for the emissions fall in restricted band,
1 MHz and RMS Detector for Average Mode for the emissions fall in restricted band
100 kHz for Peak Mode for the emissions outside restricted band
- Video bandwidth : 3 MHz for Peak and Average Mode
- Frequency range : 1 GHz ~ 26.5 GHz
- Measurement distance : 3 m
- Duty Cycle : 71.27 %
- Result : PASSED

Frequency (MHz)	Reading (dBμV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	AMP Factor	Duty Factor (dB)	Total (dBμV/m)	Limits (dBμV/m)	Margin (dB)
Test Data for Low Channel										
4 844.00	50.13	Peak	H	33.45	12.02	44.67	-	50.93	74.00	23.07
4 844.00	37.72	Average	H	33.45	12.02	44.67	1.47	39.99	54.00	14.01
4 844.00	49.43	Peak	V	33.45	12.02	44.67	-	50.23	74.00	23.77
4 844.00	37.70	Average	V	33.45	12.02	44.67	1.47	39.97	54.00	14.03
Test Data for Middle Channel										
4 874.00	49.74	Peak	H	33.45	12.02	44.68	-	50.53	74.00	23.47
4 874.00	37.80	Average	H	33.45	12.02	44.68	1.47	40.06	54.00	13.94
4 874.00	49.85	Peak	V	33.45	12.02	44.68	-	50.64	74.00	23.36
4 874.00	37.70	Average	V	33.45	12.02	44.68	1.47	39.96	54.00	14.04
Test Data for High Channel										
4 904.00	49.99	Peak	H	33.55	12.02	44.68	-	50.88	74.00	23.12
4 904.00	37.72	Average	H	33.55	12.02	44.68	1.47	40.08	54.00	13.92
4 904.00	49.48	Peak	V	33.55	12.02	44.68	-	50.37	74.00	23.63
4 904.00	37.60	Average	V	33.55	12.02	44.68	1.47	39.96	54.00	14.04

Tabulated test data for Restricted Band

Remark: "H": Horizontal, "V": Vertical

$$\text{Margin (dB)} = \text{Limits (dB}\mu\text{V/m)} - \text{Total Level (dB}\mu\text{V/m)}$$

$$\text{Total Level} = \text{Reading} + \text{Antenna Factor} + \text{Cable Loss} + \text{Duty Factor} - \text{AMP Factor}$$

9.6.2.4.2 Test data for Antenna 2

- Resolution bandwidth : 1 MHz and Peak Detector for Peak Mode for the emissions fall in restricted band,
1 MHz and RMS Detector for Average Mode for the emissions fall in restricted band
100 kHz for Peak Mode for the emissions outside restricted band
- Video bandwidth : 3 MHz for Peak and Average Mode
- Frequency range : 1 GHz ~ 26.5 GHz
- Measurement distance : 3 m
- Duty Cycle : 71.26 %
- Result : PASSED

Frequency (MHz)	Reading (dBμV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	AMP Factor	Duty Factor (dB)	Total (dBμV/m)	Limits (dBμV/m)	Margin (dB)
Test Data for Low Channel										
4 844.00	49.81	Peak	H	33.45	12.02	44.67	-	50.61	74.00	23.39
4 844.00	37.81	Average	H	33.45	12.02	44.67	1.47	40.08	54.00	13.92
4 844.00	49.77	Peak	V	33.45	12.02	44.67	-	50.57	74.00	23.43
4 844.00	37.76	Average	V	33.45	12.02	44.67	1.47	40.03	54.00	13.97
Test Data for Middle Channel										
4 874.00	49.40	Peak	H	33.45	12.02	44.68	-	50.19	74.00	23.81
4 874.00	37.88	Average	H	33.45	12.02	44.68	1.47	40.14	54.00	13.86
4 874.00	50.82	Peak	V	33.45	12.02	44.68	-	51.61	74.00	22.39
4 874.00	37.68	Average	V	33.45	12.02	44.68	1.47	39.94	54.00	14.06
Test Data for High Channel										
4 904.00	50.03	Peak	H	33.55	12.02	44.68	-	50.92	74.00	23.08
4 904.00	37.77	Average	H	33.55	12.02	44.68	1.47	40.13	54.00	13.87
4 904.00	49.72	Peak	V	33.55	12.02	44.68	-	50.61	74.00	23.39
4 904.00	37.58	Average	V	33.55	12.02	44.68	1.47	39.94	54.00	14.06

Tabulated test data for Restricted Band

Remark: "H": Horizontal, "V": Vertical

Margin (dB) = Limits (dBμV/m) - Total Level (dBμV/m)

Total Level = Reading + Antenna Factor + Cable Loss + Duty Factor– AMP Factor

9.6.2.4.1 Test data for Multiple Transmit

- Resolution bandwidth : 1 MHz and Peak Detector for Peak Mode for the emissions fall in restricted band,
1 MHz and RMS Detector for Average Mode for the emissions fall in restricted band
100 kHz for Peak Mode for the emissions outside restricted band
- Video bandwidth : 3 MHz for Peak and Average Mode
- Frequency range : 1 GHz ~ 26.5 GHz
- Measurement distance : 3 m
- Duty Cycle : 71.26 %
- Result : PASSED

Frequency (MHz)	Reading (dBμV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	AMP Factor	Duty Factor (dB)	Total (dBμV/m)	Limits (dBμV/m)	Margin (dB)
Test Data for Low Channel										
4 844.00	50.62	Peak	H	33.45	12.02	44.67	-	51.42	74.00	22.58
4 844.00	38.62	Average	H	33.45	12.02	44.67	1.47	40.89	54.00	13.11
4 844.00	50.14	Peak	V	33.45	12.02	44.67	-	50.94	74.00	23.06
4 844.00	38.19	Average	V	33.45	12.02	44.67	1.47	40.46	54.00	13.54
Test Data for Middle Channel										
4 874.00	50.78	Peak	H	33.45	12.02	44.68	-	51.57	74.00	22.43
4 874.00	38.60	Average	H	33.45	12.02	44.68	1.47	40.86	54.00	13.14
4 874.00	50.88	Peak	V	33.45	12.02	44.68	-	51.67	74.00	22.33
4 874.00	38.18	Average	V	33.45	12.02	44.68	1.47	40.44	54.00	13.56
Test Data for High Channel										
4 904.00	50.14	Peak	H	33.55	12.02	44.68	-	51.03	74.00	22.97
4 904.00	38.33	Average	H	33.55	12.02	44.68	1.47	40.69	54.00	13.31
4 904.00	50.09	Peak	V	33.55	12.02	44.68	-	50.98	74.00	23.02
4 904.00	38.22	Average	V	33.55	12.02	44.68	1.47	40.58	54.00	13.42

Tabulated test data for Restricted Band

Remark: "H": Horizontal, "V": Vertical

Margin (dB) = Limits (dBμV/m) - Total Level (dBμV/m)

Total Level = Reading + Antenna Factor + Cable Loss + Duty Factor- AMP Factor

10. PEAK POWER SPECTRUL DENSITY

10.1 Operating environment

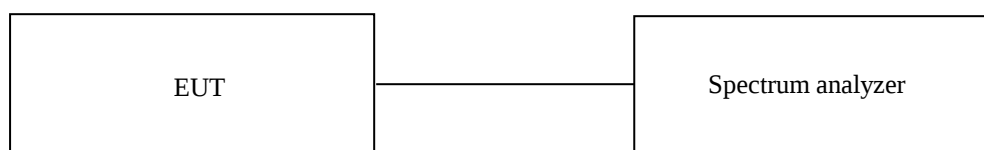
Temperature : 24 °C

Relative humidity : 52 % R.H.

10.2 Test set-up

The antenna output of the EUT was connected to the spectrum analyzer.

The resolution bandwidth is set to $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$, the video bandwidth is set to 3 times the resolution bandwidth.



10.3 Test Date

September 26, 2022 ~ October 21, 2022

10.4 Test data for 802.11b WLAN Mode

10.4.1 Test data for Antenna 1

-. Test Result : Pass

-. Operating Condition : Continuous transmitting mode

Channel	Frequency (MHz)	Measured Value (dBm)	Duty Factor (dB)	Total Value (dBm)	Limit (dBm)	Margin (dB)
Low	2 412.00	-14.15	0.01	-14.14	8.00	22.14
Middle	2 437.00	-14.23	0.01	-14.22	8.00	22.22
High	2 462.00	-14.16	0.01	-14.15	8.00	22.15

Remark. Margin = Limit – Total Value (Measured Value + Duty Factor)

10.4.2 Test data for Antenna 2

-. Test Result : Pass

-. Operating Condition : Continuous transmitting mode

Channel	Frequency (MHz)	Measured Value (dBm)	Duty Factor (dB)	Total Value (dBm)	Limit (dBm)	Margin (dB)
Low	2 412.00	-13.11	0.01	-13.10	8.00	21.10
Middle	2 437.00	-13.13	0.01	-13.12	8.00	21.12
High	2 462.00	-13.32	0.01	-13.31	8.00	21.31

Remark. Margin = Limit – Total Value (Measured Value + Duty Factor)

10.5 Test data for 802.11g WLAN Mode

10.5.1 Test data for Antenna 1

-. Test Result : Pass

-. Operating Condition : Continuous transmitting mode

Channel	Frequency (MHz)	Measured Value (dBm)	Duty Factor (dB)	Total Value (dBm)	Limit (dBm)	Margin (dB)
Low	2 412.00	-19.74	0.04	-19.70	8.00	27.70
Middle	2 437.00	-19.40	0.04	-19.36	8.00	27.36
High	2 462.00	-19.51	0.04	-19.47	8.00	27.47

Remark. Margin = Limit – Total Value (Measured Value + Duty Factor)

10.5.2 Test data for Antenna 2

-. Test Result : Pass

-. Operating Condition : Continuous transmitting mode

Channel	Frequency (MHz)	Measured Value (dBm)	Duty Factor (dB)	Total Value (dBm)	Limit (dBm)	Margin (dB)
Low	2 412.00	-18.27	0.04	-18.23	8.00	26.23
Middle	2 437.00	-18.52	0.04	-18.48	8.00	26.48
High	2 462.00	-18.25	0.04	-18.21	8.00	26.21

Remark. Margin = Limit – Total Value (Measured Value + Duty Factor)

10.6 Test data for 802.11n_HT20 WLAN Mode

10.6.1 Test data for Antenna 1

-. Test Result : Pass

-. Operating Condition : Continuous transmitting mode

Channel	Frequency (MHz)	Measured Value (dBm)	Duty Factor (dB)	Total Value (dBm)	Limit (dBm)	Margin (dB)
Low	2 412.00	-21.46	0.77	-20.69	8.00	28.69
Middle	2 437.00	-21.62	0.77	-20.85	8.00	28.85
High	2 462.00	-21.40	0.77	-20.63	8.00	28.63

Remark. Margin = Limit – Measured value

10.6.2 Test data for Antenna 2

-. Test Result : Pass

-. Operating Condition : Continuous transmitting mode

Channel	Frequency (MHz)	Measured Value (dBm)	Duty Factor (dB)	Total Value (dBm)	Limit (dBm)	Margin (dB)
Low	2 412.00	-20.14	0.77	-19.37	8.00	27.37
Middle	2 437.00	-20.43	0.77	-19.66	8.00	27.66
High	2 462.00	-20.56	0.77	-19.79	8.00	27.79

Remark. Margin = Limit – Measured value

10.6.3 Test data for Multiple Transmit

10.6.3.1 Test data for Antenna 1

-. Test Result : Pass

-. Operating Condition : Continuous transmitting mode

Channel	Frequency (MHz)	Measured Value (dBm)	Duty Factor (dB)	Total Value (dBm)	Limit (dBm)	Margin (dB)
Low	2 412.00	-24.27	0.77	-23.50	8.00	31.50
Middle	2 437.00	-24.62	0.77	-23.85	8.00	31.85
High	2 462.00	-24.31	0.77	-23.54	8.00	31.54

Remark. Margin = Limit – Measured value

10.6.3.2 Test data for Antenna 2

-. Test Result : Pass

-. Operating Condition : Continuous transmitting mode

Channel	Frequency (MHz)	Measured Value (dBm)	Duty Factor (dB)	Total Value (dBm)	Limit (dBm)	Margin (dB)
Low	2 412.00	-22.59	0.77	-21.82	8.00	29.82
Middle	2 437.00	-22.53	0.77	-21.76	8.00	29.76
High	2 462.00	-22.55	0.77	-21.78	8.00	29.78

Remark. Margin = Limit – Measured value

10.6.3.3 Test data for Antenna 1 + Antenna 2

-. Test Result : Pass

-. Operating Condition : Continuous transmitting mode

Channel	Frequency (MHz)	SUM Value (dBm)	Limit (dBm)	Margin (dB)
Low	2 412.00	-19.57	8.00	27.57
Middle	2 437.00	-19.67	8.00	27.67
High	2 462.00	-19.56	8.00	27.56

Remark. Margin = Limit – SUM Value (Antenna 1 Total value + Antenna 2 Total value)

10.6 Test data for 802.11n_HT40 WLAN Mode

10.6.1 Test data for Antenna 1

-. Test Result : Pass

-. Operating Condition : Continuous transmitting mode

Channel	Frequency (MHz)	Measured Value (dBm)	Duty Factor (dB)	Total Value (dBm)	Limit (dBm)	Margin (dB)
Low	2 422.00	-24.92	1.47	-23.45	8.00	31.45
Middle	2 437.00	-24.80	1.47	-23.33	8.00	31.33
High	2 452.00	-25.10	1.47	-23.63	8.00	31.63

Remark. Margin = Limit – Measured value

10.6.2 Test data for Antenna 2

-. Test Result : Pass

-. Operating Condition : Continuous transmitting mode

Channel	Frequency (MHz)	Measured Value (dBm)	Duty Factor (dB)	Total Value (dBm)	Limit (dBm)	Margin (dB)
Low	2 422.00	-23.41	1.47	-21.94	8.00	29.94
Middle	2 437.00	-23.43	1.47	-21.96	8.00	29.96
High	2 452.00	-23.36	1.47	-21.89	8.00	29.89

Remark. Margin = Limit – Measured value

10.6.3 Test data for Multiple Transmit

10.6.3.1 Test data for Antenna 1

-. Test Result : Pass

-. Operating Condition : Continuous transmitting mode

Channel	Frequency (MHz)	Measured Value (dBm)	Duty Factor (dB)	Total Value (dBm)	Limit (dBm)	Margin (dB)
Low	2 422.00	-27.61	1.47	-26.14	8.00	34.14
Middle	2 437.00	-27.83	1.47	-26.36	8.00	34.36
High	2 452.00	-27.62	1.47	-26.15	8.00	34.15

Remark. Margin = Limit – Measured value

10.6.3.2 Test data for Antenna 2

-. Test Result : Pass

-. Operating Condition : Continuous transmitting mode

Channel	Frequency (MHz)	Measured Value (dBm)	Duty Factor (dB)	Total Value (dBm)	Limit (dBm)	Margin (dB)
Low	2 422.00	-26.21	1.47	-24.74	8.00	32.74
Middle	2 437.00	-26.18	1.47	-24.71	8.00	32.71
High	2 452.00	-26.24	1.47	-24.77	8.00	32.77

Remark. Margin = Limit – Measured value

10.6.3.3 Test data for Antenna 1 + Antenna 2

-. Test Result : Pass

-. Operating Condition : Continuous transmitting mode

Channel	Frequency (MHz)	SUM Value (dBm)	Limit (dBm)	Margin (dB)
Low	2 422.00	-22.37	8.00	30.37
Middle	2 437.00	-22.45	8.00	30.45
High	2 452.00	-22.40	8.00	30.40

Remark. Margin = Limit – SUM value (Antenna 1 Total value + Antenna 2 Total Value)

11. RADIATED EMISSION TEST

11.1 Operating environment

Temperature : 24 °C
Relative humidity : 52 % R.H.

11.2 Test set-up

The radiated emissions measurements were on the 3 m semi anechoic chamber. The EUT and other support equipment were placed on turntable above the ground plane. The interconnecting cables from outside test site were inserted into ferrite clamps at the point where the cables reach the turntable.

The frequency spectrum from 30 MHz to 26.5 GHz was scanned and emission levels maximized at each frequency recorded. The system was rotated 360°, and the antenna was varied in height between 1.0 m and 4.0 m in order to determine the maximum emission levels. This procedure was performed for both horizontal and vertical polarization of the receiving antenna.

11.3 Test Date

September 26, 2022 ~ October 21, 2022

11.4 Test data for 30 MHz ~ 1 000 MHz

11.4.1 Test data for WLAN 2.4 GHz

Humidity Level : 52 % R.H.

Temperature: 24 °C

Limits apply to : FCC CFR 47, PART 15, SUBPART C, SECTION 15.247

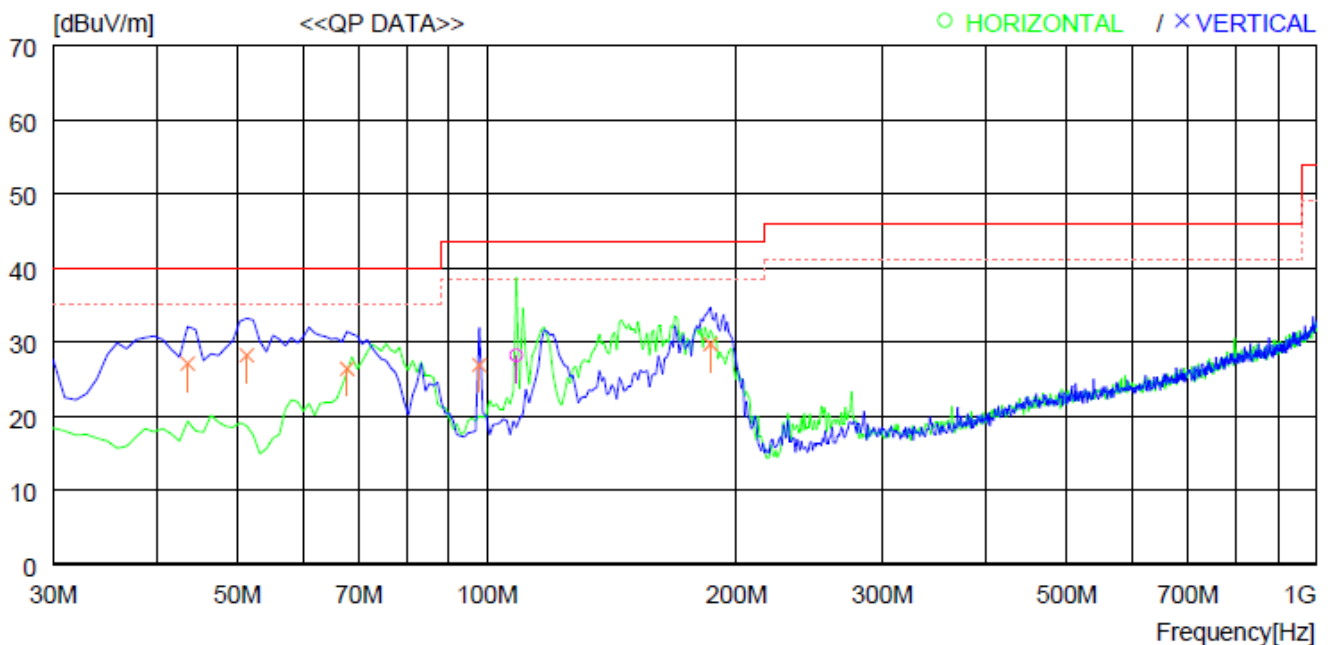
Result : PASSED

EUT : Network Webcam

Detector : CISPR Quasi-Peak (6 dB Bandwidth: 120 kHz)

-. Antenna 1, Antenna 2 and Multiple transmit tested, but the worst data were recorded.

LIMIT : FCC Part15 Subpart.B Class B (3m)
MARGIN: 5 dB



No.	FREQ	READING	ANT	LOSS	GAIN	RESULT	LIMIT	MARGIN	ANTENNA	TABLE
	[MHz]	[dBuV]	FACTOR	[dB]	[dB]	[dBuV/m]	[dBuV/m]	[dB]	[cm]	[DEG]
----- Horizontal -----										
1	108.570	42.1	17.1	2.0	33.0	28.2	43.5	15.3	100	359
----- Vertical -----										
2	43.580	43.2	15.7	1.3	33.1	27.1	40.0	12.9	100	40
3	51.340	47.3	12.8	1.2	33.1	28.2	40.0	11.8	100	0
4	67.830	44.9	13.0	1.6	33.1	26.4	40.0	13.6	200	350
5	97.900	43.1	15.0	1.9	33.1	26.9	43.5	16.6	200	294
6	186.170	43.8	16.3	2.6	33.0	29.7	43.5	13.8	100	0

11.4.2 Test data for Intermodulation Mode(WLAN 2.4 GHz + Bluetooth)

Humidity Level : 52 % R.H.

Temperature: 24 °C

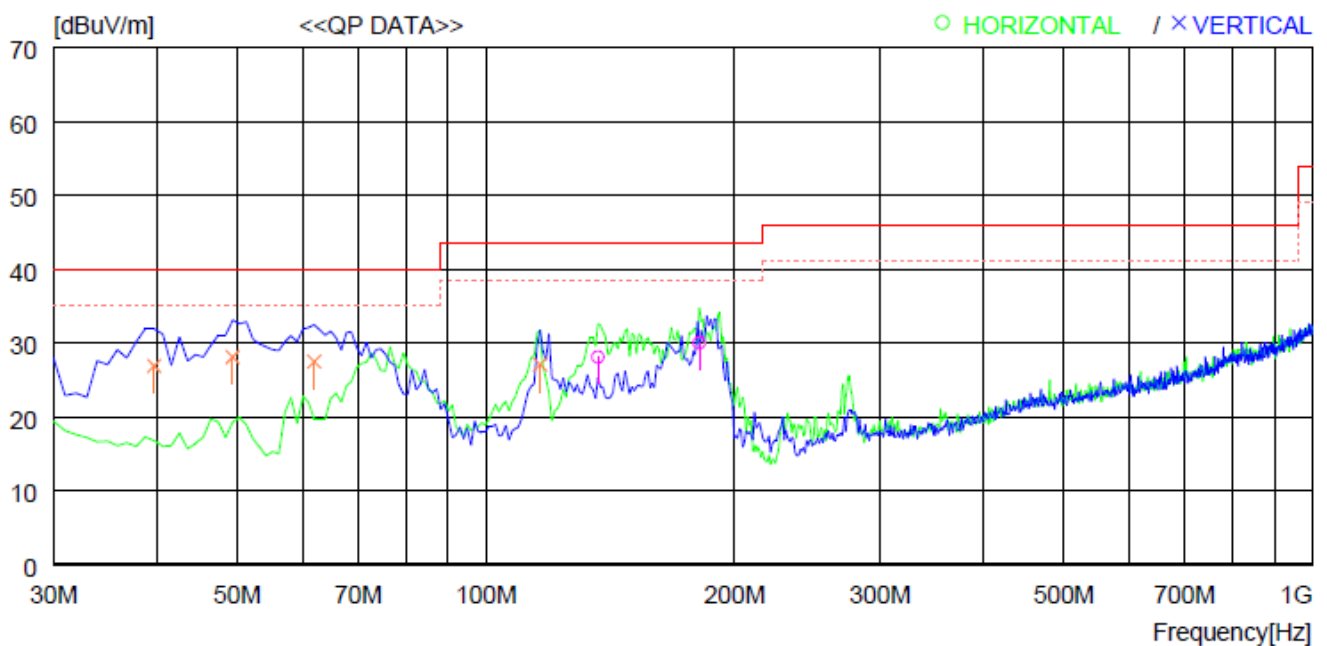
Limits apply to : FCC CFR 47, PART 15, SUBPART C, SECTION 15.247

Result : PASSED

EUT : Network Webcam

Detector : CISPR Quasi-Peak (6 dB Bandwidth: 120 kHz)

-. Antenna 1, Antenna 2 and Multiple transmit tested, but the worst data were recorded.

LIMIT : FCC Part15 Subpart.B Class B (3m)
MARGIN: 5 dB


No.	FREQ	READING	ANT	LOSS	GAIN	RESULT	LIMIT	MARGIN	ANTENNA	TABLE
	[MHz]	[dBuV]	FACTOR	[dB]	[dB]	[dBuV/m]	[dBuV/m]	[dB]	[cm]	[DEG]
----- Horizontal -----										
1	136.700	39.6	19.3	2.2	33.0	28.1	43.5	15.4	200	232
2	181.320	43.8	16.7	2.5	33.0	30.0	43.5	13.5	200	0
----- Vertical -----										
3	39.700	41.4	17.4	1.2	33.1	26.9	40.0	13.1	100	53
4	49.400	46.6	13.4	1.2	33.1	28.1	40.0	11.9	100	197
5	62.010	46.7	12.5	1.4	33.1	27.5	40.0	12.5	200	359
6	116.330	39.8	18.2	2.1	33.0	27.1	43.5	16.4	100	0

11.4.2 Test data for Intermodulation Mode(WLAN 2.4 GHz + WLAN 5 GHz)

Humidity Level : 52 % R.H.

Temperature: 24 °C

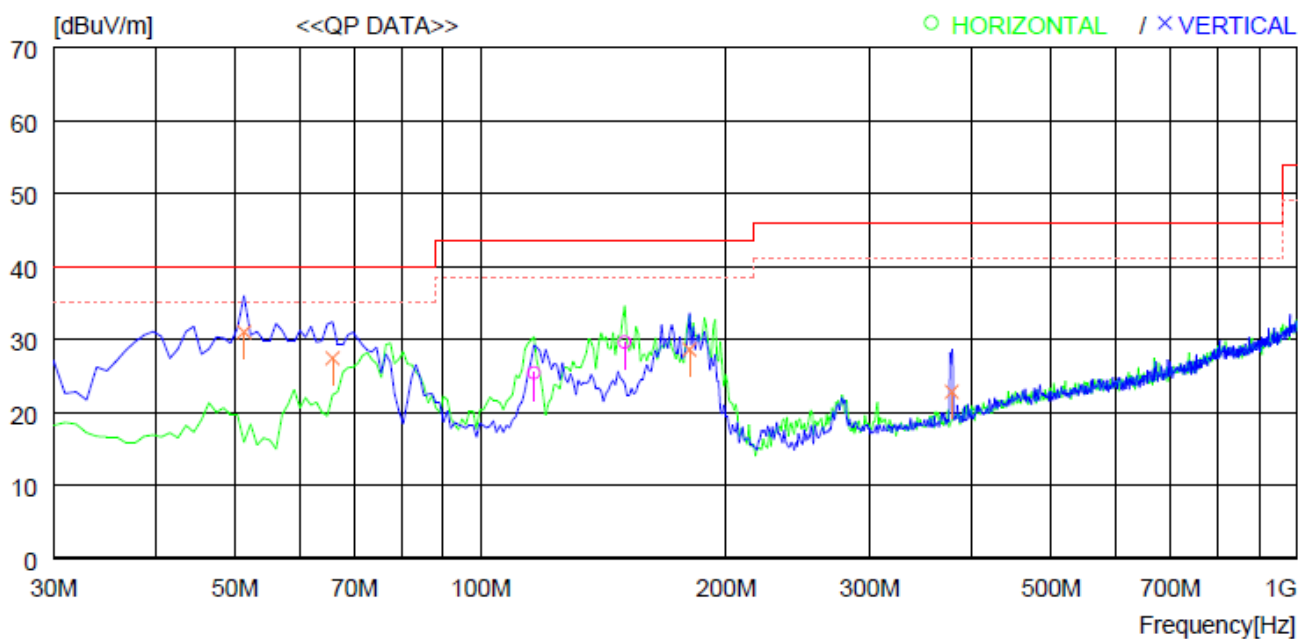
Limits apply to : FCC CFR 47, PART 15, SUBPART C, SECTION 15.247

Result : PASSED

EUT : Network Webcam

Detector : CISPR Quasi-Peak (6 dB Bandwidth: 120 kHz)

-. Antenna 1, Antenna 2 and Multiple transmit tested, but the worst data were recorded.

LIMIT : FCC Part15 Subpart.B Class B (3m)
MARGIN: 5 dB


No.	FREQ	READING	ANT	LOSS	GAIN	RESULT	LIMIT	MARGIN	ANTENNA	TABLE
	[MHz]	[dBuV]	FACTOR	[dB]	[dB]	[dBuV/m]	[dBuV/m]	[dB]	[cm]	[DEG]
----- Horizontal -----										
1	116.330	38.1	18.2	2.1	33.0	25.4	43.5	18.1	400	0
2	150.280	41.7	18.6	2.3	33.0	29.6	43.5	13.9	200	0
----- Vertical -----										
3	51.340	50.1	12.8	1.2	33.1	31.0	40.0	9.0	100	173
4	65.890	46.2	12.8	1.5	33.1	27.4	40.0	12.6	200	359
5	180.350	42.3	16.8	2.5	33.0	28.6	43.5	14.9	100	0
6	378.230	31.2	20.8	3.8	33.0	22.8	46.0	23.2	400	40

11.5 Test data for Below 30 MHz

- . Resolution bandwidth : 200 Hz (from 9 kHz to 0.15 MHz), 9 kHz (from 0.15 MHz to 30 MHz)
- . Frequency range : 9 kHz ~ 30 MHz
- . Measurement distance : 3 m
- . Operating mode : Transmitting mode

Frequency (MHz)	Reading (dB μ V)	Ant. Pol. (H/V)	Ant. Height (m)	Angle (°)	Ant. Factor (dB/m)	Cable Loss	Emission Level(dB μ V/m)	Limits (dB μ V/m)	Margin (dB)
Emission from the EUT more than 20 dB below the limit in each frequency range.									

11.6 Test data for above 1 GHz

- . Resolution bandwidth : 1 MHz and Peak Detector for Peak Mode
1 MHz and RMS Detector for Average Mode
- . Video bandwidth : 3 MHz for Peak and Average Mode
- . Frequency range : 1 GHz ~ 26.5 GHz
- . Measurement distance : 3 m
- . Operating mode : Transmitting mode

Frequency (MHz)	Reading (dB μ V)	Ant. Pol. (H/V)	Ant. Height (m)	Angle (°)	Ant. Factor (dB/m)	Cable Loss	Emission Level(dB μ V/m)	Limits (dB μ V/m)	Margin (dB)
Emission from the EUT more than 20 dB below the limit in each frequency range.									

12. CONDUCTED EMISSION TEST

12.1 Operating environment

Temperature : 24 °C
Relative humidity : 52 % R.H.

12.2 Test set-up

The EUT was placed on a wooden table, 0.8 m height above the floor. Power was fed to the EUT through a 50 Ω / 50 μ H + 5 Ω Artificial Mains Network (AMN). The ground plane was electrically bonded to the reference ground system and all power lines were filtered from ambient.

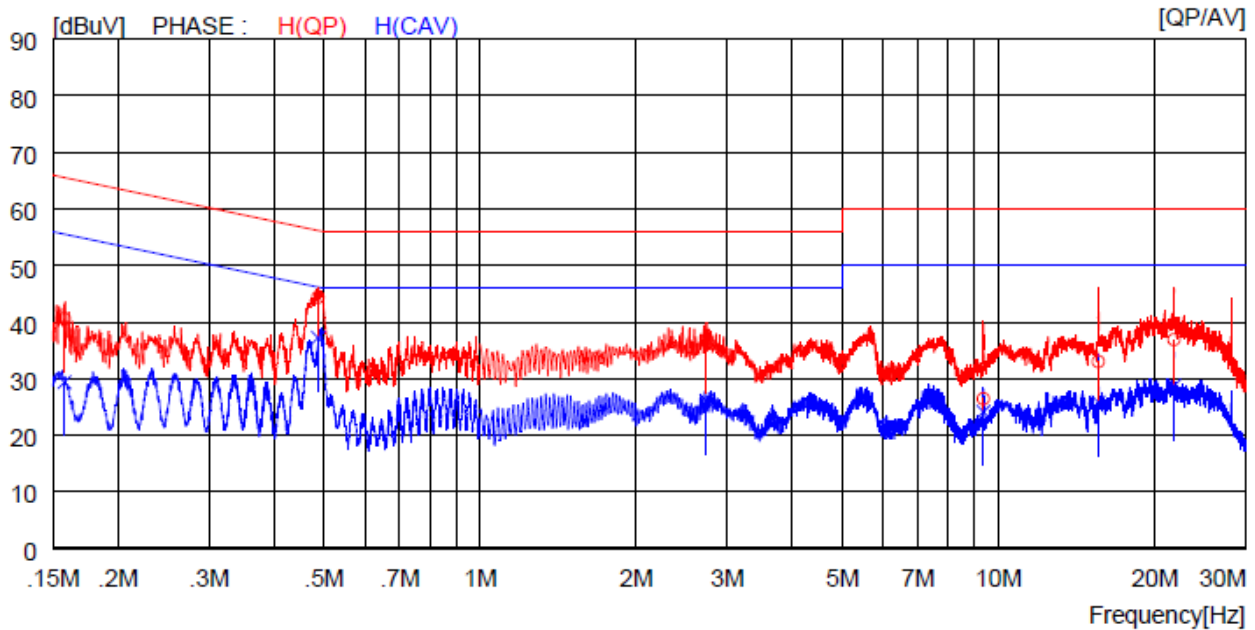
12.3 Test Date

September 26, 2022 ~ October 21, 2022

12.4 Test data for WLAN 2.4 GHz

- Resolution bandwidth : 9 kHz
- Frequency range : 0.15 MHz ~ 30 MHz
- Tested Line : HOT LINE
- Antenna 1, Antenna 2 and Multiple transmit tested, but the worst data were recorded.

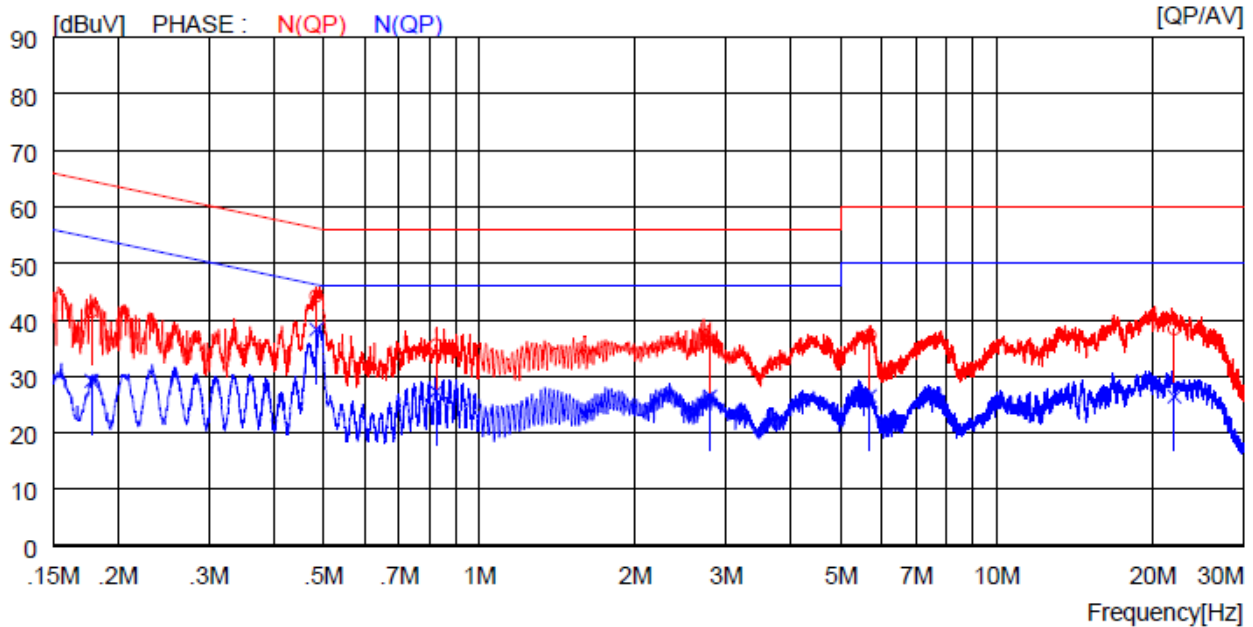
LIMIT : EN.KN.FCC.VCCI_CISPR Pub.32 Class B, Quasi-Peak Limits (Mains Ports)
EN.KN.FCC.VCCI_CISPR Pub.32 Class B, Average Limits (Mains Ports)



NO	FREQ [MHz]	READING		C.FACTOR [dB]	RESULT		LIMIT		MARGIN		PHASE
		QP [dBuV]	AV [dBuV]		QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	
1	0.15800	30.6	----	10.0	40.6	----	65.6	----	25.0	----	H (QP)
2	0.48700	34.4	----	10.0	44.4	----	56.2	----	11.8	----	H (QP)
3	2.73600	26.9	----	10.1	37.0	----	56.0	----	19.0	----	H (QP)
4	9.36000	16.2	----	10.2	26.4	----	60.0	----	33.6	----	H (QP)
5	15.60000	22.6	----	10.4	33.0	----	60.0	----	27.0	----	H (QP)
6	21.83000	26.4	----	10.5	36.9	----	60.0	----	23.1	----	H (QP)
7	0.15800	----	19.4	10.0	----	29.4	----	55.6	----	26.2	H (CAV)
8	0.48700	----	27.2	10.0	----	37.2	----	46.2	----	9.0	H (CAV)
9	2.73600	----	16.0	10.1	----	26.1	----	46.0	----	19.9	H (CAV)
10	9.36000	----	13.9	10.2	----	24.1	----	50.0	----	25.9	H (CAV)
11	15.60000	----	15.4	10.4	----	25.8	----	50.0	----	24.2	H (CAV)
12	21.83000	----	18.2	10.5	----	28.7	----	50.0	----	21.3	H (CAV)

-. Tested Line : NEUTRAL LINE

LIMIT : EN.KN.FCC.VCCI_CISPR Pub.32 Class B, Quasi-Peak Limits (Mains Ports)
EN.KN.FCC.VCCI_CISPR Pub.32 Class B, Average Limits (Mains Ports)



NO	FREQ [MHz]	READING		C. FACTOR [dB]	RESULT		LIMIT		MARGIN		PHASE
		QP [dBuV]	AV [dBuV]		QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	
1	0.17800	31.5	----	10.0	41.5	----	64.6	----	23.1	----	N (QP)
2	0.48400	34.2	----	10.0	44.2	----	56.3	----	12.1	----	N (QP)
3	0.82500	25.5	----	10.0	35.5	----	56.0	----	20.5	----	N (QP)
4	2.79200	26.4	----	10.1	36.5	----	56.0	----	19.5	----	N (QP)
5	5.68500	27.1	----	10.2	37.3	----	60.0	----	22.7	----	N (QP)
6	22.05000	27.9	----	10.5	38.4	----	60.0	----	21.6	----	N (QP)
7	0.17800	----	19.2	10.0	----	29.2	----	54.6	----	25.4	N (CAV)
8	0.48400	----	28.3	10.0	----	38.3	----	46.3	----	8.0	N (CAV)
9	0.82500	----	17.3	10.0	----	27.3	----	46.0	----	18.7	N (CAV)
10	2.79200	----	16.3	10.1	----	26.4	----	46.0	----	19.6	N (CAV)
11	5.68500	----	16.3	10.2	----	26.5	----	50.0	----	23.5	N (CAV)
12	22.05000	----	15.9	10.5	----	26.4	----	50.0	----	23.6	N (CAV)

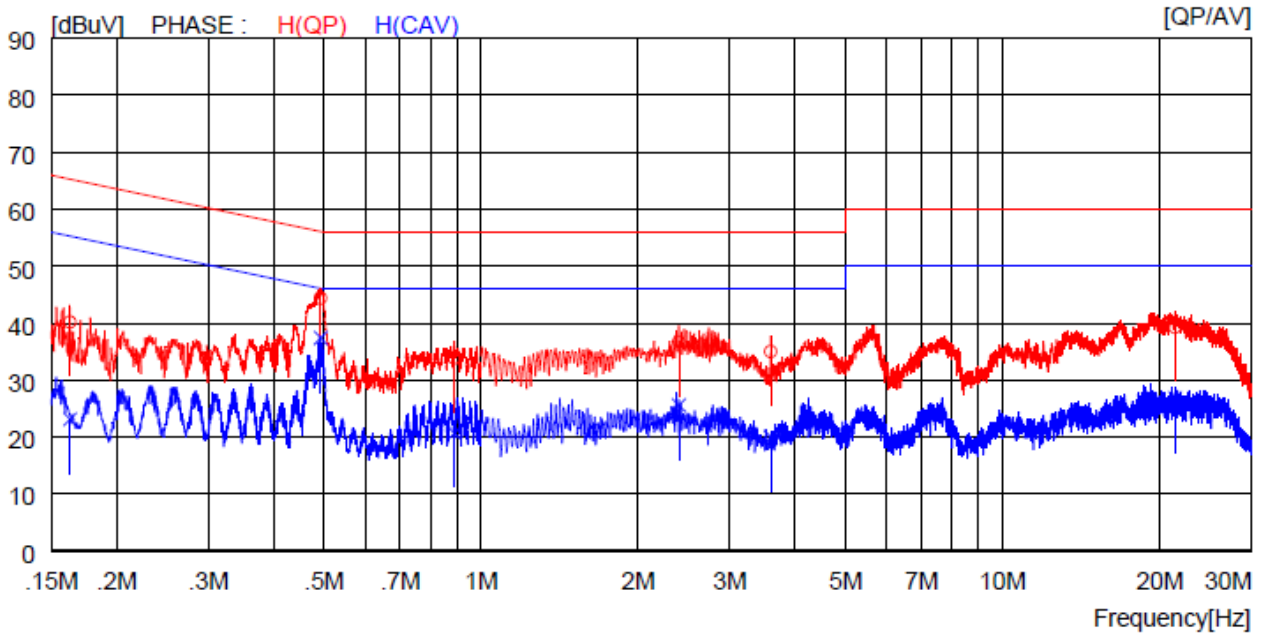
Remark: Margin (dB) = Limit – Level (Result)

The emission level in above table is included the transducer factor that means insertion loss (LISN), cable loss and attenuator.

12.5 Test data for Intermodulation Mode(WLAN 2.4 GHz + Bluetooth)

- Resolution bandwidth : 9 kHz
- Frequency range : 0.15 MHz ~ 30 MHz
- Tested Line : HOT LINE

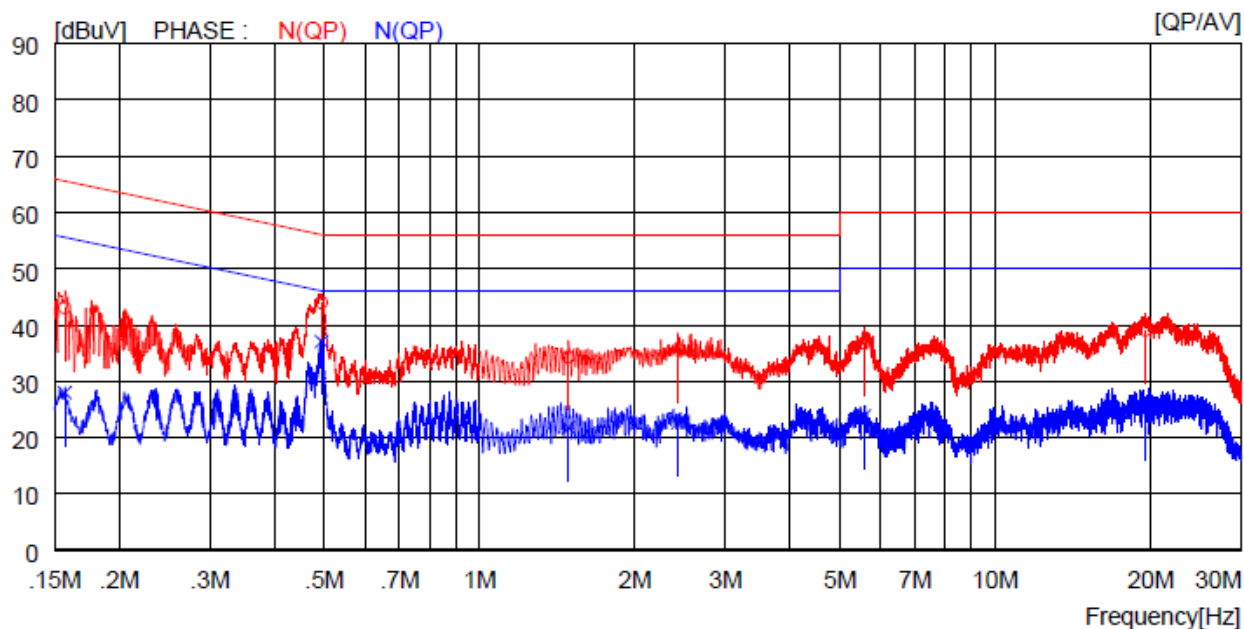
LIMIT : EN.KN.FCC.VCCI_CISPR Pub.32 Class B, Quasi-Peak Limits (Mains Ports)
EN.KN.FCC.VCCI_CISPR Pub.32 Class B, Average Limits (Mains Ports)



NO	FREQ [MHz]	READING		C. FACTOR [dB]	RESULT		LIMIT		MARGIN		PHASE
		QP [dBuV]	AV [dBuV]		QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	
1	0.16300	30.2	----	10.0	40.2	----	65.3	----	25.1	----	H(QP)
2	0.49300	34.4	----	10.0	44.4	----	56.1	----	11.7	----	H(QP)
3	0.89000	23.9	----	10.0	33.9	----	56.0	----	22.1	----	H(QP)
4	2.39600	26.6	----	10.1	36.7	----	56.0	----	19.3	----	H(QP)
5	3.59600	24.9	----	10.1	35.0	----	56.0	----	21.0	----	H(QP)
6	21.43000	28.8	----	10.5	39.3	----	60.0	----	20.7	----	H(QP)
7	0.16300	----	13.1	10.0	----	23.1	----	55.3	----	32.2	H(CAV)
8	0.49300	----	27.4	10.0	----	37.4	----	46.1	----	8.7	H(CAV)
9	0.89000	----	10.7	10.0	----	20.7	----	46.0	----	25.3	H(CAV)
10	2.39600	----	15.5	10.1	----	25.6	----	46.0	----	20.4	H(CAV)
11	3.59600	----	9.9	10.1	----	20.0	----	46.0	----	26.0	H(CAV)
12	21.43000	----	16.3	10.5	----	26.8	----	50.0	----	23.2	H(CAV)

-. Tested Line : NEUTRAL LINE

LIMIT : EN.KN.FCC.VCCI_CISPR Pub.32 Class B, Quasi-Peak Limits (Mains Ports)
EN.KN.FCC.VCCI_CISPR Pub.32 Class B, Average Limits (Mains Ports)



NO	FREQ [MHz]	READING		C. FACTOR [dB]	RESULT		LIMIT		MARGIN		PHASE
		QP [dBuV]	AV [dBuV]		QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	
1	0.15700	33.1	----	10.0	43.1	----	65.6	----	22.5	----	N (QP)
2	0.49400	34.0	----	10.0	44.0	----	56.1	----	12.1	----	N (QP)
3	1.48800	24.2	----	10.1	34.3	----	56.0	----	21.7	----	N (QP)
4	2.42400	25.6	----	10.1	35.7	----	56.0	----	20.3	----	N (QP)
5	5.57500	26.6	----	10.2	36.8	----	60.0	----	23.2	----	N (QP)
6	19.54000	28.6	----	10.5	39.1	----	60.0	----	20.9	----	N (QP)
7	0.15700	----	18.0	10.0	----	28.0	----	55.6	----	27.6	N (CAV)
8	0.49400	----	27.1	10.0	----	37.1	----	46.1	----	9.0	N (CAV)
9	1.48800	----	11.7	10.1	----	21.8	----	46.0	----	24.2	N (CAV)
10	2.42400	----	12.5	10.1	----	22.6	----	46.0	----	23.4	N (CAV)
11	5.57500	----	13.6	10.2	----	23.8	----	50.0	----	26.2	N (CAV)
12	19.54000	----	14.9	10.5	----	25.4	----	50.0	----	24.6	N (CAV)

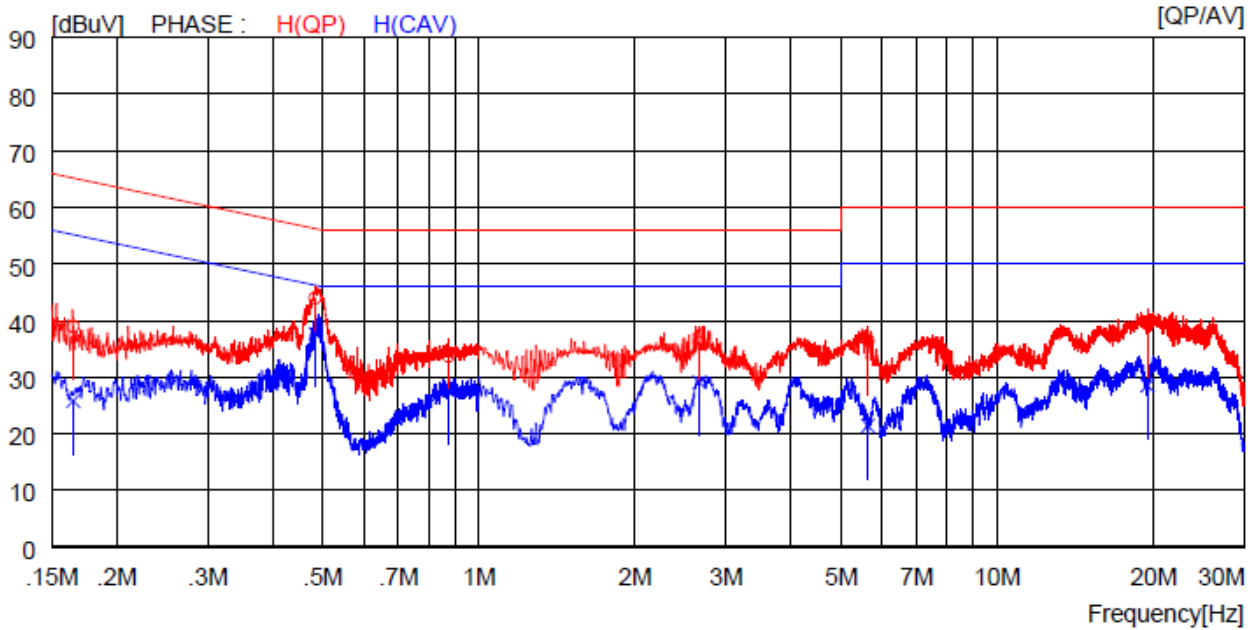
Remark: Margin (dB) = Limit – Level (Result)

The emission level in above table is included the transducer factor that means insertion loss (LISN), cable loss and attenuator.

12.6 Test data for Intermodulation Mode(WLAN 2.4 GHz + WLAN 5 GHz)

- Resolution bandwidth : 9 kHz
- Frequency range : 0.15 MHz ~ 30 MHz
- Tested Line : HOT LINE

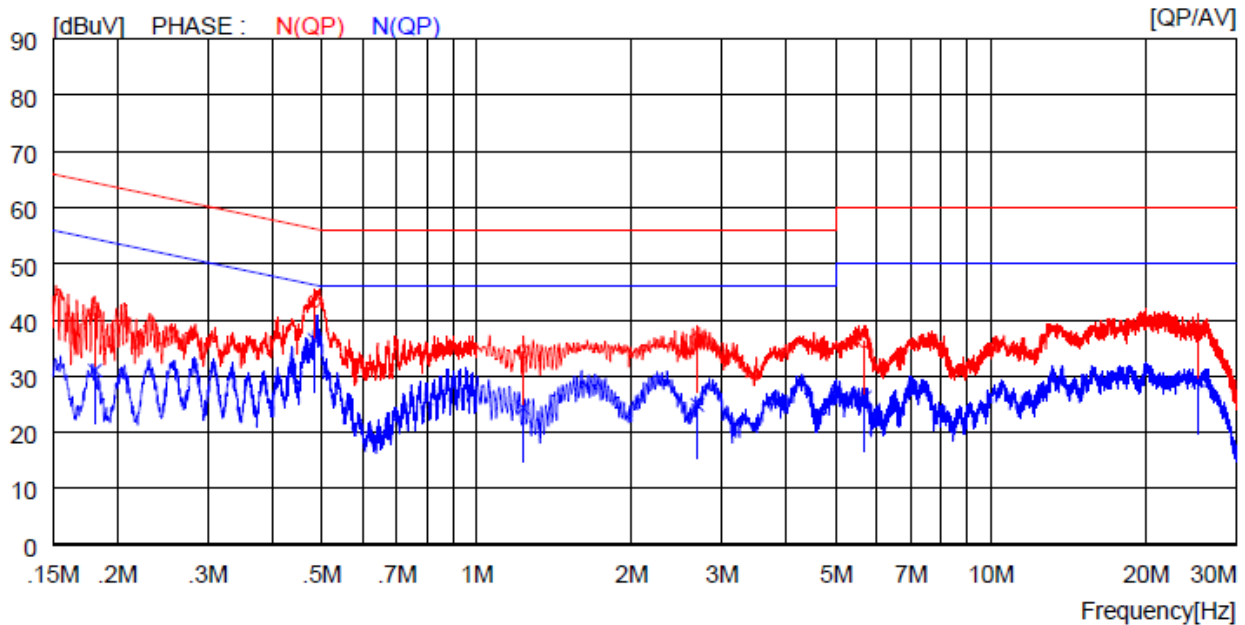
LIMIT : EN.KN.FCC.VCCI_CISPR Pub.32 Class B, Quasi-Peak Limits (Mains Ports)
EN.KN.FCC.VCCI_CISPR Pub.32 Class B, Average Limits (Mains Ports)



NO	FREQ [MHz]	READING		C.FACTOR [dB]	RESULT		LIMIT		MARGIN		PHASE
		QP [dBuV]	AV [dBuV]		QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	
1	0.16500	29.0	----	10.0	39.0	----	65.2	----	26.2	----	H (QP)
2	0.48400	34.0	----	10.0	44.0	----	56.3	----	12.3	----	H (QP)
3	0.87500	23.7	----	10.0	33.7	----	56.0	----	22.3	----	H (QP)
4	2.66400	26.0	----	10.1	36.1	----	56.0	----	19.9	----	H (QP)
5	5.63500	26.2	----	10.2	36.4	----	60.0	----	23.6	----	H (QP)
6	19.49000	28.9	----	10.5	39.4	----	60.0	----	20.6	----	H (QP)
7	0.16500	----	15.8	10.0	----	25.8	----	55.2	----	29.4	H (CAV)
8	0.48400	----	27.7	10.0	----	37.7	----	46.3	----	8.6	H (CAV)
9	0.87500	----	17.6	10.0	----	27.6	----	46.0	----	18.4	H (CAV)
10	2.66400	----	19.0	10.1	----	29.1	----	46.0	----	16.9	H (CAV)
11	5.63500	----	11.2	10.2	----	21.4	----	50.0	----	28.6	H (CAV)
12	19.49000	----	18.0	10.5	----	28.5	----	50.0	----	21.5	H (CAV)

-. Tested Line : NEUTRAL LINE

LIMIT : EN.KN.FCC.VCCI_CISPR Pub.32 Class B, Quasi-Peak Limits (Mains Ports)
EN.KN.FCC.VCCI_CISPR Pub.32 Class B, Average Limits (Mains Ports)



NO	FREQ [MHz]	READING		C. FACTOR [dB]	RESULT		LIMIT		MARGIN		PHASE
		QP [dBuV]	AV [dBuV]		QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	
1	0.18100	31.2	----	10.0	41.2	----	64.4	----	23.2	----	N (QP)
2	0.48400	33.3	----	10.0	43.3	----	56.3	----	13.0	----	N (QP)
3	1.23200	24.3	----	10.1	34.4	----	56.0	----	21.6	----	N (QP)
4	2.68400	26.4	----	10.1	36.5	----	56.0	----	19.5	----	N (QP)
5	5.68000	26.0	----	10.2	36.2	----	60.0	----	23.8	----	N (QP)
6	25.29000	27.7	----	10.6	38.3	----	60.0	----	21.7	----	N (QP)
7	0.18100	----	21.0	10.0	----	31.0	----	54.4	----	23.4	N (CAV)
8	0.48400	----	26.5	10.0	----	36.5	----	46.3	----	9.8	N (CAV)
9	1.23200	----	14.2	10.1	----	24.3	----	46.0	----	21.7	N (CAV)
10	2.68400	----	14.8	10.1	----	24.9	----	46.0	----	21.1	N (CAV)
11	5.68000	----	16.0	10.2	----	26.2	----	50.0	----	23.8	N (CAV)
12	25.29000	----	18.6	10.6	----	29.2	----	50.0	----	20.8	N (CAV)

Remark: Margin (dB) = Limit – Level (Result)

The emission level in above table is included the transducer factor that means insertion loss (LISN), cable loss and attenuator.

13. LIST OF TEST EQUIPMENT

Model Number	Manufacturer	Description	Serial Number	Last Cal.(Interval)
FSV30	Rohde & Schwarz	Signal Analyzer	101372	Jul. 14, 2022 (1Y)
ESU	Rohde & Schwarz	EMI Test Receiver	100261	Mar. 07, 2022 (1Y)
310N	Sonoma Instrument	Pre-Amplifier	392756	Oct. 13, 2022 (1Y)
SCU18	Rohde & Schwarz	Signal Conditioning unit	102266	Jul. 12, 2022 (1Y)
SCU40A	Rohde & Schwarz	Signal Conditioning unit	100436	Jan. 18, 2022 (1Y)
WT-A3882-R10	Microwave	Cavity Band Rejection Filter	WT22040502-1	Jun. 21, 2022 (1Y)
DT2000-2t	Innco System	Turn Table	N/A	N/A
MA-4640-XPET	Innco System	Antenna Master	MA4640/652/43100318/P	N/A
CO3000	Innco System	Controller	1026/40960617/P	N/A
FMZB 1513	Schwarzbeck	Loop Antenna	1513-235	Mar. 24, 2022 (2Y)
HLP-2008	TDK	Hybrid Antenna	131316	Mar. 07, 2022 (2Y)
AH-118	Com-Power	Horn Antenna	10050061	Oct. 21, 2022 (1Y)
BBHA9170	Schwarzbeck	Horn Antenna	BBHA9170178	Jan. 06, 2022(1Y)
ESCI	Rohde & Schwarz	EMI Test RECEIVER	101012	Oct. 12, 2022 (1Y)
NSLK8128	Schwarzbeck	AMN	8218-216	Mar. 14, 2022 (1Y)
ESH3-Z2	Rohde & Schwarz	PULSE LIMITER	100655	Mar. 14, 2022 (1Y)