

RADIO PERFORMANCE TEST REPORT

Test Report No. : OT-25N-RWD-047
Reception No. : 2510003461
Applicant : Samsung Electronics Co Ltd
Address : 19 Chapin Rd., Building D, Pine Brook, New Jersey, 07058, United States
Manufacturer : Samsung Electronics Co Ltd
Address : 129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do 16677, Korea
Type of Equipment : Wi-Fi/BT Transceiver
FCC ID. : A3LWCH731R
Model Name : WCH731R
Multiple Model Name : N/A
Serial number : N/A
Total page of Report : 75 pages (including this page)
Date of Incoming : October 15, 2025
Date of issue : November 27, 2025

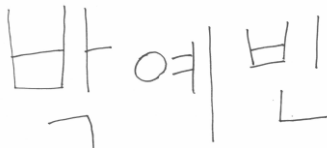
SUMMARY

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 test report is not associated with the accreditation granted by the Korean Laboratory Accreditation Scheme (KOLAS).





Tested by
 Ye-Bhin, Park / Engineer
 ONETECH Corp.

Reviewed by
 Tae-Ho, Kim / Chief Engineer
 ONETECH Corp.

Approved by
 Jae-Ho, Lee / Director
 ONETECH Corp.

CONTENTS

	Page
1. VERIFICATION OF COMPLIANCE	6
2. TEST SUMMARY.....	7
2.1 TEST ITEMS AND RESULTS	7
2.2 ADDITIONS, DEVIATIONS, EXCLUSIONS FROM STANDARDS.....	7
2.3 RELATED SUBMITTAL(S) / GRANT(S)	7
2.4 PURPOSE OF THE TEST	7
2.5 TEST METHODOLOGY.....	7
2.6 TEST FACILITY.....	7
3. GENERAL INFORMATION.....	8
3.1 PRODUCT DESCRIPTION.....	8
3.2 ALTERNATIVE TYPE(S)/MODEL(S); ALSO COVERED BY THIS TEST REPORT.....	13
4. EUT MODIFICATIONS.....	13
5. SYSTEM TEST CONFIGURATION	14
5.1 JUSTIFICATION.....	14
5.2 PERIPHERAL EQUIPMENT	14
5.3 MODE OF OPERATION DURING THE TEST	15
5.4 CONFIGURATION OF TEST SYSTEM.....	22
5.5 ANTENNA REQUIREMENT	22
5.6 ANTENNA CONFIGURATIONS	22
6. MEASUREMENT UNCERTAINTY	24
7. PRELIMINARY TEST	24
7.1 AC POWER LINE CONDUCTED EMISSIONS TESTS.....	24
7.2 GENERAL RADIATED EMISSIONS TESTS	24
8. MINIMUM 6 dB BANDWIDTH.....	25
8.1 OPERATING ENVIRONMENT	25
8.2 TEST SET-UP	25
8.3 TEST DATE	25
8.4 TEST DATA FOR 802.11B WLAN MODE (SISO)	26
8.4.1 Test data for Antenna 0	26
8.4.2 Test data for Antenna 1	26
8.5 TEST DATA FOR 802.11G WLAN MODE (SISO).....	27
8.5.1 Test data for Antenna 0	27

8.5.2 Test data for Antenna 1	27
8.6 TEST DATA FOR 802.11N_HT20 WLAN MODE (SISO)	28
8.6.1 Test data for Antenna 0	28
8.6.2 Test data for Antenna 1	28
8.7 TEST DATA FOR 802.11N_HT20 WLAN MODE (MIMO)	29
8.7.1 Test data for Antenna 0	29
8.7.2 Test data for Antenna 1	29
9. MAXIMUM CONDUCTED (AVERAGE) OUTPUT POWER	30
9.1 OPERATING ENVIRONMENT	30
9.2 TEST SET-UP	30
9.3 TEST DATE	30
9.4 TEST DATA FOR 802.11B WLAN MODE (SISO)	31
9.4.1 Test data for Antenna 0	31
9.4.2 Test data for Antenna 1	31
9.5 TEST DATA FOR 802.11G WLAN MODE (SISO)	32
9.5.1 Test data for Antenna 0	32
9.5.2 Test data for Antenna 1	32
9.6 TEST DATA FOR 802.11N_HT20 WLAN MODE (SISO)	33
9.6.1 Test data for Antenna 0	33
9.6.2 Test data for Antenna 1	33
9.7 TEST DATA FOR 802.11N_HT20 WLAN MODE (MIMO)	34
9.7.1 Test data for Antenna 0	34
9.7.2 Test data for Antenna 1	34
9.7.3 Test data for Multiple Transmit	34
10. 100 kHz BANDWIDTH OUTSIDE THE FREQUENCY BAND	35
10.1 OPERATING ENVIRONMENT	35
10.2 TEST SET-UP FOR CONDUCTED MEASUREMENT	35
10.3 TEST SET-UP FOR RADIATED MEASUREMENT	35
10.4 TEST DATE	35
10.5 TEST DATA	35
10.6 TEST DATA FOR RADIATED EMISSION	36
10.6.1 Radiated Emission which fall in the Restricted Band	36
10.6.2 Spurious & Harmonic Radiated Emission	44
11. PEAK POWER SPECTRUL DENSITY	58
11.1 OPERATING ENVIRONMENT	58
11.2 TEST SET-UP	58

11.3 TEST DATE	58
11.4 TEST DATA FOR 802.11B WLAN MODE (SISO)	59
11.4.1 Test data for Antenna 0	59
11.4.2 Test data for Antenna 1	59
11.5 TEST DATA FOR 802.11G WLAN MODE (SISO)	60
11.5.1 Test data for Antenna 0	60
11.5.2 Test data for Antenna 1	60
11.6 TEST DATA FOR 802.11N_HT20 WLAN MODE (SISO)	61
11.6.1 Test data for Antenna 0	61
11.6.2 Test data for Antenna 1	61
11.7 Test data for 802.11n_HT20 WLAN Mode (MIMO)	62
11.7.1 Test data for Antenna 0	62
11.7.2 Test data for Antenna 1	62
11.7.3 Test data for Multiple Transmit	62
12. RADIATED EMISSION TEST	63
12.1 OPERATING ENVIRONMENT	63
12.2 TEST SET-UP	63
12.3 TEST DATE	63
12.4 TEST DATA FOR 30 MHz ~ 1 000 MHz	64
12.4.1 Test data for WLAN 2.4 GHz	64
12.4.2 Test data for Intermodulation Mode(Bluetooth LE+WLAN 2.4 GHz)	65
12.4.3 Test data for Intermodulation Mode(Bluetooth+WLAN 2.4 GHz)	66
12.5 TEST DATA FOR BELOW 30 MHz	67
12.6 TEST DATA FOR ABOVE 1 GHz	67
13. CONDUCTED EMISSION TEST	68
13.1 OPERATING ENVIRONMENT	68
13.2 TEST SET-UP	68
13.3 TEST DATE	68
13.4 TEST DATA	69
13.4.1 Test data for WLAN 2.4 GHz	69
13.4.2 Test data for Intermodulation Mode(Bluetooth LE + WLAN 2.4 GHz)	71
13.4.3 Test data for Intermodulation Mode(Bluetooth + WLAN 2.4 GHz)	73
14. LIST OF TEST EQUIPMENT	75

※ Please refer to the Annex section for All test plots

Revision History

Rev. No.	Issue Report No.	Issued Date	Revisions	Section Affected
0	OT-25N-RWD-047	November 27, 2025	Initial Release	All

1. VERIFICATION OF COMPLIANCE

Applicant : Samsung Electronics Co Ltd
 Address : 19 Chapin Rd., Building D, Pine Brook, New Jersey, 07058, United States
 Contact Person : Minhyung Cho / Staff Engineer
 Telephone No. : +82-10-8798-3916
 FCC ID : A3LWCH731R
 Model Name : WCH731R
 Brand Name : 
 Serial Number : N/A
 Date : November 27, 2025

EQUIPMENT CLASS	DTS – DIGITAL TRNSMISSION SYSTEM
E.U.T. DESCRIPTION	Modular Transmitter, Wi-Fi/BT Transceiver
THIS REPORT CONCERNS	Original Grant
MEASUREMENT PROCEDURES	ANSI C63.10: 2020
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: 2020. 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

-. Lab Accreditation:

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

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

FCC (Federal Communications Commission) - Accreditation No. KR0013

RRA (Radio Research Agency) – Designation No. KR0013

3. GENERAL INFORMATION

3.1 Product Description

The Samsung Electronics Co Ltd, Model WCH731R (referred to as the EUT in this report) is a Wi-Fi/BT Transceiver. The product specification described herein was obtained from product data sheet or user's manual.

DEVICE TYPE	Wi-Fi/BT Transceiver		
Temperature Range	-10 °C ~ 50 °C		
OPERATING FREQUENCY	Bluetooth LE	2 402 MHz ~ 2 480 MHz	
	Bluetooth	2 402 MHz ~ 2 480 MHz	
	WLAN 2.4 GHz	2 412 MHz ~ 2 472 MHz (802.11b/g/n(HT20))	
	WLAN	5 180 MHz ~ 5 240 MHz (802.11a/n(HT20)/ac(VHT20))	
	5 150 MHz ~	5 190 MHz ~ 5 230 MHz (802.11n(HT40)/ac(VHT40))	
	5 250 MHz Band	5 210 MHz (802.11ac(VHT80))	
	WLAN	5 260 MHz ~ 5 320 MHz (802.11a/n(HT20)/ac(VHT20))	
	5 250 MHz ~	5 270 MHz ~ 5 310 MHz (802.11n(HT40)/ac(VHT40))	
	5 350 MHz Band	5 290 MHz (802.11ac(VHT80))	
	WLAN	5 500 MHz ~ 5 720 MHz (802.11a/n(HT20)/ac(VHT20))	
	5 470 MHz ~	5 510 MHz ~ 5 710 MHz (802.11n(HT40)/ac(VHT40))	
	5 725 MHz Band	5 530 MHz ~ 5 690 MHz (802.11ac(VHT80))	
	WLAN	5 745 MHz ~ 5 825 MHz (802.11a/n(HT20)/ac(VHT20))	
	5 725 MHz ~	5 755 MHz ~ 5 795 MHz (802.11n(HT40)/ac(VHT40))	
	5 850 MHz Band	5 775 MHz (802.11ac(VHT80))	
MODULATION TYPE	Bluetooth LE	GFSK for 1 Mbps / 2 Mbps	
	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): 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 LE	1 Mbps	12.05 dBm
		2 Mbps	12.15 dBm
	Bluetooth	1 Mbps	12.31 dBm
		2 Mbps	11.41 dBm
		3 Mbps	11.91 dBm

RF OUTPUT POWER	WLAN 2.4 GHz	SISO Antenna 0	17.53 dBm(802.11b) 16.59 dBm(802.11g) 16.46 dBm(802.11n_HT20)
		SISO Antenna 1	17.42 dBm(802.11b) 16.11 dBm(802.11g) 16.72 dBm(802.11n_HT20)
		MIMO Antenna 0	16.04 dBm(802.11n_HT20)
		MIMO Antenna 1	16.38 dBm(802.11n_HT20)
		MIMO Multiple Antenna	19.22 dBm(802.11n_HT20)
	WLAN 5 150 MHz ~ 5 250 MHz Band	SISO Antenna 0	16.88 dBm(802.11a) 13.51 dBm(802.11n_HT20) 13.11 dBm(802.11n_HT40) 13.06 dBm(802.11ac_VHT80)
		SISO Antenna 1	16.94 dBm(802.11a) 13.65 dBm(802.11n_HT20) 13.61 dBm(802.11n_HT40) 13.17 dBm(802.11ac_VHT80)
		MIMO Antenna 0	13.26 dBm(802.11n_HT20) 13.09 dBm(802.11n_HT40) 13.14 dBm(802.11ac_VHT80)
		MIMO Antenna 1	13.77 dBm(802.11n_HT20) 15.60 dBm(802.11n_HT40) 13.04 dBm(802.11ac_VHT80)
		MIMO Multiple Antenna	16.53 dBm(802.11n_HT20) 16.37 dBm(802.11n_HT40) 16.10 dBm(802.11ac_VHT80)

RF OUTPUT POWER	WLAN 5 250 MHz ~ 5 350 MHz Band	SISO Antenna 0	16.90 dBm(802.11a) 15.44 dBm(802.11n_HT20) 15.53 dBm(802.11n_HT40) 14.74 dBm(802.11ac_VHT80)
		SISO Antenna 1	16.76 dBm(802.11a) 15.70 dBm(802.11n_HT20) 15.74 dBm(802.11n_HT40) 14.51 dBm(802.11ac_VHT80)
		MIMO Antenna 0	15.50 dBm(802.11n_HT20) 15.25 dBm(802.11n_HT40) 14.57 dBm(802.11ac_VHT80)
		MIMO Antenna 1	15.68 dBm(802.11n_HT20) 15.60 dBm(802.11n_HT40) 14.43 dBm(802.11ac_VHT80)
		MIMO Multiple Antenna	18.60 dBm(802.11n_HT20) 18.44 dBm(802.11n_HT40) 17.51 dBm(802.11ac_VHT80)

RF OUTPUT POWER	WLAN 5 470 MHz ~ 5 725 MHz Band	SISO Antenna 0	16.67 dBm(802.11a) 15.69 dBm(802.11n_HT20) 15.33 dBm(802.11n_HT40) 14.48 dBm(802.11ac_VHT80)
		SISO Antenna 0 Straddle	13.14 dBm(802.11a) 12.06 dBm(802.11n_HT20) 12.73 dBm(802.11n_HT40) 12.43 dBm(802.11ac_VHT80)
		SISO Antenna 1	16.89 dBm(802.11a) 15.88 dBm(802.11n_HT20) 15.77 dBm(802.11n_HT40) 14.27 dBm(802.11ac_VHT80)
		SISO Antenna 1_Straddle	14.55 dBm(802.11a) 13.52 dBm(802.11n_HT20) 14.28 dBm(802.11n_HT40) 12.40 dBm(802.11ac_VHT80)
		MIMO Antenna 0	15.63 dBm(802.11n_HT20) 15.28 dBm(802.11n_HT40) 13.80 dBm(802.11ac_VHT80)
		MIMO Antenna 0 Straddle	10.35 dBm(802.11n_HT20) 11.16 dBm(802.11n_HT40) 11.04 dBm(802.11ac_VHT80)
		MIMO Antenna 1	14.61 dBm(802.11n_HT20) 15.67 dBm(802.11n_HT40) 14.24 dBm(802.11ac_VHT80)
		MIMO Antenna 1 Straddle	11.66 dBm(802.11n_HT20) 12.76 dBm(802.11n_HT40) 10.91 dBm(802.11ac_VHT80)
		MIMO Multiple Antenna	18.16 dBm(802.11n_HT20) 18.49 dBm(802.11n_HT40) 18.44 dBm(802.11ac_VHT80)
		MIMO Multiple Antenna _Straddle	14.06 dBm(802.11n_HT20) 15.04 dBm(802.11n_HT40) 13.99 dBm(802.11ac_VHT80)

RF OUTPUT POWER	WLAN 5 725 MHz ~ 5 850 MHz Band	SISO Antenna 0	16.65 dBm(802.11a) 14.91 dBm(802.11n_HT20) 15.13 dBm(802.11n_HT40) 13.55 dBm(802.11ac_VHT80)
		SISO Antenna 0 Straddle	5.84 dBm(802.11a) 5.29 dBm(802.11n_HT20) 0.64 dBm(802.11n_HT40) -3.79 dBm(802.11ac_VHT80)
		SISO Antenna 1	16.84 dBm(802.11a) 15.77 dBm(802.11n_HT20) 15.41 dBm(802.11n_HT40) 14.33 dBm(802.11ac_VHT80)
		SISO Antenna 1_Straddle	7.34 dBm(802.11a) 6.83 dBm(802.11n_HT20) 2.20 dBm(802.11n_HT40) -4.63 dBm(802.11ac_VHT80)
		MIMO Antenna 0	15.21 dBm(802.11n_HT20) 15.58 dBm(802.11n_HT40) 13.77 dBm(802.11ac_VHT80)
		MIMO Antenna 0 Straddle	3.60 dBm(802.11n_HT20) -0.87 dBm(802.11n_HT40) -5.25 dBm(802.11ac_VHT80)
		MIMO Antenna 1	15.58 dBm(802.11n_HT20) 15.36 dBm(802.11n_HT40) 14.34 dBm(802.11ac_VHT80)
		MIMO Antenna 1 Straddle	4.95 dBm(802.11n_HT20) 0.67 dBm(802.11n_HT40) -5.67 dBm(802.11ac_VHT80)
		MIMO Multiple Antenna	18.41 dBm(802.11n_HT20) 18.48 dBm(802.11n_HT40) 17.07 dBm(802.11ac_VHT80)
		MIMO Multiple Antenna _Straddle	7.34 dBm(802.11n_HT20) 2.98 dBm(802.11n_HT40) -2.44 dBm(802.11ac_VHT80)

ANTENNA TYPE	PCB Antenna		
ANTENNA TRANSMIT TYPE	WLAN 5 GHz: 2T2R WLAN 2.4 GHz: 2T2R Bluetooth / Bluetooth LE: 1T1R		
ANTENNA GAIN	Bluetooth LE	0.70 dBi	
	Bluetooth	0.70 dBi	
	WLAN 2.4 GHz	Antenna 0	1.20 dBi
		Antenna 1	1.70 dBi
		Multiple Antenna	4.47 dBi
	5 150 MHz ~ 5 250 MHz Band	Antenna 0	1.90 dBi
		Antenna 1	1.10 dBi
		Multiple Antenna	4.53 dBi
	5 250 MHz ~ 5 350 MHz Band	Antenna 0	1.60 dBi
		Antenna 1	0.30 dBi
		Multiple Antenna	4.01 dBi
	5 470 MHz ~ 5 725 MHz Band	Antenna 0	0.40 dBi
		Antenna 1	-0.40 dBi
		Multiple Antenna	3.03 dBi
	5 725 MHz ~ 5 850 MHz Band	Antenna 0	-0.40 dBi
		Antenna 1	-0.10 dBi
		Multiple Antenna	2.76 dBi
List of each Osc. or crystal Freq.(Freq. >= 1 MHz)		40 MHz	

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

-. None

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	Samsung Electronics Co Ltd	HDWB-26R22-V1.0	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
WCH731R	Samsung Electronics Co Ltd	Wi-Fi/BT Transceiver (EUT)	
80XH	LENOVO	Notebook PC	EUT
PA-1450-55LR	Liteon	AC Adapter	-

5.3 Mode of operation during the test

For the testing, software used to control the EUT for staying in continuous transmitting mode is programmed.

-. Frequency / Channel Operations

Channel	Frequency
1	2 412
2	2 417
3	2 422
4	2 427
5	2 432
6	2 437
7	2 442
8	2 447
9	2 452
10	2 457
11	2 462
12	2 467
13	2 472

-. Power Level Setting(Dec)

Operating Frequency / Modulation			Power Level Setting(Dec)			
			SISO		MIMO	
			Ant 0	Ant 1	Ant 0	Ant 1
WLAN 2.4 GHz (2 412 MHz ~ 2 472 MHz)	802.11 b	2 412 MHz	71.0	73.0	-	-
		2 437 MHz	72.0	70.0	-	-
		2 462 MHz	72.0	70.0	-	-
		2 467 MHz	64.0	61.0	-	-
		2 472 MHz	52.0	51.0	-	-
	802.11 g	2 412 MHz	74.0	73.0	-	-
		2 437 MHz	74.0	71.0	-	-
		2 462 MHz	72.0	71.0	-	-
		2 467 MHz	62.0	62.0	-	-
		2 472 MHz	52.0	52.0	-	-
	802.11 n(HT20)	2 412 MHz	74.0	75.0	74.0	75.0
		2 437 MHz	74.0	73.0	74.0	73.0
		2 462 MHz	72.0	73.0	72.0	73.0
		2 467 MHz	48.0	48.0	48.0	48.0
		2 472 MHz	36.0	40.0	36.0	36.0

-. Low Channel

Modulation	DATA RATE	OUTPUT POWER[dBm]			
		SISO		MIMO	
		Ant 0	Ant 1	Ant 0	Ant 1
802.11 b	1 Mbps	17.14	17.41	-	-
	2 Mbps	17.07	17.30	-	-
	5.5 Mbps	16.99	17.22	-	-
	11 Mbps	17.00	17.15	-	-
802.11 g	6 Mbps	16.59	15.91	-	-
	9 Mbps	16.46	15.63	-	-
	12 Mbps	16.54	15.59	-	-
	18 Mbps	16.55	15.86	-	-
	24 Mbps	16.53	15.88	-	-
	36 Mbps	16.48	15.46	-	-
	48 Mbps	15.47	14.66	-	-
	54 Mbps	15.54	14.72	-	-
802.11 HT 20	MCS 0 / 8	16.41	16.12	16.07	16.24
	MCS 1 / 9	16.22	16.04	15.91	15.94
	MCS 2 / 10	16.40	16.05	16.00	16.15
	MCS 3 / 11	16.33	16.02	15.92	16.21
	MCS 4 / 12	16.35	16.07	15.88	16.13
	MCS 5 / 13	16.39	16.09	15.81	15.84
	MCS 6 / 14	15.39	15.26	14.80	15.05
	MCS 7 / 15	15.31	15.16	15.03	15.18

- . The worst case data transmission rate for each modulation scheme is determined as 1 Mbps (Ant.0/Ant 1) for IEEE 802.11b, 6 Mbps (Ant.0/Ant.1) for IEEE 802.11g, and MCS 0 / 8 (Ant.0/Ant.1) for HT20.
- . To get a maximum emission levels from the EUT, the EUT was moved throughout the XY, XZ, and YZ planes and the worst case is “YZ” axis.

-. Middle Channel

Modulation	DATA RATE	OUTPUT POWER[dBm]			
		SISO		MIMO	
		Ant 0	Ant 1	Ant 0	Ant 1
802.11 b	1 Mbps	17.47	17.15	-	-
	2 Mbps	17.40	17.10	-	-
	5.5 Mbps	17.25	17.08	-	-
	11 Mbps	17.26	17.11	-	-
802.11 g	6 Mbps	16.42	15.81	-	-
	9 Mbps	16.36	15.73	-	-
	12 Mbps	16.24	15.77	-	-
	18 Mbps	16.37	15.78	-	-
	24 Mbps	16.40	15.69	-	-
	36 Mbps	16.40	15.75	-	-
	48 Mbps	15.41	14.91	-	-
	54 Mbps	15.41	14.91	-	-
802.11 HT 20	MCS 0 / 8	16.33	16.30	16.04	16.38
	MCS 1 / 9	16.24	16.26	15.90	16.26
	MCS 2 / 10	16.08	16.27	15.89	16.23
	MCS 3 / 11	16.26	16.28	15.64	16.20
	MCS 4 / 12	16.24	16.25	15.89	16.23
	MCS 5 / 13	16.31	16.28	15.92	16.34
	MCS 6 / 14	15.21	15.36	14.84	15.23
	MCS 7 / 15	15.20	15.21	14.96	15.31

- . The worst case data transmission rate for each modulation scheme is determined as 1 Mbps (Ant.0/Ant 1) for IEEE 802.11b, 6 Mbps (Ant.0/Ant.1) for IEEE 802.11g, and MCS 0 / 8 (Ant.0/Ant.1) for HT20.
- . To get a maximum emission levels from the EUT, the EUT was moved throughout the XY, XZ, and YZ planes and the worst case is “YZ” axis.

-. High 11 Channel

Modulation	DATA RATE	OUTPUT POWER[dBm]			
		SISO		MIMO	
		Ant 0	Ant 1	Ant 0	Ant 1
802.11 b	1 Mbps	17.53	17.42	-	-
	2 Mbps	17.41	17.27	-	-
	5.5 Mbps	17.23	17.34	-	-
	11 Mbps	17.24	17.33	-	-
802.11 g	6 Mbps	16.20	16.11	-	-
	9 Mbps	16.08	16.08	-	-
	12 Mbps	16.03	16.07	-	-
	18 Mbps	16.15	15.98	-	-
	24 Mbps	16.17	16.10	-	-
	36 Mbps	16.16	16.08	-	-
	48 Mbps	15.24	15.35	-	-
	54 Mbps	15.26	15.44	-	-
802.11 HT 20	MCS 0 / 8	16.46	16.72	15.90	16.43
	MCS 1 / 9	16.03	16.65	15.88	16.40
	MCS 2 / 10	16.15	16.70	15.86	16.21
	MCS 3 / 11	16.23	16.66	15.89	16.26
	MCS 4 / 12	16.24	16.64	15.88	16.23
	MCS 5 / 13	16.30	16.75	16.87	16.33
	MCS 6 / 14	15.18	15.71	14.88	15.45
	MCS 7 / 15	15.10	15.74	15.00	15.54

- . The worst case data transmission rate for each modulation scheme is determined as 1 Mbps (Ant.0/Ant 1) for IEEE 802.11b, 6 Mbps (Ant.0/Ant.1) for IEEE 802.11g, and MCS 0 / 8 (Ant.0/Ant.1) for HT20.
- . To get a maximum emission levels from the EUT, the EUT was moved throughout the XY, XZ, and YZ planes and the worst case is “YZ” axis.

-. High 12 Channel

Modulation	DATA RATE	OUTPUT POWER[dBm]			
		SISO		MIMO	
		Ant 0	Ant 1	Ant 0	Ant 1
802.11 b	1 Mbps	15.42	15.26	-	-
	2 Mbps	15.38	15.18	-	-
	5.5 Mbps	15.36	15.18	-	-
	11 Mbps	15.35	15.02	-	-
802.11 g	6 Mbps	13.53	14.14	-	-
	9 Mbps	13.46	14.08	-	-
	12 Mbps	13.44	14.03	-	-
	18 Mbps	13.44	14.10	-	-
	24 Mbps	13.45	14.05	-	-
	36 Mbps	13.49	13.98	-	-
	48 Mbps	12.81	13.23	-	-
	54 Mbps	12.78	13.16	-	-
802.11 HT 20	MCS 0 / 8	10.16	10.88	10.16	10.60
	MCS 1 / 9	10.02	10.73	10.02	10.16
	MCS 2 / 10	10.07	10.74	10.01	10.54
	MCS 3 / 11	10.12	10.77	10.06	10.46
	MCS 4 / 12	10.09	10.78	10.05	10.38
	MCS 5 / 13	10.14	10.83	10.13	10.58
	MCS 6 / 14	9.20	9.93	9.06	9.53
	MCS 7 / 15	9.17	9.89	9.25	9.53

- . The worst case data transmission rate for each modulation scheme is determined as 1 Mbps (Ant.0/Ant 1) for IEEE 802.11b, 6 Mbps (Ant.0/Ant.1) for IEEE 802.11g, and MCS 0 / 8 (Ant.0/Ant.1) for HT20.
- . To get a maximum emission levels from the EUT, the EUT was moved throughout the XY, XZ, and YZ planes and the worst case is “YZ” axis.

-. High 13 Channel

Modulation	DATA RATE	OUTPUT POWER[dBm]			
		SISO		MIMO	
		Ant 0	Ant 1	Ant 0	Ant 1
802.11 b	1 Mbps	12.06	12.91	-	-
	2 Mbps	12.02	12.84	-	-
	5.5 Mbps	12.00	12.81	-	-
	11 Mbps	11.94	12.83	-	-
802.11 g	6 Mbps	11.33	11.73	-	-
	9 Mbps	11.03	11.61	-	-
	12 Mbps	11.03	11.63	-	-
	18 Mbps	11.21	11.64	-	-
	24 Mbps	11.06	11.65	-	-
	36 Mbps	11.14	11.68	-	-
	48 Mbps	10.37	11.26	-	-
	54 Mbps	10.43	11.28	-	-
802.11 HT 20	MCS 0 / 8	7.24	8.80	7.22	7.77
	MCS 1 / 9	7.10	8.62	7.16	7.73
	MCS 2 / 10	7.21	8.76	7.17	7.76
	MCS 3 / 11	7.19	8.75	7.11	7.70
	MCS 4 / 12	7.18	8.78	7.19	7.73
	MCS 5 / 13	7.21	8.74	7.19	7.75
	MCS 6 / 14	6.52	7.84	6.64	6.97
	MCS 7 / 15	6.45	7.87	6.59	6.98

- . The worst case data transmission rate for each modulation scheme is determined as 1 Mbps (Ant.0/Ant 1) for IEEE 802.11b, 6 Mbps (Ant.0/Ant.1) for IEEE 802.11g, and MCS 0 / 8 (Ant.0/Ant.1) for HT20.
- . To get a maximum emission levels from the EUT, the EUT was moved throughout the XY, XZ, and YZ planes and the worst case is “YZ” axis.

-. Duty Cycle

Mode	Tx On Time [ms]	Tx Off Time [ms]	Duty Cycle [%]	Correction Factor [dB]
802.11 b_Antenna 0	-	-	100.00	-
802.11 g_Antenna 0	-	-	100.00	-
802.11 HT 20_Antenna 0	-	-	100.00	-
802.11 b_Antenna 1	-	-	100.00	-
802.11 g_Antenna 1	-	-	100.00	-
802.11 HT 20_Antenna 1	-	-	100.00	-

Note – Duty Cycle : $(\text{Tx On Time} / (\text{Tx On Time} + \text{Tx Off Time})) * 100$

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

5.4 Configuration of Test System

Line Conducted Test: The EUT was connected to USB and the power of USB was connected to Notebook PC. All supporting equipments were connected to another LISN. Preliminary Power line Conducted Emission test was performed by using the procedure in ANSI C63.10: 2020 to determine the worse operating conditions.

Radiated Emission Test: Preliminary radiated emissions test were conducted using the procedure in ANSI C63.10: 2020 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 EUT's antennas are a PCB antenna, which are permanently attached to the EUT and cannot be replaced by the user.

5.6 Antenna Configurations

Band	SISO		MIMO
	ANT 0	ANT 1	ANT 0 + ANT 1
802.11 b	O	O	X
802.11 g	O	O	X
802.11 a	O	O	X
802.11 n(HT20/40)	O	O	O
802.11 ac(VHT20/40/80)	O	O	O

Note

- 1) O : Support, X : Not Support
- 2) SISO : Single Input Single Output
- 3) MIMO : Multiple Input Multiple Output

Directional Gain Calculation

Accroding to KDB 662911 D01 Multiple Transmitter Output v02r01 F,2),f), ii)

$$DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right]$$

Technology	ANT 0	ANT 1	Directional Gain
	Peak Gain (dBi)	Peak Gain (dBi)	Peak Gain (dBi)
WLAN 2.4G	1.20	1.70	4.47
WLAN 5G UNII1	1.90	1.10	4.53
WLAN 5G UNII2A	1.60	0.30	4.01
WLAN 5G UNII2C	0.40	-0.40	3.03
WLAN 5G UNII3	-0.40	-0.10	2.76

Note

According to Ansi C63.10-2020 Section 14.6.3, the directional gain is calculated using the formula, where N_{ANT} is the total number of antennas used.

$$\text{Directional Gain} = 10 \cdot \log(((10^{(\text{ANT1 Gain}/20)} + 10^{(\text{ANT2}/20)})^2 / N_{ANT})) \text{ dBi}$$

Band	SISO		MIMO
	ANT 0	ANT 1	ANT 0 + ANT 1
WLAN 2.4G	O	O	X
WLAN 5G UNII1	O	O	O
WLAN 5G UNII2A	O	O	O
WLAN 5G UNII2C	O	O	O
WLAN 5G UNII3	O	O	O

Sample Calculation:

ANT 1 Gain: 1.90 dBi, ANT 2 Gain: 1.10 dBi

$$10 \cdot \log(((10^{(1.90/20)} + 10^{(1.10/20)})^2 / 2)) = 4.53 \text{ dBi}$$

6. MEASUREMENT UNCERTAINTY

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI C63.10-2020.

All measurement uncertainty values are shown with a coverage factor of $k = 2$ to indicate a 95 % level of confidence.

The measurement data shown herein meets or exceeds the U_{CISPR} measurement uncertainty values specified in CISPR 16-4-2 and, thus, can be compared directly to specified limits to determine compliance.

Parameter	Expanded Uncertainty (dB)
Conducted Output Power	1.22
Conducted Spurious Emission < 26.5 GHz	1.40
Power Spectral Density	1.22
Line Conducted Disturbance (150 kHz ~ 30 MHz)	1.40
Radiated Disturbance (9 kHz ~ 30 MHz)	4.09
Radiated Disturbance (30 MHz ~ 1 GHz)	3.28
Radiated Disturbance (1 GHz ~ 18 GHz)	4.42
Radiated Disturbance (18 GHz ~ 40 GHz)	5.12

7. PRELIMINARY TEST

7.1 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

7.2 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

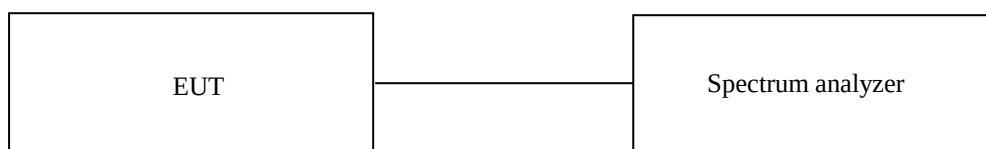
8. MINIMUM 6 dB BANDWIDTH

8.1 Operating environment

Temperature : 24 °C
Relative humidity : 43 % 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 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.



8.3 Test Date

October 15, 2025 ~ November 14, 2025

8.4 Test data for 802.11b WLAN Mode (SISO)

8.4.1 Test data for Antenna 0

-. Test Result : Pass

CHANNEL	FREQUENCY (MHz)	6 dB Bandwidth (MHz)	LIMIT (MHz)	Margin (MHz)
Low	2 412.00	10.14	0.50	9.64
Middle	2 437.00	10.14	0.50	9.64
High 11	2 462.00	10.14	0.50	9.64
High 12	2 467.00	10.14	0.50	9.64
High 13	2 472.00	10.14	0.50	9.64

Remark. Margin = Measured Value - Limit

8.4.2 Test data for Antenna 1

-. Test Result : Pass

CHANNEL	FREQUENCY (MHz)	6 dB Bandwidth (MHz)	LIMIT (MHz)	Margin (MHz)
Low	2 412.00	10.19	0.50	9.69
Middle	2 437.00	10.19	0.50	9.69
High 11	2 462.00	10.14	0.50	9.64
High 12	2 467.00	10.14	0.50	9.64
High 13	2 472.00	10.19	0.50	9.69

Remark. Margin = Measured Value - Limit

8.5 Test data for 802.11g WLAN Mode (SISO)

8.5.1 Test data for Antenna 0

-. Test Result : Pass

CHANNEL	FREQUENCY (MHz)	6 dB Bandwidth (MHz)	LIMIT (MHz)	Margin (MHz)
Low	2 412.00	15.53	0.50	15.03
Middle	2 437.00	16.28	0.50	15.78
High 11	2 462.00	16.28	0.50	15.78
High 12	2 467.00	16.28	0.50	15.78
High 13	2 472.00	15.78	0.50	15.28

Remark. Margin = Measured Value - Limit

8.5.2 Test data for Antenna 1

-. Test Result : Pass

CHANNEL	FREQUENCY (MHz)	6 dB Bandwidth (MHz)	LIMIT (MHz)	Margin (MHz)
Low	2 412.00	16.28	0.50	15.78
Middle	2 437.00	16.33	0.50	15.83
High 11	2 462.00	16.33	0.50	15.83
High 12	2 467.00	16.28	0.50	15.78
High 13	2 472.00	16.28	0.50	15.78

Remark. Margin = Measured Value – Limit

8.6 Test data for 802.11n_HT20 WLAN Mode (SISO)

8.6.1 Test data for Antenna 0

-. Test Result : Pass

CHANNEL	FREQUENCY (MHz)	6 dB Bandwidth (MHz)	LIMIT (MHz)	Margin (MHz)
Low	2 412.00	16.78	0.50	16.28
Middle	2 437.00	16.78	0.50	16.28
High 11	2 462.00	16.78	0.50	16.28
High 12	2 467.00	16.78	0.50	16.28
High 13	2 472.00	17.18	0.50	16.68

Remark. Margin = Measured Value - Limit

8.6.2 Test data for Antenna 1

-. Test Result : Pass

CHANNEL	FREQUENCY (MHz)	6 dB Bandwidth (MHz)	LIMIT (MHz)	Margin (MHz)
Low	2 412.00	17.18	0.50	16.68
Middle	2 437.00	17.13	0.50	16.63
High 11	2 462.00	16.88	0.50	16.38
High 12	2 467.00	16.78	0.50	16.28
High 13	2 472.00	16.78	0.50	16.28

Remark. Margin = Measured Value - Limit

8.7 Test data for 802.11n_HT20 WLAN Mode (MIMO)

8.7.1 Test data for Antenna 0

-. Test Result : Pass

CHANNEL	FREQUENCY (MHz)	6 dB Bandwidth (MHz)	LIMIT (MHz)	Margin (MHz)
Low	2 412.00	17.28	0.50	16.78
Middle	2 437.00	16.93	0.50	16.43
High 11	2 462.00	16.53	0.50	16.03
High 12	2 467.00	16.33	0.50	15.83
High 13	2 472.00	15.38	0.50	14.88

Remark. Margin = Measured Value - Limit

8.7.2 Test data for Antenna 1

-. Test Result : Pass

CHANNEL	FREQUENCY (MHz)	6 dB Bandwidth (MHz)	LIMIT (MHz)	Margin (MHz)
Low	2 412.00	15.93	0.50	15.43
Middle	2 437.00	16.33	0.50	15.83
High 11	2 462.00	16.33	0.50	15.83
High 12	2 467.00	16.53	0.50	16.03
High 13	2 472.00	16.28	0.50	15.78

Remark. Margin = Measured Value - Limit

9. MAXIMUM CONDUCTED (AVERAGE) OUTPUT POWER

9.1 Operating environment

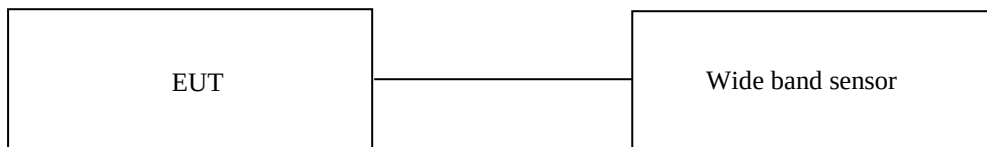
Temperature : 24 °C
Relative humidity : 43 % R.H.

9.2 Test set-up

The maximum peak output power was measured with the wide band sensor connected to the antenna output of the EUT.

The Wide Band Sensor is measured when the EUT is transmitting at the appropriate center frequency its maximum power control level as described in Section 8.3(558074 D01 15.247 Meas Guidance v05r02).

Since this measurement is made only during the ON time of the transmitter, no duty cycle correction is required.



9.3 Test Date

October 15, 2025 ~ November 14, 2025

9.4 Test data for 802.11b WLAN Mode (SISO)

9.4.1 Test data for Antenna 0

-. Test Result : Pass

-. Duty Cycle : > 98 %

CHANNEL	FREQUENCY (MHz)	MEASURED VALUE (dBm)	LIMIT (dBm)	MARGIN (dB)
LOW	2 412.00	17.14	30.00	12.86
MIDDLE	2 437.00	17.47	30.00	12.53
HIGH 11	2 462.00	17.53	30.00	12.47
HIGH 12	2 467.00	15.42	30.00	14.58
HIGH 13	2 472.00	12.06	30.00	17.94

Remark: Margin = Limit – Measured Value (=Power Sensor Reading + Cable Loss)

9.4.2 Test data for Antenna 1

-. Test Result : Pass

-. Duty Cycle : > 98 %

CHANNEL	FREQUENCY (MHz)	MEASURED VALUE (dBm)	LIMIT (dBm)	MARGIN (dB)
LOW	2 412.00	17.41	30.00	12.59
MIDDLE	2 437.00	17.15	30.00	12.85
HIGH 11	2 462.00	17.42	30.00	12.58
HIGH 12	2 467.00	15.26	30.00	14.74
HIGH 13	2 472.00	12.91	30.00	17.09

Remark: Margin = Limit – Measured Value (=Power Sensor Reading + Cable Loss)

9.5 Test data for 802.11g WLAN Mode (SISO)

9.5.1 Test data for Antenna 0

-. Test Result : Pass

-. Duty Cycle : > 98 %

CHANNEL	FREQUENCY (MHz)	MEASURED VALUE (dBm)	LIMIT (dBm)	MARGIN (dB)
LOW	2 412.00	16.59	30.00	13.41
MIDDLE	2 437.00	16.42	30.00	13.58
HIGH 11	2 462.00	16.20	30.00	13.80
HIGH 12	2 467.00	13.53	30.00	16.47
HIGH 13	2 472.00	11.33	30.00	18.67

Remark: Margin = Limit – Measured Value (=Power Sensor Reading + Cable Loss)

9.5.2 Test data for Antenna 1

-. Test Result : Pass

-. Duty Cycle : > 98 %

CHANNEL	FREQUENCY (MHz)	MEASURED VALUE (dBm)	LIMIT (dBm)	MARGIN (dB)
LOW	2 412.00	15.91	30.00	14.09
MIDDLE	2 437.00	15.81	30.00	14.19
HIGH 11	2 462.00	16.11	30.00	13.89
HIGH 12	2 467.00	14.14	30.00	15.86
HIGH 13	2 472.00	11.73	30.00	18.27

Remark: Margin = Limit – Measured Value (=Power Sensor Reading + Cable Loss)

9.6 Test data for 802.11n_HT20 WLAN Mode (SISO)

9.6.1 Test data for Antenna 0

-. Test Result : Pass

-. Duty Cycle : > 98 %

CHANNEL	FREQUENCY (MHz)	MEASURED VALUE (dBm)	LIMIT (dBm)	MARGIN (dB)
LOW	2 412.00	16.41	30.00	13.59
MIDDLE	2 437.00	16.33	30.00	13.67
HIGH 11	2 462.00	16.46	30.00	13.54
HIGH 12	2 467.00	10.16	30.00	19.84
HIGH 13	2 472.00	7.24	30.00	22.76

Remark 1: Margin = Limit – Measured Value (=Power Sensor Reading + Cable Loss)

9.6.2 Test data for Antenna 1

-. Test Result : Pass

-. Duty Cycle : > 98 %

CHANNEL	FREQUENCY (MHz)	MEASURED VALUE (dBm)	LIMIT (dBm)	MARGIN (dB)
LOW	2 412.00	16.12	30.00	13.88
MIDDLE	2 437.00	16.30	30.00	13.70
HIGH 11	2 462.00	16.72	30.00	13.28
HIGH 12	2 467.00	10.88	30.00	19.12
HIGH 13	2 472.00	8.80	30.00	21.20

Remark 1: Margin = Limit – Measured Value (=Power Sensor Reading + Cable Loss)

9.7 Test data for 802.11n_HT20 WLAN Mode (MIMO)

9.7.1 Test data for Antenna 0

-. Test Result : Pass

-. Duty Cycle : > 98 %

CHANNEL	FREQUENCY (MHz)	MEASURED VALUE (dBm)	LIMIT (dBm)	MARGIN (dB)
LOW	2 412.00	16.07	30.00	13.93
MIDDLE	2 437.00	16.04	30.00	13.96
HIGH 11	2 462.00	15.90	30.00	14.10
HIGH 12	2 467.00	10.16	30.00	19.84
HIGH 13	2 472.00	7.22	30.00	22.78

Remark 1: Margin = Limit – Measured Value (=Power Sensor Reading + Cable Loss)

9.7.2 Test data for Antenna 1

-. Test Result : Pass

-. Duty Cycle : > 98 %

CHANNEL	FREQUENCY (MHz)	MEASURED VALUE (dBm)	LIMIT (dBm)	MARGIN (dB)
LOW	2 412.00	16.24	30.00	13.76
MIDDLE	2 437.00	16.38	30.00	13.62
HIGH 11	2 462.00	16.43	30.00	13.57
HIGH 12	2 467.00	10.60	30.00	19.40
HIGH 13	2 472.00	7.77	30.00	22.23

Remark 1: Margin = Limit – Measured Value (=Power Sensor Reading + Cable Loss)

9.7.3 Test data for Multiple Transmit

-. Test Result : Pass

-. Duty Cycle : > 98 %

CHANNEL	FREQUENCY (MHz)	MEASURED VALUE (dBm)	LIMIT (dBm)	MARGIN (dB)
LOW	2 412.00	19.17	30.00	10.83
MIDDLE	2 437.00	19.22	30.00	10.78
HIGH 11	2 462.00	19.18	30.00	10.82
HIGH 12	2 467.00	13.40	30.00	16.60
HIGH 13	2 472.00	10.51	30.00	19.49

Remark 1: Margin = Limit – Measured Value (=Power Sensor Reading + Cable Loss)

Remark 2: Calculated Output Power= $10\log(10^{(\text{Antenna0 Output Power}/10)} + 10^{(\text{Antenna1 Output Power}/10)})$

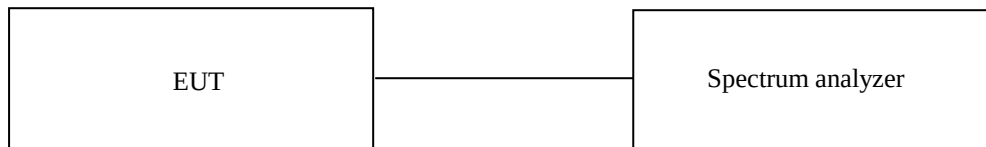
10. 100 kHz BANDWIDTH OUTSIDE THE FREQUENCY BAND

10.1 Operating environment

Temperature : 24 °C
Relative humidity : 43 % R.H.

10.2 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.



10.3 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.

10.4 Test Date

October 15, 2025 ~ November 14, 2025

10.5 Test data

For Test data for Annex. Section

10.6 Test data for radiated emission

10.6.1 Radiated Emission which fall in the Restricted Band

10.6.1.1 Test data for 802.11b WLAN Mode (SISO)

10.6.1.1.1 Test data for Antenna 0

- 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 : > 98 %
- Result : PASSED

Frequency (MHz)	Reading (dBμV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	AMP Gain	ATT (dB)	Duty Factor (dB)	Total (dBμV/m)	Limits (dBμV/m)	Margin (dB)
Test Data for Low Channel											
2 385.56	58.14	Peak	H	27.63	4.87	42.76	10.28	-	58.16	74.00	15.84
2 386.27	46.28	Average	H	27.63	4.87	42.76	10.28	-	46.30	54.00	7.70
2 386.68	55.53	Peak	V	27.63	4.87	42.75	10.28	-	55.56	74.00	18.44
2 389.84	42.21	Average	V	27.62	4.87	42.75	10.28	-	42.23	54.00	11.77
Test Data for High 11 Channel											
2 487.72	57.74	Peak	H	27.60	4.93	42.73	10.28	-	57.82	74.00	16.18
2 487.72	47.65	Average	H	27.60	4.93	42.73	10.28	-	47.73	54.00	6.27
2 487.64	56.69	Peak	V	27.60	4.93	42.73	10.28	-	56.77	74.00	17.23
2 484.04	42.82	Average	V	27.60	4.93	42.73	10.28	-	42.90	54.00	11.10
Test Data for High 12 Channel											
2 483.57	59.95	Peak	H	27.60	4.93	42.73	10.28	-	60.03	74.00	13.97
2 484.36	51.04	Average	H	27.60	4.93	42.73	10.28	-	51.12	54.00	2.88
2 483.63	60.46	Peak	V	27.60	4.93	42.73	10.28	-	60.54	74.00	13.46
2 484.52	43.67	Average	V	27.60	4.93	42.73	10.28	-	43.75	54.00	10.25

Test Data for High 13 Channel											
2 486.73	60.93	Peak	H	27.60	4.93	42.73	10.28	-	61.01	74.00	12.99
2 486.87	52.34	Average	H	27.60	4.93	42.73	10.28	-	52.42	54.00	1.58
2 483.63	60.46	Peak	V	27.60	4.93	42.73	10.28	-	60.54	74.00	13.46
2 484.52	43.67	Average	V	27.60	4.93	42.73	10.28	-	43.75	54.00	10.25

Tabulated test data for Restricted Band

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

Margin (dB) = Limits (dB μ V/m) - Total Level (dB μ V/m)

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

10.6.1.1.2 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 : > 98 %
- Result : PASSED

Frequency (MHz)	Reading (dBμV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	AMP Gain	ATT (dB)	Duty Factor (dB)	Total (dBμV/m)	Limits (dBμV/m)	Margin (dB)
Test Data for Low Channel											
2 388.00	53.75	Peak	H	27.62	4.87	42.75	10.28	-	53.77	74.00	20.23
2 386.47	43.02	Average	H	27.63	4.87	42.75	10.28	-	43.05	54.00	10.95
2 350.20	53.65	Peak	V	27.70	4.87	42.76	10.28	-	53.74	74.00	20.26
2 389.53	42.19	Average	V	27.62	4.87	42.75	10.28	-	42.21	54.00	11.79
Test Data for High 11 Channel											
2 495.05	54.55	Peak	H	27.60	4.93	42.73	10.28	-	54.63	74.00	19.37
2 484.30	43.86	Average	H	27.60	4.93	42.73	10.28	-	43.94	54.00	10.06
2 498.99	54.00	Peak	V	27.60	4.93	42.73	10.28	-	54.08	74.00	19.92
2 490.83	42.39	Average	V	27.60	4.93	42.73	10.28	-	42.47	54.00	11.53
Test Data for High 12 Channel											
2 483.63	58.15	Peak	H	27.60	4.93	42.73	10.28	-	58.23	74.00	15.77
2 483.50	50.38	Average	H	27.60	4.93	42.73	10.28	-	50.46	54.00	3.54
2 483.73	54.82	Peak	V	27.60	4.93	42.73	10.28	-	54.90	74.00	19.10
2 483.50	45.26	Average	V	27.60	4.93	42.73	10.28	-	45.34	54.00	8.66
Test Data for High 13 Channel											
2 486.42	57.83	Peak	H	27.60	4.93	42.73	10.28	-	57.91	74.00	16.09
2 486.81	50.53	Average	H	27.60	4.93	42.73	10.28	-	50.61	54.00	3.39
2 487.48	54.38	Peak	V	27.60	4.93	42.73	10.28	-	54.46	74.00	19.54
2 486.73	45.45	Average	V	27.60	4.93	42.73	10.28	-	45.53	54.00	8.47

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 – AMP Gain + ATT + Duty Factor

10.6.1.2 Test data for 802.11g WLAN Mode (SISO)

10.6.1.2.1 Test data for Antenna 0

- 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 : > 98 %
- Result : PASSED

Frequency (MHz)	Reading (dBμV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	AMP Gain	ATT (dB)	Duty Factor (dB)	Total (dBμV/m)	Limits (dBμV/m)	Margin (dB)
Test Data for Low Channel											
2 390.04	63.04	Peak	H	27.62	4.87	42.75	10.28	-	63.06	74.00	10.94
2 389.63	47.06	Average	H	27.62	4.87	42.75	10.28	-	47.08	54.00	6.92
2 390.04	54.19	Peak	V	27.62	4.87	42.75	10.28	-	54.21	74.00	19.79
2 387.60	41.94	Average	V	27.62	4.87	42.75	10.28	-	41.96	54.00	12.04
Test Data for High 11 Channel											
2 483.66	62.67	Peak	H	27.60	4.93	42.73	10.28	-	62.75	74.00	11.25
2 483.77	48.23	Average	H	27.60	4.93	42.73	10.28	-	48.31	54.00	5.69
2 484.95	57.41	Peak	V	27.60	4.93	42.73	10.28	-	57.49	74.00	16.51
2 483.77	46.27	Average	V	27.60	4.93	42.73	10.28	-	46.35	54.00	7.65
Test Data for High 12 Channel											
2 484.95	64.68	Peak	H	27.60	4.93	42.73	10.28	-	64.76	74.00	9.24
2 483.50	51.12	Average	H	27.60	4.93	42.73	10.28	-	51.20	54.00	2.80
2 484.85	63.25	Peak	V	27.60	4.93	42.73	10.28	-	63.33	74.00	10.67
2 483.70	49.47	Average	V	27.60	4.93	42.73	10.28	-	49.55	54.00	4.45
Test Data for High 13 Channel											
2 483.54	64.43	Peak	H	27.60	4.93	42.73	10.28	-	64.51	74.00	9.49
2 483.51	51.14	Average	H	27.60	4.93	42.73	10.28	-	51.22	54.00	2.78
2 483.59	64.68	Peak	V	27.60	4.93	42.73	10.28	-	64.76	74.00	9.24
2 484.04	49.32	Average	V	27.60	4.93	42.73	10.28	-	49.40	54.00	4.60

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 – AMP Gain + ATT + Duty Factor

10.6.1.2.2 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 : > 98 %
- Result : PASSED

Frequency (MHz)	Reading (dBμV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	AMP Gain	ATT (dB)	Duty Factor (dB)	Total (dBμV/m)	Limits (dBμV/m)	Margin (dB)
Test Data for Low Channel											
2 389.12	59.92	Peak	H	27.62	4.87	42.75	10.28	-	59.94	74.00	14.06
2 389.74	46.28	Average	H	27.62	4.87	42.75	10.28	-	46.30	54.00	7.70
2 390.04	60.83	Peak	V	27.62	4.87	42.75	10.28	-	60.85	74.00	13.15
2 389.12	47.09	Average	V	27.62	4.87	42.75	10.28	-	47.11	54.00	6.89
Test Data for High 11 Channel											
2 483.62	57.95	Peak	H	27.60	4.93	42.73	10.28	-	58.03	74.00	15.97
2 483.54	45.18	Average	H	27.60	4.93	42.73	10.28	-	45.26	54.00	8.74
2 483.81	56.13	Peak	V	27.60	4.93	42.73	10.28	-	56.21	74.00	17.79
2 483.73	44.10	Average	V	27.60	4.93	42.73	10.28	-	44.18	54.00	9.82
Test Data for High 12 Channel											
2 484.36	62.58	Peak	H	27.60	4.93	42.73	10.28	-	62.66	74.00	11.34
2 483.90	50.90	Average	H	27.60	4.93	42.73	10.28	-	50.98	54.00	3.02
2 484.39	60.07	Peak	V	27.60	4.93	42.73	10.28	-	60.15	74.00	13.85
2 483.60	49.19	Average	V	27.60	4.93	42.73	10.28	-	49.27	54.00	4.73
Test Data for High 13 Channel											
2 483.51	61.59	Peak	H	27.60	4.93	42.73	10.28	-	61.67	74.00	12.33
2 483.51	50.41	Average	H	27.60	4.93	42.73	10.28	-	50.49	54.00	3.51
2 483.87	58.46	Peak	V	27.60	4.93	42.73	10.28	-	58.54	74.00	15.46
2 483.54	48.52	Average	V	27.60	4.93	42.73	10.28	-	48.60	54.00	5.40

Tabulated test data for Restricted Band

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

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

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

10.6.1.3 Test data for 802.11n_HT20 WLAN Mode (SISO)

10.6.1.3.1 Test data for Antenna 0

- 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 : > 98 %
- Result : PASSED

Frequency (MHz)	Reading (dBμV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	AMP Gain	ATT (dB)	Duty Factor (dB)	Total (dBμV/m)	Limits (dBμV/m)	Margin (dB)
Test Data for Low Channel											
2 390.04	66.36	Peak	H	27.62	4.87	42.75	10.28	-	66.38	74.00	7.62
2 389.94	52.05	Average	H	27.62	4.87	42.75	10.28	-	52.07	54.00	1.93
2 390.04	56.28	Peak	V	27.62	4.87	42.75	10.28	-	56.30	74.00	17.70
2 389.94	42.74	Average	V	27.62	4.87	42.75	10.28	-	42.76	54.00	11.24
Test Data for High 11 Channel											
2 483.66	65.00	Peak	H	27.60	4.93	42.73	10.28	-	65.08	74.00	8.92
2 483.62	51.83	Average	H	27.60	4.93	42.73	10.28	-	51.91	54.00	2.09
2 483.54	61.15	Peak	V	27.60	4.93	42.73	10.28	-	61.23	74.00	12.77
2 483.54	48.94	Average	V	27.60	4.93	42.73	10.28	-	49.02	54.00	4.98
Test Data for High 12 Channel											
2 486.80	60.38	Peak	H	27.60	4.93	42.73	10.28	-	60.46	74.00	13.54
2 483.60	50.18	Average	H	27.60	4.93	42.73	10.28	-	50.26	54.00	3.74
2 483.57	58.27	Peak	V	27.60	4.93	42.73	10.28	-	58.35	74.00	15.65
2 483.67	45.39	Average	V	27.60	4.93	42.73	10.28	-	45.47	54.00	8.53
Test Data for High 13 Channel											
2 486.14	63.08	Peak	H	27.60	4.93	42.73	10.28	-	63.16	74.00	10.84
2 483.51	50.93	Average	H	27.60	4.93	42.73	10.28	-	51.01	54.00	2.99
2 487.90	56.59	Peak	V	27.60	4.93	42.73	10.28	-	56.67	74.00	17.33
2 483.62	44.71	Average	V	27.60	4.93	42.73	10.28	-	44.79	54.00	9.21

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 – AMP Gain + ATT + Duty Factor

10.6.1.3.2 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 : > 98 %
- Result : PASSED

Frequency (MHz)	Reading (dBμV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	AMP Gain	ATT (dB)	Duty Factor (dB)	Total (dBμV/m)	Limits (dBμV/m)	Margin (dB)
Test Data for Low Channel											
2 388.31	64.98	Peak	H	27.62	4.87	42.75	10.28	-	65.00	74.00	9.00
2 388.31	47.55	Average	H	27.62	4.87	42.75	10.28	-	47.57	54.00	6.43
2 388.92	62.45	Peak	V	27.62	4.87	42.75	10.28	-	62.47	74.00	11.53
2 388.21	49.00	Average	V	27.62	4.87	42.75	10.28	-	49.02	54.00	4.98
Test Data for High 11 Channel											
2 486.62	59.77	Peak	H	27.60	4.93	42.73	10.28	-	59.85	74.00	14.15
2 483.66	47.52	Average	H	27.60	4.93	42.73	10.28	-	47.60	54.00	6.40
2 483.92	57.44	Peak	V	27.60	4.93	42.73	10.28	-	57.52	74.00	16.48
2 483.51	45.79	Average	V	27.60	4.93	42.73	10.28	-	45.87	54.00	8.13
Test Data for High 12 Channel											
2 483.70	66.39	Peak	H	27.60	4.93	42.73	10.28	-	66.47	74.00	7.53
2 483.50	52.70	Average	H	27.60	4.93	42.73	10.28	-	52.78	54.00	1.22
2 483.53	60.75	Peak	V	27.60	4.93	42.73	10.28	-	60.83	74.00	13.17
2 483.67	47.02	Average	V	27.60	4.93	42.73	10.28	-	47.10	54.00	6.90
Test Data for High 13 Channel											
2 488.38	63.52	Peak	H	27.60	4.93	42.73	10.28	-	63.60	74.00	10.40
2 483.71	50.27	Average	H	27.60	4.93	42.73	10.28	-	50.35	54.00	3.65
2 488.60	59.46	Peak	V	27.60	4.93	42.73	10.28	-	59.54	74.00	14.46
2 483.54	46.69	Average	V	27.60	4.93	42.73	10.28	-	46.77	54.00	7.23

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 – AMP Gain + ATT + Duty Factor

10.6.1.4 Test data for 802.11n_HT20 WLAN Mode (MIMO)

10.6.1.4.1 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 : > 98 %
- Result : PASSED

Frequency (MHz)	Reading (dBμV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	AMP Gain	ATT (dB)	Duty Factor (dB)	Total (dBμV/m)	Limits (dBμV/m)	Margin (dB)
Test Data for Low Channel											
2 389.63	63.38	Peak	H	27.62	4.87	42.75	10.28	-	63.40	74.00	10.60
2 390.04	49.83	Average	H	27.62	4.87	42.75	10.28	-	49.85	54.00	4.15
2 385.97	57.97	Peak	V	27.63	4.87	42.76	10.28	-	57.99	74.00	16.01
2 390.04	44.50	Average	V	27.62	4.87	42.75	10.28	-	44.52	54.00	9.48
Test Data for High 11 Channel											
2 483.66	65.76	Peak	H	27.60	4.93	42.73	10.28	-	65.84	74.00	8.16
2 483.77	52.51	Average	H	27.60	4.93	42.73	10.28	-	52.59	54.00	1.41
2 484.42	62.10	Peak	V	27.60	4.93	42.73	10.28	-	62.18	74.00	11.82
2 483.73	50.22	Average	V	27.60	4.93	42.73	10.28	-	50.30	54.00	3.70
Test Data for High 12 Channel											
2 483.63	63.51	Peak	H	27.60	4.93	42.73	10.28	-	63.59	74.00	10.41
2 483.53	51.56	Average	H	27.60	4.93	42.73	10.28	-	51.64	54.00	2.36
2 484.26	56.48	Peak	V	27.60	4.93	42.73	10.28	-	56.56	74.00	17.44
2 483.70	44.35	Average	V	27.60	4.93	42.73	10.28	-	44.43	54.00	9.57
Test Data for High 13 Channel											
2 484.04	63.11	Peak	H	27.60	4.93	42.73	10.28	-	63.19	74.00	10.81
2 483.54	52.51	Average	H	27.60	4.93	42.73	10.28	-	52.59	54.00	1.41
2 483.51	56.94	Peak	V	27.60	4.93	42.73	10.28	-	57.02	74.00	16.98
2 483.51	45.31	Average	V	27.60	4.93	42.73	10.28	-	45.39	54.00	8.61

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 – AMP Gain + ATT + Duty Factor

10.6.2 Spurious & Harmonic Radiated Emission

10.6.2.1 Test data for 802.11b WLAN Mode (SISO)

10.6.2.1.1 Test data for Antenna 0

- 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 : > 98 %
- Result : PASSED

Frequency (MHz)	Reading (dBμV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	AMP Gain	Duty Factor (dB)	Total (dBμV/m)	Limits (dBμV/m)	Margin (dB)
Test Data for Low Channel										
4 823.900	50.86	Peak	H	31.50	6.98	42.24	-	47.10	74.00	26.90
4 824.100	43.90	Average	H	31.50	6.98	42.24	-	40.14	54.00	13.86
4 824.000	51.03	Peak	V	31.50	6.98	42.24	-	47.27	74.00	26.73
4 823.950	44.20	Average	V	31.50	6.98	42.24	-	40.44	54.00	13.56
Test Data for Middle Channel										
4 874.100	50.55	Peak	H	31.50	6.77	42.24	-	46.58	74.00	27.42
4 874.000	43.40	Average	H	31.50	6.77	42.24	-	39.43	54.00	14.57
4 874.400	49.62	Peak	V	31.50	6.77	42.24	-	45.65	74.00	28.35
4 874.050	42.72	Average	V	31.50	6.77	42.24	-	38.75	54.00	15.25
Test Data for High 11 Channel										
4 924.000	50.08	Peak	H	31.55	6.77	42.24	-	46.16	74.00	27.84
4 923.900	43.81	Average	H	31.55	6.77	42.24	-	39.89	54.00	14.11
4 923.900	49.17	Peak	V	31.55	6.77	42.24	-	45.25	74.00	28.75
4 923.850	40.47	Average	V	31.55	6.77	42.24	-	36.55	54.00	17.45
Test Data for High 12 Channel										
4 933.850	50.49	Peak	H	31.57	6.77	42.24	-	46.59	74.00	27.41
4 933.900	42.86	Average	H	31.57	6.77	42.24	-	38.96	54.00	15.04
4 934.050	49.09	Peak	V	31.57	6.77	42.24	-	45.19	74.00	28.81
4 933.950	41.72	Average	V	31.57	6.77	42.24	-	37.82	54.00	16.18

Test Data for High 13 Channel										
4 943.800	50.21	Peak	H	31.59	6.77	42.24	-	46.33	74.00	27.67
4 944.000	41.46	Average	H	31.59	6.77	42.24	-	37.58	54.00	16.42
4 943.900	49.15	Peak	V	31.59	6.77	42.24	-	45.27	74.00	28.73
4 944.050	39.44	Average	V	31.59	6.77	42.24	-	35.56	54.00	18.44

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

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

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

10.6.2.1.2 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 : > 98 %
- Result : PASSED

Frequency (MHz)	Reading (dBμV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	AMP Gain	Duty Factor (dB)	Total (dBμV/m)	Limits (dBμV/m)	Margin (dB)
Test Data for Low Channel										
4 814.410	48.26	Peak	H	31.50	6.98	42.24	-	44.50	74.00	29.50
4 823.900	37.27	Average	H	31.50	6.98	42.24	-	33.51	54.00	20.49
4 824.050	49.31	Peak	V	31.50	6.98	42.24	-	45.55	74.00	28.45
4 824.050	39.42	Average	V	31.50	6.98	42.24	-	35.66	54.00	18.34
Test Data for Middle Channel										
4 897.980	48.02	Peak	H	31.50	6.77	42.24	-	44.05	74.00	29.95
4 849.230	36.05	Average	H	31.50	6.98	42.24	-	32.29	54.00	21.71
4 874.500	48.48	Peak	V	31.50	6.77	42.24	-	44.51	74.00	29.49
4 874.100	38.93	Average	V	31.50	6.77	42.24	-	34.96	54.00	19.04
Test Data for High 11 Channel										
4 942.430	48.20	Peak	H	31.58	6.77	42.24	-	44.31	74.00	29.69
4 924.200	35.97	Average	H	31.55	6.77	42.24	-	32.05	54.00	21.95
4 923.350	48.38	Peak	V	31.55	6.77	42.24	-	44.46	74.00	29.54
4 923.800	38.51	Average	V	31.55	6.77	42.24	-	34.59	54.00	19.41
Test Data for High 12 Channel										
4 932.900	47.72	Peak	H	31.57	6.77	42.24	-	43.82	74.00	30.18
4 938.350	35.84	Average	H	31.58	6.77	42.24	-	31.95	54.00	22.05
4 935.400	48.46	Peak	V	31.57	6.77	42.24	-	44.56	74.00	29.44
4 933.900	35.91	Average	V	31.57	6.77	42.24	-	32.01	54.00	21.99

Test Data for High 13 Channel										
4 927.420	47.88	Peak	H	31.55	6.77	42.24	-	43.96	74.00	30.04
4 935.260	35.82	Average	H	31.57	6.77	42.24	-	31.92	54.00	22.08
4 932.210	47.97	Peak	V	31.56	6.77	42.24	-	44.06	74.00	29.94
4 944.150	36.25	Average	V	31.59	6.77	42.24	-	32.37	54.00	21.63

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

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

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

10.6.2.2 Test data for 802.11g WLAN Mode (SISO)

10.6.2.2.1 Test data for Antenna 0

- . 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 : > 98 %
- . Result : PASSED

Frequency (MHz)	Reading (dBμV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	AMP Gain	Duty Factor (dB)	Total (dBμV/m)	Limits (dBμV/m)	Margin (dB)
Test Data for Low Channel										
4 822.900	50.10	Peak	H	31.50	6.98	42.24	-	46.34	74.00	27.66
4 824.600	38.35	Average	H	31.50	6.98	42.24	-	34.59	54.00	19.41
4 825.650	48.84	Peak	V	31.50	6.98	42.24	-	45.08	74.00	28.92
4 838.290	36.61	Average	V	31.50	6.98	42.24	-	32.85	54.00	21.15
Test Data for Middle Channel										
4 875.650	48.67	Peak	H	31.50	6.77	42.24	-	44.70	74.00	29.30
4 867.660	37.54	Average	H	31.50	6.77	42.24	-	33.57	54.00	20.43
4 861.360	48.22	Peak	V	31.50	6.77	42.24	-	44.25	74.00	29.75
4 851.970	36.37	Average	V	31.50	6.77	42.24	-	32.40	54.00	21.60
Test Data for High 11 Channel										
4 925.950	48.43	Peak	H	31.55	6.77	42.24	-	44.51	74.00	29.49
4 927.200	36.96	Average	H	31.55	6.77	42.24	-	33.04	54.00	20.96
4 930.740	48.64	Peak	V	31.56	6.77	42.24	-	44.73	74.00	29.27
4 937.990	36.47	Average	V	31.58	6.77	42.24	-	32.58	54.00	21.42
Test Data for High 12 Channel										
4 946.690	48.82	Peak	H	31.59	6.77	42.24	-	44.94	74.00	29.06
4 953.030	36.70	Average	H	31.61	7.20	42.24	-	33.27	54.00	20.73
4 930.850	48.76	Peak	V	31.56	6.77	42.24	-	44.85	74.00	29.15
4 932.200	37.27	Average	V	31.56	6.77	42.24	-	33.36	54.00	20.64

Test Data for High 13 Channel										
4 947.400	49.06	Peak	H	31.59	6.77	42.24	-	45.18	74.00	28.82
4 953.140	36.85	Average	H	31.61	7.20	42.24	-	33.42	54.00	20.58
4 940.000	48.44	Peak	V	31.58	6.77	42.24	-	44.55	74.00	29.45
4 943.800	37.48	Average	V	31.59	6.77	42.24	-	33.60	54.00	20.40

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

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

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

10.6.2.2.2 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 : > 98 %
- Result : PASSED

Frequency (MHz)	Reading (dBμV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	AMP Gain	Duty Factor (dB)	Total (dBμV/m)	Limits (dBμV/m)	Margin (dB)
Test Data for Low Channel										
4 804.720	48.84	Peak	H	31.50	6.98	42.24	-	45.08	74.00	28.92
4 827.800	36.79	Average	H	31.50	6.98	42.24	-	33.03	54.00	20.97
4 846.680	49.15	Peak	V	31.50	6.98	42.24	-	45.39	74.00	28.61
4 825.200	36.98	Average	V	31.50	6.98	42.24	-	33.22	54.00	20.78
Test Data for Middle Channel										
4 866.010	48.77	Peak	H	31.50	6.77	42.24	-	44.80	74.00	29.20
4 869.010	36.69	Average	H	31.50	6.77	42.24	-	32.72	54.00	21.28
4 887.790	48.73	Peak	V	31.50	6.77	42.24	-	44.76	74.00	29.24
4 872.000	36.88	Average	V	31.50	6.77	42.24	-	32.91	54.00	21.09
Test Data for High 11 Channel										
4 925.600	48.80	Peak	H	31.55	6.77	42.24	-	44.88	74.00	29.12
4 928.050	36.84	Average	H	31.56	6.77	42.24	-	32.93	54.00	21.07
4 930.390	49.17	Peak	V	31.56	6.77	42.24	-	45.26	74.00	28.74
4 929.940	37.01	Average	V	31.56	6.77	42.24	-	33.10	54.00	20.90
Test Data for High 12 Channel										
4 953.580	48.63	Peak	H	31.61	7.20	42.24	-	45.20	74.00	28.80
4 935.900	36.71	Average	H	31.57	6.77	42.24	-	32.81	54.00	21.19
4 952.230	48.82	Peak	V	31.61	7.20	42.24	-	45.39	74.00	28.61
4 934.100	36.61	Average	V	31.57	6.77	42.24	-	32.71	54.00	21.29

Test Data for High 13 Channel										
4 959.680	48.48	Peak	H	31.64	7.20	42.24	-	45.08	74.00	28.92
4 965.080	36.61	Average	H	31.66	7.20	42.24	-	33.23	54.00	20.77
4 925.520	49.25	Peak	V	31.55	6.77	42.24	-	45.33	74.00	28.67
4 942.300	36.86	Average	V	31.58	6.77	42.24	-	32.97	54.00	21.03

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

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

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

10.6.2.3 Test data for 802.11n_HT20 WLAN Mode (SISO)

10.6.2.3.1 Test data for Antenna 0

- . 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 : > 98 %
- . Result : PASSED

Frequency (MHz)	Reading (dBμV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	AMP Gain	Duty Factor (dB)	Total (dBμV/m)	Limits (dBμV/m)	Margin (dB)
Test Data for Low Channel										
4 822.150	50.54	Peak	H	31.50	6.98	42.24	-	46.78	74.00	27.22
4 827.750	39.00	Average	H	31.50	6.98	42.24	-	35.24	54.00	18.76
4 806.820	49.34	Peak	V	31.50	6.98	42.24	-	45.58	74.00	28.42
4 835.390	37.19	Average	V	31.50	6.98	42.24	-	33.43	54.00	20.57
Test Data for Middle Channel										
4 895.030	49.07	Peak	H	31.50	6.77	42.24	-	45.10	74.00	28.90
4 878.100	36.95	Average	H	31.50	6.77	42.24	-	32.98	54.00	21.02
4 850.270	48.87	Peak	V	31.50	6.77	42.24	-	44.90	74.00	29.10
4 870.200	37.21	Average	V	31.50	6.77	42.24	-	33.24	54.00	20.76
Test Data for High 11 Channel										
4 930.290	49.15	Peak	H	31.56	6.77	42.24	-	45.24	74.00	28.76
4 922.250	37.11	Average	H	31.54	6.77	42.24	-	33.18	54.00	20.82
4 933.090	48.84	Peak	V	31.57	6.77	42.24	-	44.94	74.00	29.06
4 937.390	36.97	Average	V	31.57	6.77	42.24	-	33.07	54.00	20.93
Test Data for High 12 Channel										
4 935.000	49.01	Peak	H	31.57	6.77	42.24	-	45.11	74.00	28.89
4 933.950	37.12	Average	H	31.57	6.77	42.24	-	33.22	54.00	20.78
4 950.380	49.17	Peak	V	31.60	7.20	42.24	-	45.73	74.00	28.27
4 939.150	36.98	Average	V	31.58	6.77	42.24	-	33.09	54.00	20.91

Test Data for High 13 Channel										
4 953.890	49.26	Peak	H	31.62	7.20	42.24	-	45.84	74.00	28.16
4 928.370	36.97	Average	H	31.56	6.77	42.24	-	33.06	54.00	20.94
4 947.700	49.19	Peak	V	31.60	6.77	42.24	-	45.32	74.00	28.68
4 940.650	36.87	Average	V	31.58	6.77	42.24	-	32.98	54.00	21.02

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

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

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

10.6.2.3.2 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 : > 98 %
- Result : PASSED

Frequency (MHz)	Reading (dBμV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	AMP Gain	Duty Factor (dB)	Total (dBμV/m)	Limits (dBμV/m)	Margin (dB)
Test Data for Low Channel										
4 825.550	49.24	Peak	H	31.50	6.98	42.24	-	45.48	74.00	28.52
4 829.250	37.28	Average	H	31.50	6.98	42.24	-	33.52	54.00	20.48
4 844.230	49.11	Peak	V	31.50	6.98	42.24	-	45.35	74.00	28.65
4 847.980	37.07	Average	V	31.50	6.98	42.24	-	33.31	54.00	20.69
Test Data for Middle Channel										
4 866.160	49.23	Peak	H	31.50	6.77	42.24	-	45.26	74.00	28.74
4 849.330	36.90	Average	H	31.50	6.98	42.24	-	33.14	54.00	20.86
4 850.870	49.05	Peak	V	31.50	6.77	42.24	-	45.08	74.00	28.92
4 872.900	37.26	Average	V	31.50	6.77	42.24	-	33.29	54.00	20.71
Test Data for High 11 Channel										
4 920.100	48.97	Peak	H	31.54	6.77	42.24	-	45.04	74.00	28.96
4 911.910	36.90	Average	H	31.52	6.77	42.24	-	32.95	54.00	21.05
4 927.950	48.88	Peak	V	31.56	6.77	42.24	-	44.97	74.00	29.03
4 929.350	37.48	Average	V	31.56	6.77	42.24	-	33.57	54.00	20.43
Test Data for High 12 Channel										
4 941.590	50.25	Peak	H	31.58	6.77	42.24	-	46.36	74.00	27.64
4 934.400	37.00	Average	H	31.57	6.77	42.24	-	33.10	54.00	20.90
4 928.850	49.02	Peak	V	31.56	6.77	42.24	-	45.11	74.00	28.89
4 934.350	37.05	Average	V	31.57	6.77	42.24	-	33.15	54.00	20.85

Test Data for High 13 Channel										
4 963.480	49.07	Peak	H	31.65	7.20	42.24	-	45.68	74.00	28.32
4 964.180	37.12	Average	H	31.66	7.20	42.24	-	33.74	54.00	20.26
4 943.100	49.40	Peak	V	31.59	6.77	42.24	-	45.52	74.00	28.48
4 945.950	37.28	Average	V	31.59	6.77	42.24	-	33.40	54.00	20.60

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

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

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

10.6.2.4 Test data for 802.11n_HT20 WLAN Mode (MIMO)

10.6.2.4.1 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 : > 98 %
- Result : PASSED

Frequency (MHz)	Reading (dBμV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	AMP Gain	Duty Factor (dB)	Total (dBμV/m)	Limits (dBμV/m)	Margin (dB)
Test Data for Low Channel										
4 845.780	49.07	Peak	H	31.50	6.98	42.24	-	45.31	74.00	28.69
4 828.900	36.99	Average	H	31.50	6.98	42.24	-	33.23	54.00	20.77
4 838.640	49.23	Peak	V	31.50	6.98	42.24	-	45.47	74.00	28.53
4 826.650	37.53	Average	V	31.50	6.98	42.24	-	33.77	54.00	20.23
Test Data for Middle Channel										
4 863.560	48.75	Peak	H	31.50	6.77	42.24	-	44.78	74.00	29.22
4 852.070	36.71	Average	H	31.50	6.77	42.24	-	32.74	54.00	21.26
4 886.940	48.66	Peak	V	31.50	6.77	42.24	-	44.69	74.00	29.31
4 858.520	36.82	Average	V	31.50	6.77	42.24	-	32.85	54.00	21.15
Test Data for High 11 Channel										
4 942.630	48.95	Peak	H	31.59	6.77	42.24	-	45.07	74.00	28.93
4 931.140	37.08	Average	H	31.56	6.77	42.24	-	33.17	54.00	20.83
4 914.360	49.34	Peak	V	31.53	6.77	42.24	-	45.40	74.00	28.60
4 928.250	36.99	Average	V	31.56	6.77	42.24	-	33.08	54.00	20.92
Test Data for High 12 Channel										
4 953.130	48.90	Peak	H	31.61	7.20	42.24	-	45.47	74.00	28.53
4 928.910	37.19	Average	H	31.56	6.77	42.24	-	33.28	54.00	20.72
4 933.450	49.31	Peak	V	31.57	6.77	42.24	-	45.41	74.00	28.59
4 934.750	36.84	Average	V	31.57	6.77	42.24	-	32.94	54.00	21.06

Test Data for High 13 Channel										
4 963.380	49.03	Peak	H	31.65	7.20	42.24	-	45.64	74.00	28.36
4 945.250	37.07	Average	H	31.59	6.77	42.24	-	33.19	54.00	20.81
4 935.610	49.15	Peak	V	31.57	6.77	42.24	-	45.25	74.00	28.75
4 946.350	36.97	Average	V	31.59	6.77	42.24	-	33.09	54.00	20.91

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

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

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

11. PEAK POWER SPECTRUL DENSITY

11.1 Operating environment

Temperature : 24 °C

Relative humidity : 43 % R.H.

11.2 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.



11.3 Test Date

October 15, 2025 ~ November 14, 2025

11.4 Test data for 802.11b WLAN Mode (SISO)

11.4.1 Test data for Antenna 0

-. Test Result : Pass

-. Operating Condition : Continuous transmitting mode

CHANNEL	FREQUENCY (MHz)	MEASURED VLAUE (dBm/3kHz)	LIMIT (dBm/3kHz)	MARGIN (dB)
Low	2 412.00	-17.65	8.00	25.65
Middle	2 437.00	-17.55	8.00	25.55
High 11	2 462.00	-16.29	8.00	24.29
High 12	2 467.00	-19.53	8.00	27.53
High 13	2 472.00	-21.89	8.00	29.89

Remark. Margin = Limit – Measured value

11.4.2 Test data for Antenna 1

-. Test Result : Pass

-. Operating Condition : Continuous transmitting mode

CHANNEL	FREQUENCY (MHz)	MEASURED VLAUE (dBm/3kHz)	LIMIT (dBm/3kHz)	MARGIN (dB)
Low	2 412.00	-17.12	8.00	25.12
Middle	2 437.00	-16.99	8.00	24.99
High 11	2 462.00	-16.56	8.00	24.56
High 12	2 467.00	-18.71	8.00	26.71
High 13	2 472.00	-21.18	8.00	29.18

Remark. Margin = Limit – Measured value

11.5 Test data for 802.11g WLAN Mode (SISO)

11.5.1 Test data for Antenna 0

-. Test Result : Pass

-. Operating Condition : Continuous transmitting mode

CHANNEL	FREQUENCY (MHz)	MEASURED VLAUE (dBm/3kHz)	LIMIT (dBm/3kHz)	MARGIN (dB)
Low	2 412.00	-17.61	8.00	25.61
Middle	2 437.00	-18.20	8.00	26.20
High 11	2 462.00	-17.62	8.00	25.62
High 12	2 467.00	-20.58	8.00	28.58
High 13	2 472.00	-20.28	8.00	28.28

Remark. Margin = Limit – Measured value

11.5.2 Test data for Antenna 1

-. Test Result : Pass

-. Operating Condition : Continuous transmitting mode

CHANNEL	FREQUENCY (MHz)	MEASURED VLAUE (dBm/3kHz)	LIMIT (dBm/3kHz)	MARGIN (dB)
Low	2 412.00	-19.01	8.00	27.01
Middle	2 437.00	-18.23	8.00	26.23
High 11	2 462.00	-17.94	8.00	25.94
High 12	2 467.00	-19.57	8.00	27.57
High 13	2 472.00	-22.16	8.00	30.16

Remark. Margin = Limit – Measured value

11.6 Test data for 802.11n_HT20 WLAN Mode (SISO)

11.6.1 Test data for Antenna 0

-. Test Result : Pass

-. Operating Condition : Continuous transmitting mode

CHANNEL	FREQUENCY (MHz)	MEASURED VLAUE (dBm/3kHz)	LIMIT (dBm/3kHz)	MARGIN (dB)
Low	2 412.00	-18.00	8.00	26.00
Middle	2 437.00	-18.01	8.00	26.01
High 11	2 462.00	-17.97	8.00	25.97
High 12	2 467.00	-23.94	8.00	31.94
High 13	2 472.00	-26.86	8.00	34.86

Remark 1: Margin = Limit – Measured value

11.6.2 Test data for Antenna 1

-. Test Result : Pass

-. Operating Condition : Continuous transmitting mode

CHANNEL	FREQUENCY (MHz)	MEASURED VLAUE (dBm/3kHz)	LIMIT (dBm/3kHz)	MARGIN (dB)
Low	2 412.00	-18.95	8.00	26.95
Middle	2 437.00	-18.01	8.00	26.01
High 11	2 462.00	-17.62	8.00	25.62
High 12	2 467.00	-23.58	8.00	31.58
High 13	2 472.00	-25.47	8.00	33.47

Remark 1: Margin = Limit – Measured value

11.7 Test data for 802.11n_HT20 WLAN Mode (MIMO)

11.7.1 Test data for Antenna 0

-. Test Result : Pass

-. Operating Condition : Continuous transmitting mode

CHANNEL	FREQUENCY (MHz)	MEASURED VLAUE (dBm/3kHz)	LIMIT (dBm/3kHz)	MARGIN (dB)
Low	2 412.00	-19.14	8.00	27.14
Middle	2 437.00	-18.85	8.00	26.85
High 11	2 462.00	-19.37	8.00	27.37
High 12	2 467.00	-24.60	8.00	32.60
High 13	2 472.00	-29.06	8.00	37.06

Remark 1: Margin = Limit – Measured value

11.7.2 Test data for Antenna 1

-. Test Result : Pass

-. Operating Condition : Continuous transmitting mode

CHANNEL	FREQUENCY (MHz)	MEASURED VLAUE (dBm/3kHz)	LIMIT (dBm/3kHz)	MARGIN (dB)
Low	2 412.00	-20.08	8.00	28.08
Middle	2 437.00	-18.72	8.00	26.72
High 11	2 462.00	-17.84	8.00	25.84
High 12	2 467.00	-24.25	8.00	32.25
High 13	2 472.00	-26.61	8.00	34.61

Remark 1: Margin = Limit – Measured value

11.7.3 Test data for Multiple Transmit

-. Test Result : Pass

-. Operating Condition : Packet transmitting mode

CHANNEL	FREQUENCY (MHz)	MEASURED VLAUE (dBm/3kHz)	LIMIT (dBm/3kHz)	MARGIN (dB)
Low	2 412.00	-16.57	8.00	24.57
Middle	2 437.00	-15.77	8.00	23.77
High 11	2 462.00	-15.53	8.00	23.53
High 12	2 467.00	-21.41	8.00	29.41
High 13	2 472.00	-24.65	8.00	32.65

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

It should not be reproduced except in full, without the written approval of ONETECH Corp.

OTC-TRF-RF-001(0)

12. RADIATED EMISSION TEST

12.1 Operating environment

Temperature : 24 °C
Relative humidity : 43 % R.H.

12.2 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.

12.3 Test Date

October 15, 2025 ~ November 14, 2025

12.4 Test data for 30 MHz ~ 1 000 MHz

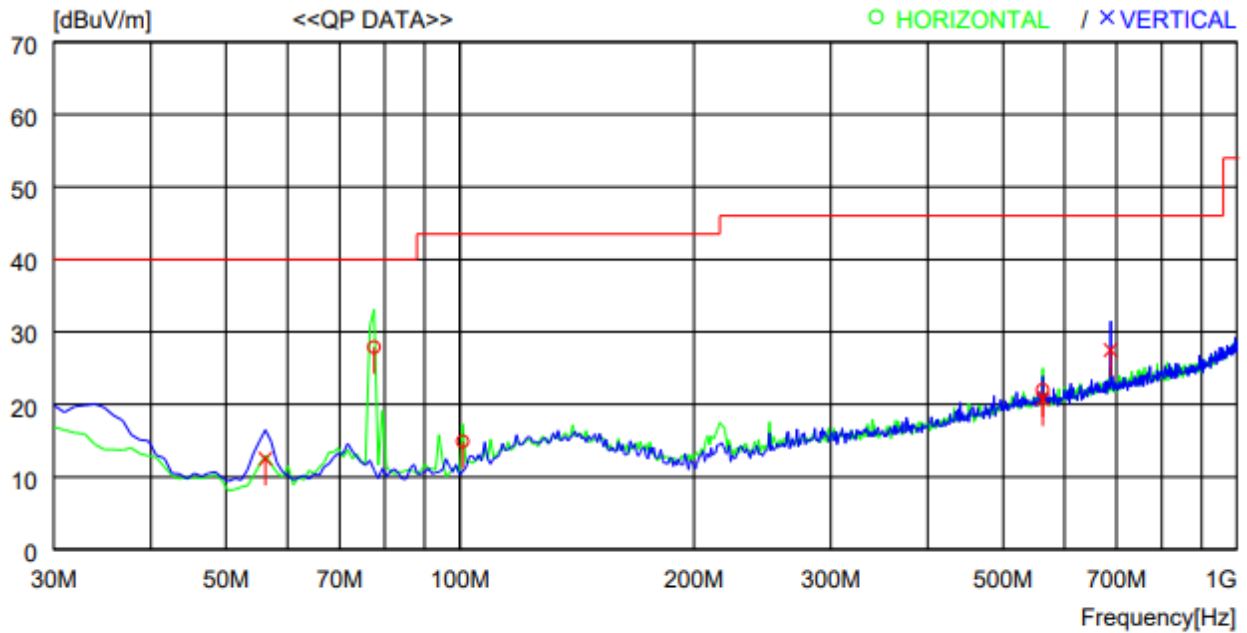
12.4.1 Test data for WLAN 2.4 GHz

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

Result : PASSED

EUT : Wi-Fi/BT Transceiver

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



No.	FREQ [MHz]	READING QP [dBuV]	ANT FACTOR [dB]	LOSS [dB]	GAIN [dB]	RESULT [dBuV/m]	LIMIT [dBuV/m]	MARGIN [dB]	ANTENNA [cm]	TABLE [DEG]
----- Horizontal -----										
1	77.530	45.5	13.3	1.2	32.1	27.9	40.0	12.1	400	359
2	100.810	30.2	15.5	1.3	32.1	14.9	43.5	28.6	315	170
3	562.529	27.6	23.8	3.1	32.5	22.0	46.0	24.0	400	359
----- Vertical -----										
4	56.190	31.0	12.6	1.0	32.1	12.5	40.0	27.5	399	0
5	562.529	26.3	23.8	3.1	32.5	20.7	46.0	25.3	385	0
6	687.655	31.1	25.4	3.5	32.5	27.5	46.0	18.5	231	70

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

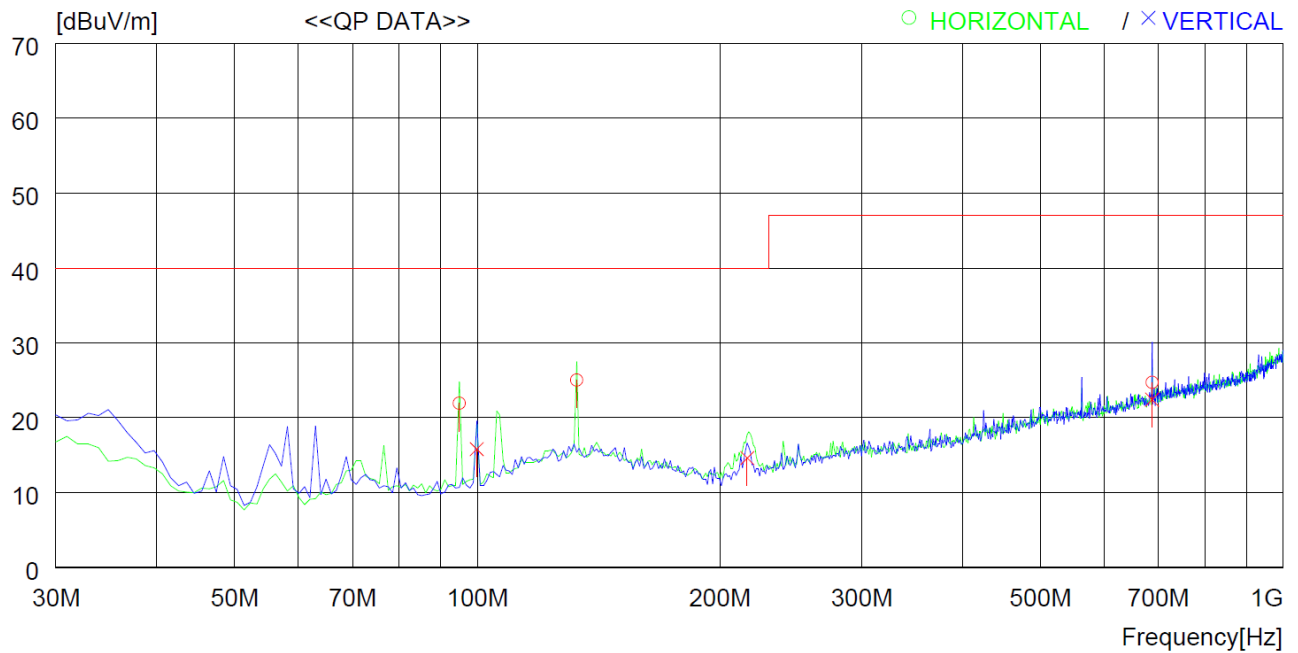
12.4.2 Test data for Intermodulation Mode(Bluetooth LE+WLAN 2.4 GHz)

Limits apply to : RSS-247 Issue 2

Result : PASSED

EUT : Wi-Fi/BT Transceiver

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



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	94.990	38.1	14.6	1.3	32.1	21.9	40.0	18.1	256	0
2	132.820	36.4	19.2	1.5	32.1	25.0	40.0	15.0	396	166
3	687.655	28.3	25.4	3.5	32.5	24.7	47.0	22.3	327	174
----- Vertical -----										
4	99.840	31.2	15.4	1.3	32.1	15.8	40.0	24.2	311	227
5	216.240	28.5	16.3	1.9	32.1	14.6	40.0	25.4	255	359
6	687.655	26.0	25.4	3.5	32.5	22.4	47.0	24.6	210	359

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

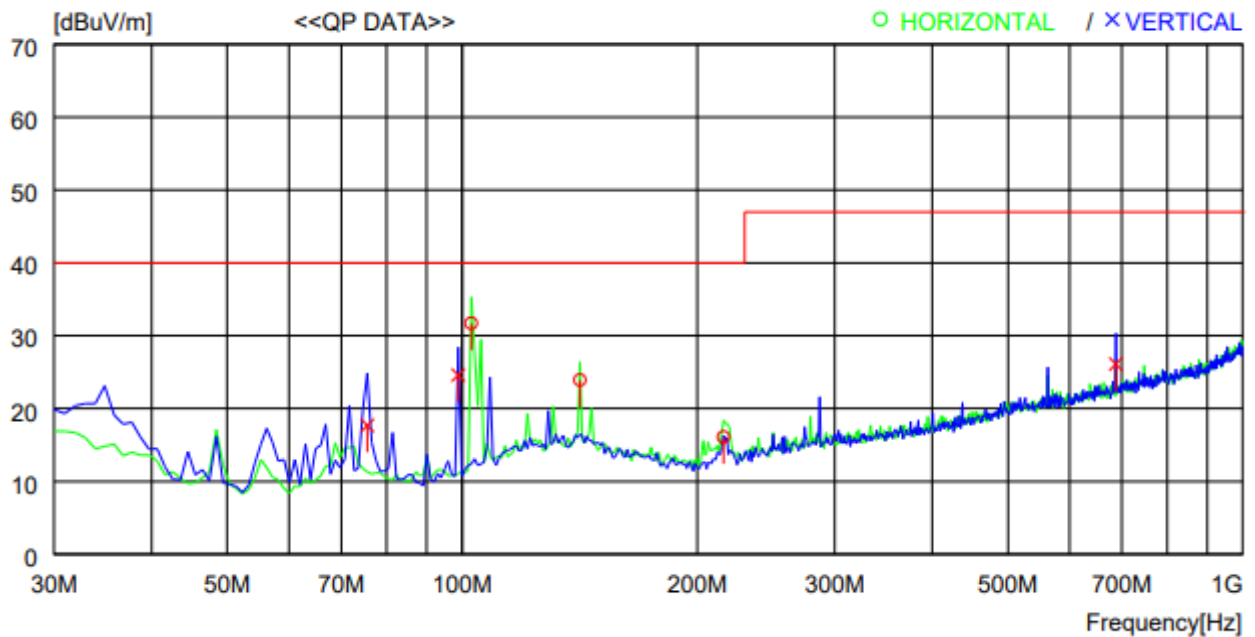
12.4.3 Test data for Intermodulation Mode(Bluetooth+WLAN 2.4 GHz)

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

Result : PASSED

EUT : Wi-Fi/BT Transceiver

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



No.	FREQ	READING	ANT	LOSS	GAIN	RESULT	LIMIT	MARGIN	ANTENNA	TABLE
	[MHz]	QP	FACTOR	[dB]	[dB]	[dBuV/m]	[dBuV/m]	[dB]	[cm]	[DEG]
----- Horizontal -----										
1	102.750	46.6	15.9	1.3	32.1	31.7	40.0	8.3	158	35
2	141.550	35.2	19.3	1.5	32.1	23.9	40.0	16.1	213	0
3	216.240	30.0	16.3	1.9	32.1	16.1	40.0	23.9	231	0
----- Vertical -----										
4	75.590	35.5	13.2	1.1	32.1	17.7	40.0	22.3	231	33
5	98.870	40.2	15.2	1.3	32.1	24.6	40.0	15.4	116	180
6	687.655	29.7	25.4	3.5	32.5	26.1	47.0	20.9	269	76

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

12.5 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.									

12.6 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.									

13. CONDUCTED EMISSION TEST

13.1 Operating environment

Temperature : 24 °C
Relative humidity : 43 % R.H.

13.2 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.

13.3 Test Date

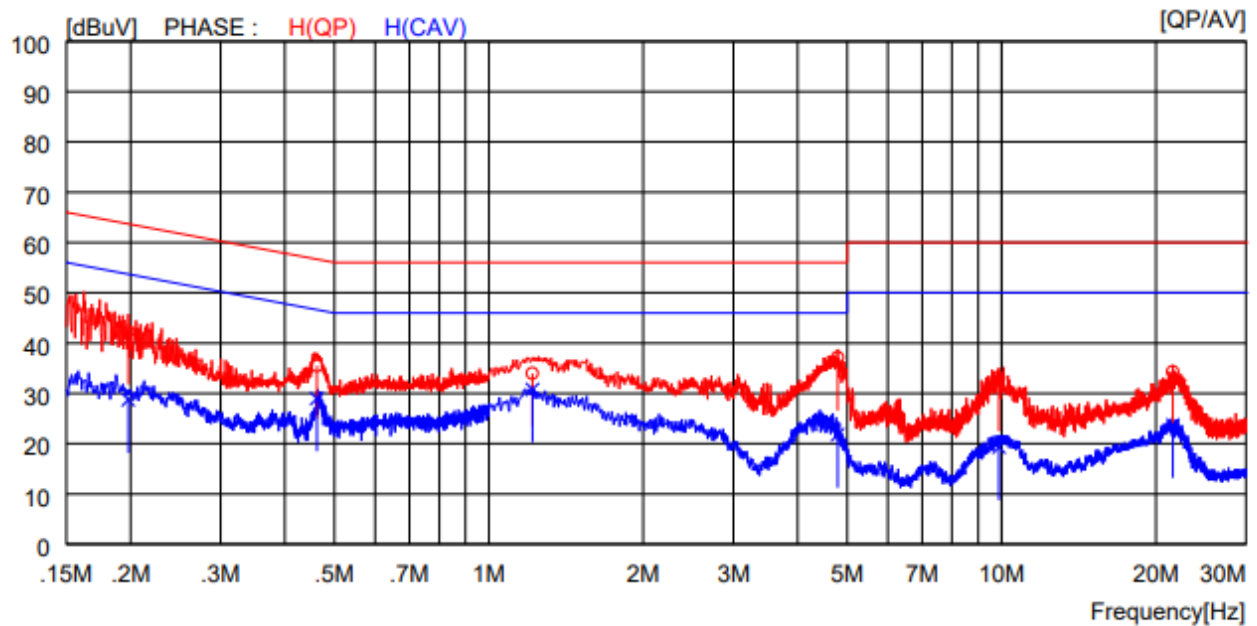
October 15, 2025 ~ November 14, 2025

13.4 Test data

13.4.1 Test data for WLAN 2.4 GHz

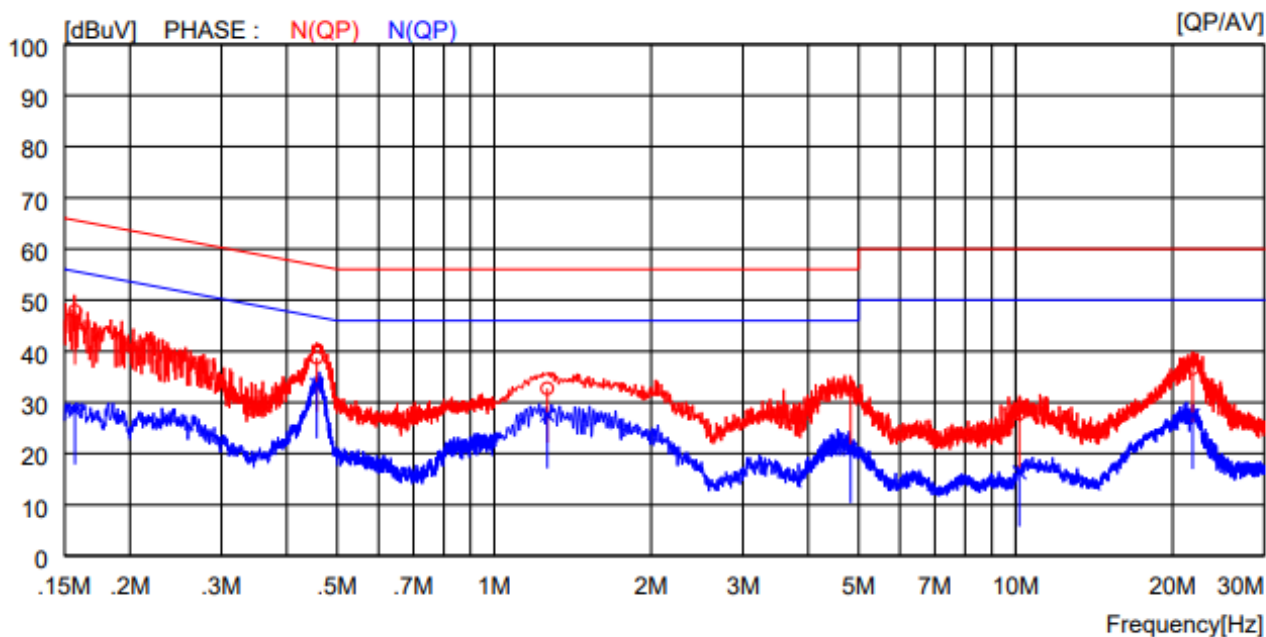
- . Resolution bandwidth : 9 kHz
- . Frequency range : 0.15 MHz ~ 30 MHz
- . Antenna 1, Antenna 2 and Multiple transmit tested, but the worst data were recorded

-. Tested Line : HOT LINE



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	0.19800	32.2	----	10.1	42.3	----	63.7	----	21.4	----	H (QP)
2	0.46200	25.4	----	10.1	35.5	----	56.7	----	21.2	----	H (QP)
3	1.21600	23.9	----	10.1	34.0	----	56.0	----	22.0	----	H (QP)
4	4.79200	26.8	----	10.3	37.1	----	56.0	----	18.9	----	H (QP)
5	9.88500	22.5	----	10.5	33.0	----	60.0	----	27.0	----	H (QP)
6	21.59000	23.1	----	11.2	34.3	----	60.0	----	25.7	----	H (QP)
7	0.19800	----	18.6	10.1	----	28.7	----	53.7	----	25.0	H (CAV)
8	0.46200	----	18.9	10.1	----	29.0	----	46.7	----	17.7	H (CAV)
9	1.21600	----	20.7	10.1	----	30.8	----	46.0	----	15.2	H (CAV)
10	4.79200	----	11.5	10.3	----	21.8	----	46.0	----	24.2	H (CAV)
11	9.88500	----	8.8	10.5	----	19.3	----	50.0	----	30.7	H (CAV)
12	21.59000	----	12.5	11.2	----	23.7	----	50.0	----	26.3	H (CAV)

-. Tested Line : NEUTRAL LINE



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	37.8	----	10.1	47.9	----	65.6	----	17.7	----	N(QP)
2	0.45700	28.6	----	10.1	38.7	----	56.7	----	18.0	----	N(QP)
3	1.26400	22.6	----	10.1	32.7	----	56.0	----	23.3	----	N(QP)
4	4.82400	22.1	----	10.3	32.4	----	56.0	----	23.6	----	N(QP)
5	10.17000	17.3	----	10.5	27.8	----	60.0	----	32.2	----	N(QP)
6	21.84000	25.4	----	11.2	36.6	----	60.0	----	23.4	----	N(QP)
7	0.15700	----	18.3	10.1	----	28.4	----	55.6	----	27.2	N(CAV)
8	0.45700	----	23.4	10.1	----	33.5	----	46.7	----	13.2	N(CAV)
9	1.26400	----	17.5	10.1	----	27.6	----	46.0	----	18.4	N(CAV)
10	4.82400	----	10.6	10.3	----	20.9	----	46.0	----	25.1	N(CAV)
11	10.17000	----	5.8	10.5	----	16.3	----	50.0	----	33.7	N(CAV)
12	21.84000	----	16.3	11.2	----	27.5	----	50.0	----	22.5	N(CAV)

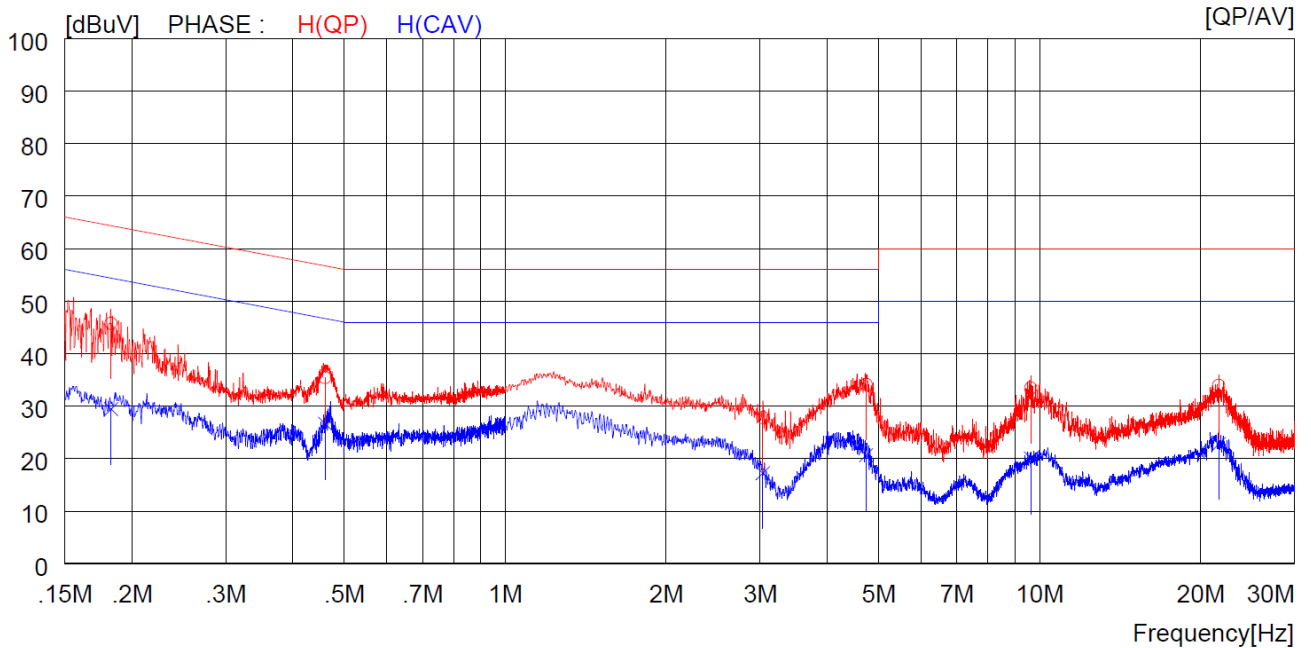
Remark: Margin (dB) = Limit – Level (Result)

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

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

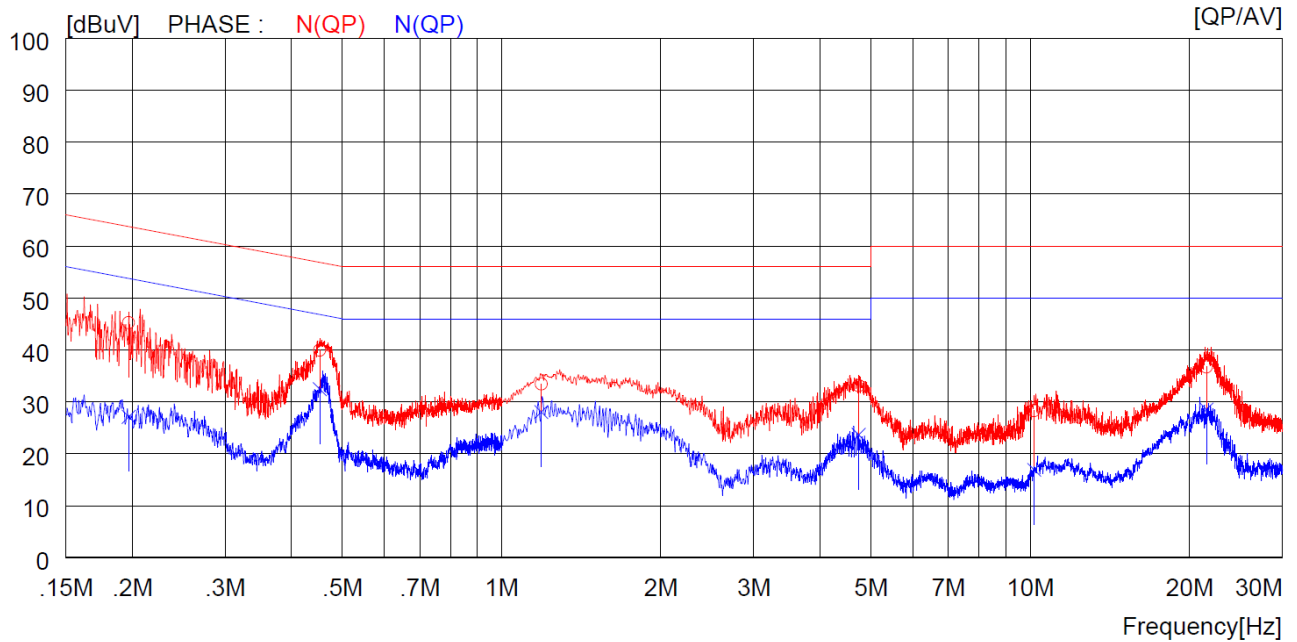
- Resolution bandwidth : 9 kHz
- Frequency range : 0.15 MHz ~ 30 MHz
- Antenna 1, Antenna 2 and Multiple transmit tested, but the worst data were recorded

-. Tested Line : HOT LINE



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	0.18300	35.6	----	10.1	45.7	----	64.3	----	18.6	----	H (QP)
2	0.46000	25.3	----	10.1	35.4	----	56.7	----	21.3	----	H (QP)
3	3.03200	17.6	----	10.2	27.8	----	56.0	----	28.2	----	H (QP)
4	4.73200	23.8	----	10.3	34.1	----	56.0	----	21.9	----	H (QP)
5	9.63000	22.9	----	10.5	33.4	----	60.0	----	26.6	----	H (QP)
6	21.63000	22.7	----	11.2	33.9	----	60.0	----	26.1	----	H (QP)
7	0.18300	----	19.3	10.1	----	29.4	----	54.3	----	24.9	H (CAV)
8	0.46000	----	16.5	10.1	----	26.6	----	46.7	----	20.1	H (CAV)
9	3.03200	----	7.0	10.2	----	17.2	----	46.0	----	28.8	H (CAV)
10	4.73200	----	10.3	10.3	----	20.6	----	46.0	----	25.4	H (CAV)
11	9.63000	----	9.5	10.5	----	20.0	----	50.0	----	30.0	H (CAV)
12	21.63000	----	11.5	11.2	----	22.7	----	50.0	----	27.3	H (CAV)

-. Tested Line : NEUTRAL LINE



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	0.19700	35.1	----	10.1	45.2	----	63.7	----	18.5	----	N (QP)
2	0.45300	29.8	----	10.1	39.9	----	56.8	----	16.9	----	N (QP)
3	1.18800	23.3	----	10.1	33.4	----	56.0	----	22.6	----	N (QP)
4	4.73600	22.8	----	10.3	33.1	----	56.0	----	22.9	----	N (QP)
5	10.17000	17.8	----	10.5	28.3	----	60.0	----	31.7	----	N (QP)
6	21.55000	25.5	----	11.2	36.7	----	60.0	----	23.3	----	N (QP)
7	0.19700	----	17.0	10.1	----	27.1	----	53.7	----	26.6	N (CAV)
8	0.45300	----	22.3	10.1	----	32.4	----	46.8	----	14.4	N (CAV)
9	1.18800	----	17.9	10.1	----	28.0	----	46.0	----	18.0	N (CAV)
10	4.73600	----	13.3	10.3	----	23.6	----	46.0	----	22.4	N (CAV)
11	10.17000	----	6.4	10.5	----	16.9	----	50.0	----	33.1	N (CAV)
12	21.55000	----	17.3	11.2	----	28.5	----	50.0	----	21.5	N (CAV)

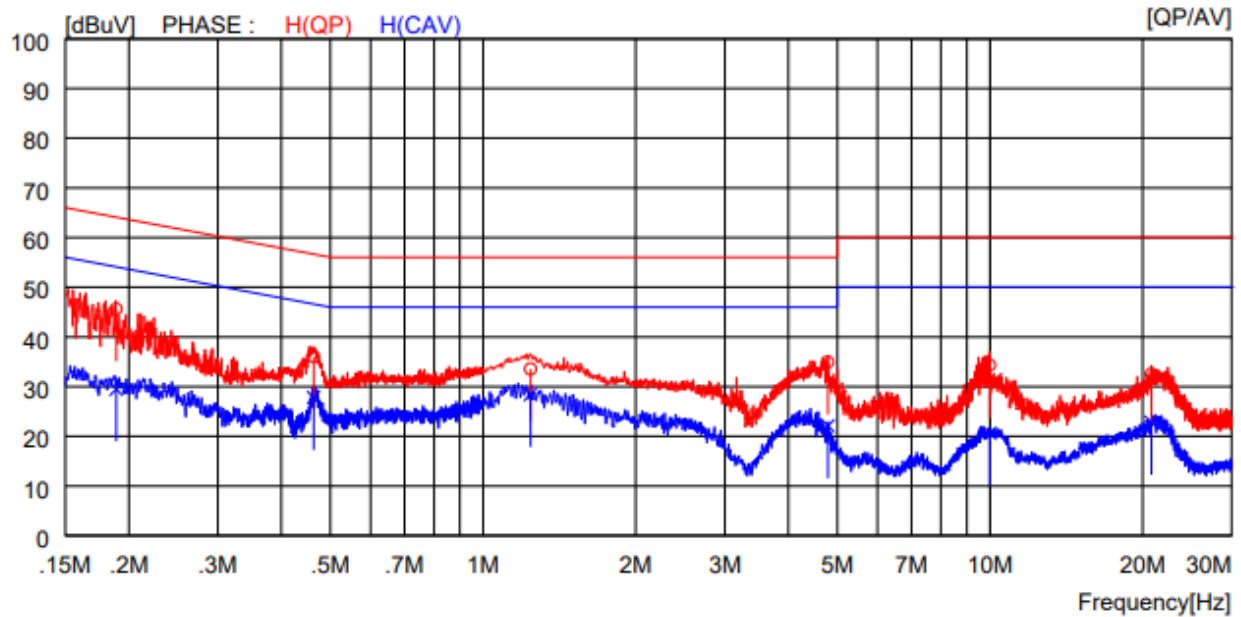
Remark: Margin (dB) = Limit – Level (Result)

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

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

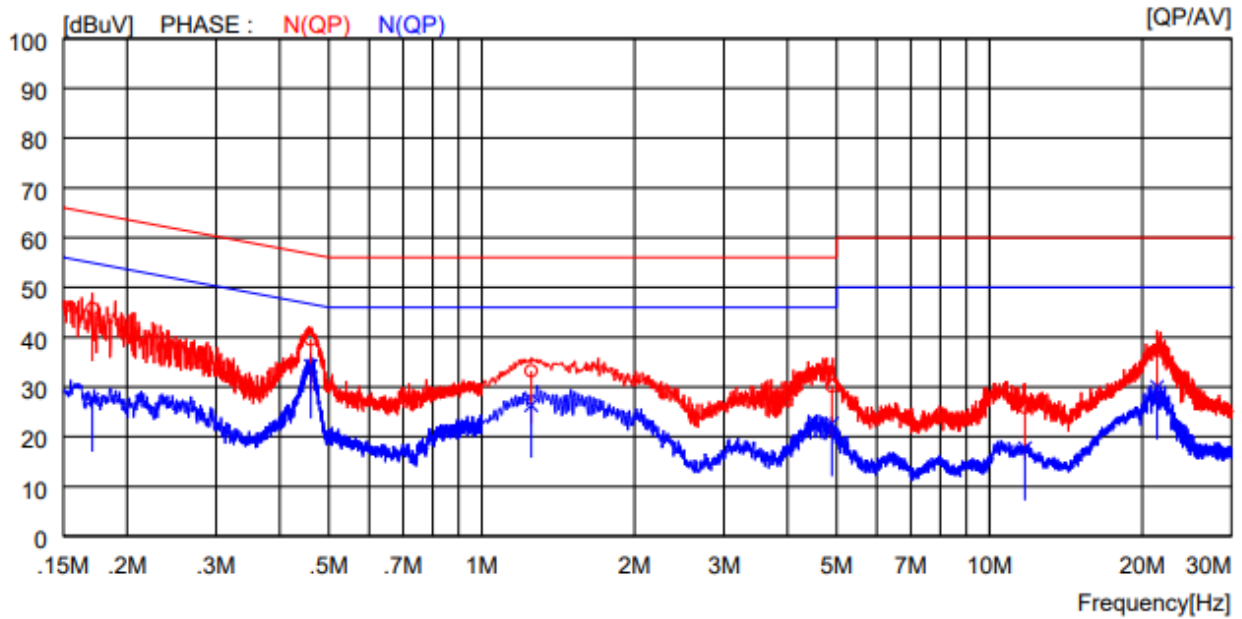
- . Resolution bandwidth : 9 kHz
- . Frequency range : 0.15 MHz ~ 30 MHz
- . Antenna 1, Antenna 2 and Multiple transmit tested, but the worst data were recorded

-. Tested Line : HOT LINE



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	0.18900	35.5	----	10.1	45.6	----	64.1	----	18.5	----	H(QP)
2	0.46300	25.9	----	10.1	36.0	----	56.6	----	20.6	----	H(QP)
3	1.24000	23.4	----	10.1	33.5	----	56.0	----	22.5	----	H(QP)
4	4.78800	24.6	----	10.3	34.9	----	56.0	----	21.1	----	H(QP)
5	9.99000	23.8	----	10.5	34.3	----	60.0	----	25.7	----	H(QP)
6	20.82000	21.3	----	11.2	32.5	----	60.0	----	27.5	----	H(QP)
7	0.18900	----	19.4	10.1	----	29.5	----	54.1	----	24.6	H(CAV)
8	0.46300	----	17.7	10.1	----	27.8	----	46.6	----	18.8	H(CAV)
9	1.24000	----	18.3	10.1	----	28.4	----	46.0	----	17.6	H(CAV)
10	4.78800	----	11.8	10.3	----	22.1	----	46.0	----	23.9	H(CAV)
11	9.99000	----	10.1	10.5	----	20.6	----	50.0	----	29.4	H(CAV)
12	20.82000	----	11.6	11.2	----	22.8	----	50.0	----	27.2	H(CAV)

-. Tested Line : NEUTRAL LINE



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	0.17100	35.6	----	10.1	45.7	----	64.9	----	19.2	----	N(QP)
2	0.46100	29.4	----	10.1	39.5	----	56.7	----	17.2	----	N(QP)
3	1.25200	23.1	----	10.1	33.2	----	56.0	----	22.8	----	N(QP)
4	4.89600	19.9	----	10.3	30.2	----	56.0	----	25.8	----	N(QP)
5	11.74000	15.2	----	10.7	25.9	----	60.0	----	34.1	----	N(QP)
6	21.38000	26.1	----	11.2	37.3	----	60.0	----	22.7	----	N(QP)
7	0.17100	----	17.4	10.1	----	27.5	----	54.9	----	27.4	N(CAV)
8	0.46100	----	24.1	10.1	----	34.2	----	46.7	----	12.5	N(CAV)
9	1.25200	----	16.2	10.1	----	26.3	----	46.0	----	19.7	N(CAV)
10	4.89600	----	12.3	10.3	----	22.6	----	46.0	----	23.4	N(CAV)
11	11.74000	----	7.0	10.7	----	17.7	----	50.0	----	32.3	N(CAV)
12	21.38000	----	18.8	11.2	----	30.0	----	50.0	----	20.0	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.

14. LIST OF TEST EQUIPMENT

Model Number	Manufacturer	Description	Serial Number	Last Cal.(Interval)
FSV3044	Rohde & Schwarz	Signal & Spectrum Analyzer	101757	Jul. 02, 2025 (1Y)
FSV3044	Rohde & Schwarz	Signal & Spectrum Analyzer	101758	Jul. 02, 2025 (1Y)
FSVA40	Rohde & Schwarz	Signal Analyzer	101598	Jan. 13, 2025 (1Y)
FSV40-N	Rohde & Schwarz	Spectrum Analyzer	101457	Jan. 13, 2025 (1Y)
FSV40-N	Rohde & Schwarz	Spectrum Analyzer	101651	Jan. 13, 2025 (1Y)
SMBV100A	Rohde & Schwarz	VECTOR SIGNAL GENERATOR	260423	Jan 14, 2025 (1Y)
SMB100A	Rohde & Schwarz	SiGNAL GENERATOR	177648	Jan 13, 2025 (1Y)
NRP33S	Rohde & Schwarz	3-Path Diode Power Sensor	103230	Jan 06, 2025(1Y)
ESU	Rohde & Schwarz	EMI Test Receiver	100261	Mar. 05, 2025 (1Y)
310N	Sonoma Instrument	Pre-Amplifier	392756	Oct. 16, 2025 (1Y)
SCU18	Rohde & Schwarz	Pre-Amplifier	102266	Jul. 02, 2025 (1Y)
SCU40A	Rohde & Schwarz	Pre-Amplifier	100436	Jan. 15, 2025 (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
HLP-2008	TDK RF Solutions	Hybrid Antenna	131316	Mar. 09, 2024 (2Y)
BBHA9120D	Schwarzbeck	Horn Antenna	9120D-1366	Jun. 19, 2025 (1Y)
BBHA9170	Schwarzbeck	Horn Antenna	BBHA9170178	Jan. 04, 2025 (1Y)
HPF 3GHz	Rohde & Schwarz	High Pass Filter	N/A	Jan. 13, 2025 (1Y)
10 dB Attenuator	Rohde & Schwarz	10 dB Attenuator	14100882-4	Jul. 02, 2025 (1Y)
ESCI	Rohde & Schwarz	EMI TEST RECEIVER	101012	Sep. 24, 2025 (1Y)
NSLK8126	Schwarzbeck	V - LISN (4*16/25A)	8126404	Mar. 11, 2025 (1Y)
ESH3-Z2	Rohde & Schwarz	PULSE LIMITER	100655	Mar. 11, 2025 (1Y)