

**FCC 15.247 & RSS-247
(Permissive Change)
2.4GHz Test Report**

for

Sony Group Corporation

1-7-1 Konan Minato-ku Tokyo, 108-0075 Japan

Product Name : WIFI+BT Module
Model Name : WXT2HM2001
Brand : GSD
FCC ID : AK8WXT2HM2001
IC : 409B-WXT2HM2001

**Prepared by: : AUDIX Technology Corporation,
EMC Department**



The test report is based on a single evaluation of one sample of the above-mentioned products. It does not imply an assessment of the whole production and does not permit the use of the test lab logo.

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TEST REPORT (Permissive Change)

Applicant : Sony Group Corporation
Manufacturer : Hui Zhou Gaoshengda Technology Co.,LTD
EUT Description
(1) Product : WIFI+BT Module
(2) Model : WXT2HM2001
(3) Brand : GSD
(4) Power Supply: DC 3.3V

Applicable Standards:

Title 47 CFR FCC Part 15 Subpart C
RSS-Gen (Issue 5), Amendment 2, February 2021
RSS-247 (Issue 3), August 2023

Audix Technology Corp. tested the equipment mentioned in accordance with the requirements set forth in the above standards. Test results indicate that the equipment tested is capable of demonstrating compliance with the requirements as documented within this report.

Audix Technology Corp. does not assume responsibility for any conclusions and generalizations drawn from the test results with regard to other specimens and samples.

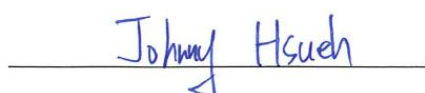
Date of Report: 2025. 10. 07

Reviewed by:



(Annie Yu/Supervisor)

Approved by:



(Johnny Hsueh/Deputy Manager)



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1. REVISION RECORD OF TEST REPORT

Edition No	Issued Date	Revision Summary	Report Number
0	2025. 10. 07	Original Report	EM-F250487

2. SUMMARY OF TEST RESULTS

Rule		Description	Results
FCC	IC		
15.207	RSS-Gen §8.8	Conducted Emission	N/A ^{Note2}
15.247(d)/ 15.205	RSS-Gen §8.9 RSS-247 §5.5	Radiated Band Edge and Radiated Spurious Emission	PASS
15.247(a)(2)	RSS-247 §5.2(1)	DTS/Occupied Bandwidth	N/A ^{Note2}
15.247(b)(3)	RSS-247 §5.4(4)	Maximum Peak Output Power	PASS
15.247(d)	RSS-247 §5.5	Conducted Band Edges and Conducted Spurious Emission	N/A ^{Note2}
15.247 (e)	RSS-247 §5.2(2)	Peak Power Spectral Density	N/A ^{Note2}
15.203	---	Antenna Requirement	Compliance
Note: 1. The uncertainties value is not used in determining the result. 2. Due to add new antennas don't influence on RF characteristics, so it is unnecessary to re-test.			

3. GENERAL INFORMATION.

The EUT's information described in this section are all provided by the applicant.

3.1. Description of Application

Applicant	Sony Group Corporation 1-7-1 Konan Minato-ku Tokyo, 108-0075 Japan
Manufacturer	Hui Zhou Gaoshengda Technology Co.,LTD No.2,Jin-da Road,Huinan High-tech Industrial Park,Hui-ao Avenue,Huizhou City,Guangdong,China
Product	WIFI+BT Module
Model	WXT2HM2001
Brand	GSD

3.2. Description of EUT

Test Model	WXT2HM2001			
Serial Number	N/A			
Power Rating	DC 3.3V			
Hardware Version	V1.0			
Software Version	V1.0			
RF Features	WLAN:802.11 a/b/g/n/ac/ax Bluetooth BR/EDR Bluetooth LE			
Transmit Type	2.4 GHz Bands		Client	Master
	802.11b	2T2R	✓	✓
	802.11g	2T2R	✓	✓
	802.11n-HT20/40	2T2R	✓	✓
	802.11ax-HE20/40	2T2R	✓	✓
	BT/BLE	1T1R		
	U-NII 5G Bands		Client	Master
	802.11a	2T2R	✓	✓
	802.11n-HT20/ ac-VHT20/ax-HE20	2T2R	✓	✓
	802.11n-HT40	2T2R	✓	
	802.11ac-VHT40/80	2T2R	✓	
	802.11ax-HE40/80	2T2R	✓	
	WLAN 6E Bands		Client	Master
	802.11ax-HE20/40/80	2T2R	✓	
	802.11ax-HE80	2T2R		✓
	The MIMO is correlated and supported Cyclic Delay Diversity (CDD).			
Sample Status	Trial sample			
Test Sample	Sample No.	Test Item		Firmware
	01	RSE, RF Conducted		N/A
Date of Receipt	2025. 07. 29			
Date of Test	2025. 08. 04 ~ 09. 09			
Interface Ports of EUT	None			
Accessories Supplied	None			

Note: Pursuant ISO 17025:2017 section 7.8.2, Audix Technology Corp. does not assume responsibility for all EUT's information including RF features, transmit type, antenna information...etc are provided by customer.

3.3. Reference Test Guidance

KDB 662911 D01 Multiple Transmitter Output v02r01
ANSI C63.10-2020
ANSI C63.10-2020 + Cor.1-2023

3.4. Information for Permissive Change

- The EUT is an addition version with original FCC ID: AK8WXT2HM2001 and IC: 409B-WXT2HM2001 is as following.
 - (a) To add new antenna without any other changes. This module has only a change in the antenna; there are no other alterations.
- The differences between this application and original's ID as clarify in following list.
- Due to above different item, there have some test item should be re-tested (see section 2), the test data are recorded in this report.

3.5. Antenna Information

Entry Name	Antenna Model	Manufacture	Antenna Type	Frequency (MHz)	Max Gain(dBi)
YY2099C	SH1-Ant-4#-V1.3	ZTX	PCB	5150~5250	4.49
				5250~5350	4.49
				5450-5750	4.24
				5750-5850	4.12
				5925-6425	4.42
				6425-6525	4.42
				6525-6875	4.48
				6875-7125	4.43
	SH1-Ant-3#-V1.0	ZTX	PCB	5150~5250	4.01
				5250~5350	3.99
				5450-5750	4.12
				5750-5850	3.76
				5925-6425	4.01
				6425-6525	3.73
				6525-6875	3.78
				6875-7125	4.08
	SH1-Ant-5#-V1.3	ZTX	PCB	2402-2480	2.79

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Entry Name	Antenna Model	Manufacture	Antenna Type	Frequency (MHz)	Max Gain(dBi)
YY2100C1	ZTX-AHC-Ant-3#-V02 (WIFI 0)	ZTX	PCB	5150~5250	3.69
				5250~5350	3.52
				5450-5750	4.08
				5750-5850	4.33
				5925-6425	4.38
				6425-6525	4.08
				6525-6875	4.11
				6875-7125	4.48
	ZTX-AHC-Ant-3#-V02 (WIFI 1)	ZTX	PCB	5150~5250	4.38
				5250~5350	4.46
				5450-5750	4.46
				5750-5850	3.48
				5925-6425	4.42
				6425-6525	3.46
				6525-6875	4.06
				6875-7125	4.26
	ZTX-AHC-BT-V03	ZTX	PCB	2402-2480	3.16

Entry Name	Antenna Model	Manufacture	Antenna Type	Frequency (MHz)	Max Gain(dBi)
YY2101C	ZTX-RH5-WI FI0-V04 (WIFI0)	ZTX	PCB	2402-2480	3.47
				5150~5250	4.75
				5250~5350	4.75
				5450-5750	4.62
				5750-5850	3.65
				5925-6425	4.74
				6425-6525	3.39
				6525-6875	3.58
				6875-7125	3.56
	ZTX-RH5-WI FI1-V02 (WIFI1)	ZTX	PCB	2402-2480	3.51
				5150~5250	4.67
				5250~5350	4.69
				5450-5750	4.61
				5750-5850	4.61
				5925-6425	4.74
				6425-6525	4.31
				6525-6875	4.08
				6875-7125	4.04
	ZTX-RH5-BT-V02	ZTX	PCB	2402-2480	3.06

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Entry Name	Antenna Model	Manufacture	Antenna Type	Frequency (MHz)	Max Gain(dBi)
YY2100C2, YY2100C3	ZTX-AHS-Ant-1#-V03 (WIFI0)	ZTX	PCB	5150~5250	3.58
				5250~5350	3.49
				5450-5750	3.71
				5750-5850	3.68
				5925-6425	3.90
				6425-6525	3.90
				6525-6875	3.58
				6875-7125	3.53
	ZTX-AHS-Ant-3#-V02 (WIFI0)	ZTX	PCB	5150~5250	3.11
				5250~5350	3.15
				5450-5750	3.55
				5750-5850	3.60
				5925-6425	3.83
				6425-6525	3.32
				6525-6875	3.27
				6875-7125	3.13

Entry Name	Antenna Model	Manufacture	Antenna Type	Frequency (MHz)	Max Gain(dBi)
YY2103C	ZTX-SWH3-WIFI-0-V04 (WIFI0)	ZTX	PCB	2402-2480	2.69
				5150~5250	3.28
				5250~5350	3.89
				5450-5750	3.95
				5750-5850	3.95
				5925-6425	3.85
				6425-6525	3.76
				6525-6875	3.28
				6875-7125	3.78
	ZTX-SWH3-WIFI-1-V02 (WIFI1)	ZTX	PCB	2402-2480	2.86
				5150~5250	3.27
				5250~5350	3.85
				5450-5750	3.98
				5750-5850	3.29
				5925-6425	3.99
				6425-6525	3.96
				6525-6875	3.96
				6875-7125	3.90
	ZTX-SWH3-BT-V04	ZTX	PCB	2402-2480	2.99

Entry Name	Antenna Model	Manufacture	Antenna Type	Frequency (MHz)	Max Gain(dBi)
YY2102C	ZTX-SWH5-WIFI-0-V02 (WIFI0)	ZTX	PCB	2402-2480	2.81
				5150~5250	1.98
				5250~5350	3.01
				5450-5750	2.85
				5750-5850	1.75
				5925-6425	3.02
				6425-6525	3.21
				6525-6875	3.32
				6875-7125	3.24
	ZTX-SWH5-WIFI-1-V02 (WIFI1)	ZTX	PCB	2402-2480	2.98
				5150~5250	3.88
				5250~5350	3.86
				5450-5750	4.01
				5750-5850	4.56
				5925-6425	4.30
				6425-6525	2.76
				6525-6875	2.73
				6875-7125	2.86
	ZTX-SWH5-BT-V01	ZTX	PCB	2402-2480	2.94

According to KDB 662911 D01 d) i), transmit signals are completely uncorrelated, then

Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2 / N_{ANT}]$ dBi

Note 1. 2.4G: Directional gain =

2400~2500MHz: Directional gain = $10 \log[(10^{3.47/20} + 10^{3.51/20})^2 / 2] = 6.5$ dBi

Note 2. 5G: Directional gain =

5150~5350MHz: $= 10 \log[(10^{4.75/20} + 10^{4.67/20})^2 / 2] = 7.72$ dBi

Note 3. UNII Band (WLAN 6G):

UNII Band 5: Directional gain = $10 \log[(10^{4.74/10} + 10^{4.74/10})^2 / 2] = 7.75$ dBi

UNII Band 6: Directional gain = $10 \log[(10^{4.42/10} + 10^{3.73/10})^2 / 2] = 7.09$ dBi

UNII Band 7: Directional gain = $10 \log[(10^{4.48/10} + 10^{3.78/10})^2 / 2] = 7.15$ dBi

UNII Band 8: Directional gain = $10 \log[(10^{4.48/10} + 10^{4.29/10})^2 / 2] = 7.40$ dBi

Remark: The EUT supports multiple antenna configurations for WXT2HM2001 module (WiFi 2.4GHz/5GHz/6GHz and BT).

For FCC testing, all antenna configurations were evaluated, and the antenna with the worst-case performance was selected for final measurements to represent the compliance results.

Therefore, only the worst-case antenna configuration was reported in this test report.

3.6. EUT Specifications Assessed in Current Report

Mode	Fundamental Range (MHz)	Channel Number	Modulation	Data Rate (Mbps)
802.11b	2412-2463	11	DSSS (DBPSK/DQPSK/CCK)	Up to 11
802.11g		11	OFDM (BPSK/QPSK/16QAM/64QAM)	Up to 54
802.11n-HT20				Up to 144.4
802.11n-HT40	2422-2452	7	OFDM (BPSK/QPSK/16QAM/64QAM)	Up to 300
802.11ax-HE20	2412-2463	11	OFDMA (BPSK/ QPSK/ 16QAM/ 64QAM/ 256QAM/1024QAM)	Up to 287
802.11ax-HE40	2422-2452	7		Up to 574
BLE	2402-2480	40	GFSK (1Mbps, 2Mbps)	Up to 2

Channel List			
802.11 b/g/n-HT20/ax-HE20		802.11n-HT40/ax-HE40	
Channel Number	Frequency (MHz)	Channel Number	Frequency (MHz)
1	2412	3	2422
2	2417	4	2427
3	2422	5	2432
4	2427	6	2437
5	2432	7	2442
6	2437	8	2447
7	2442	9	2452
8	2447		
9	2452		
10	2457		
11	2462		

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Channel List							
BLE							
Channel Number	Frequency (MHz)	Channel Number	Frequency (MHz)	Channel Number	Frequency (MHz)	Channel Number	Frequency (MHz)
0	2402	10	2422	20	2442	30	2462
1	2404	11	2424	21	2444	31	2464
2	2406	12	2426	22	2446	32	2466
3	2408	13	2428	23	2448	33	2468
4	2410	14	2430	24	2450	34	2470
5	2412	15	2432	25	2452	35	2472
6	2414	16	2434	26	2454	36	2474
7	2416	17	2436	27	2456	37	2476
8	2418	18	2438	28	2458	38	2478
9	2420	19	2440	29	2460	39	2480

3.7. Descriptions of Key Components

None

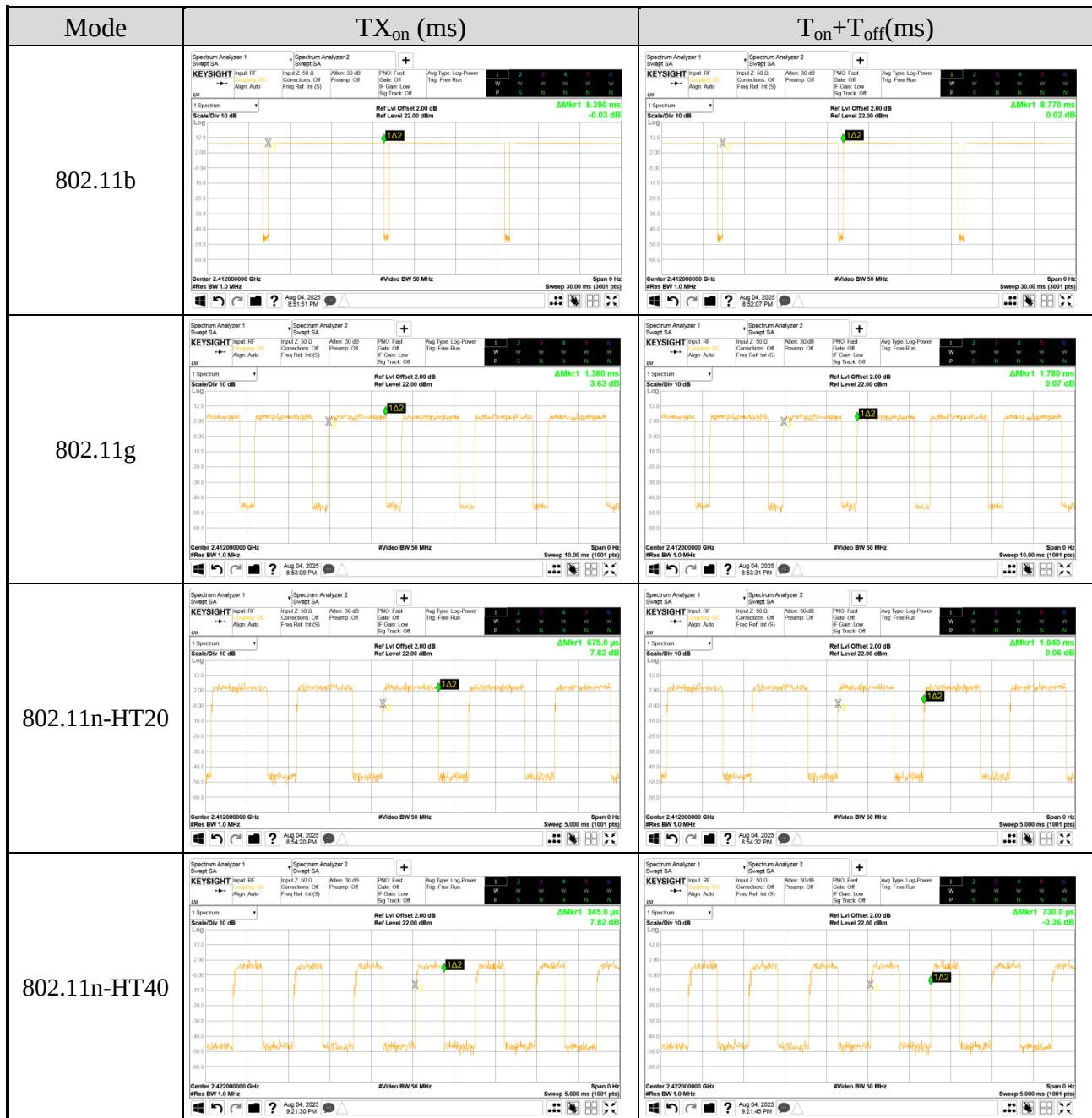
3.8. Test Configuration

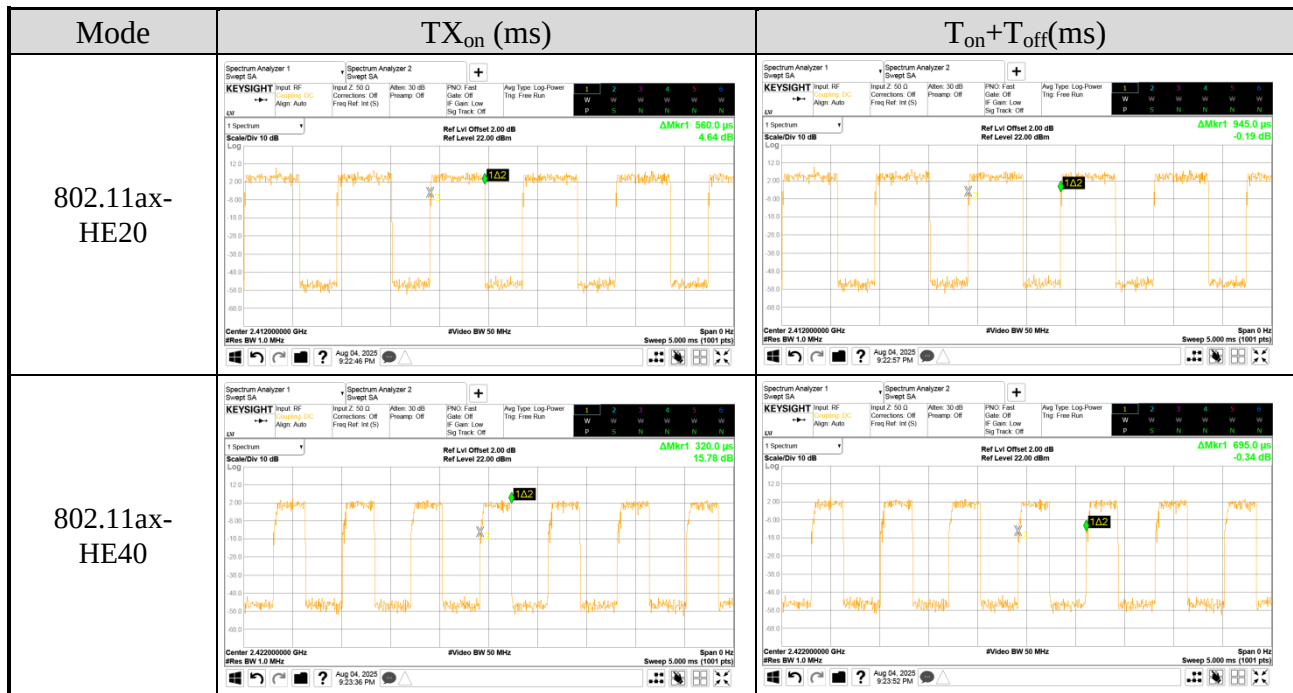
Mode	TX _{on} (ms)	TX _{on+off} (ms)	Duty Cycle (x)	Duty Cycle Factor [10log(1/x)] (dB)
802.11b	8.390	8.770	0.957	0.191
802.11g	1.380	1.780	0.775	1.107
802.11n-HT20	0.675	1.040	0.649	1.878
802.11n-HT40	0.345	0.730	0.473	3.251
802.11ax-HE20	0.560	0.945	0.593	2.269
802.11ax-HE40	0.320	0.695	0.460	3.372
802.11ax-HE20 (RU Config 26)	1.540	1.900	0.811	0.910
802.11ax-HE20 (RU Config 52)	1.490	1.850	0.805	0.942
802.11ax-HE20 (RU Config 106)	2.680	3.080	0.870	0.605
802.11ax-HE40 (RU Config 242)	2.330	2.810	0.829	0.814

Note: When duty cycle is less than 98% (0.98) that duty cycle factor 10log(1/x) is needed to add in conducted test items measured in average detector.

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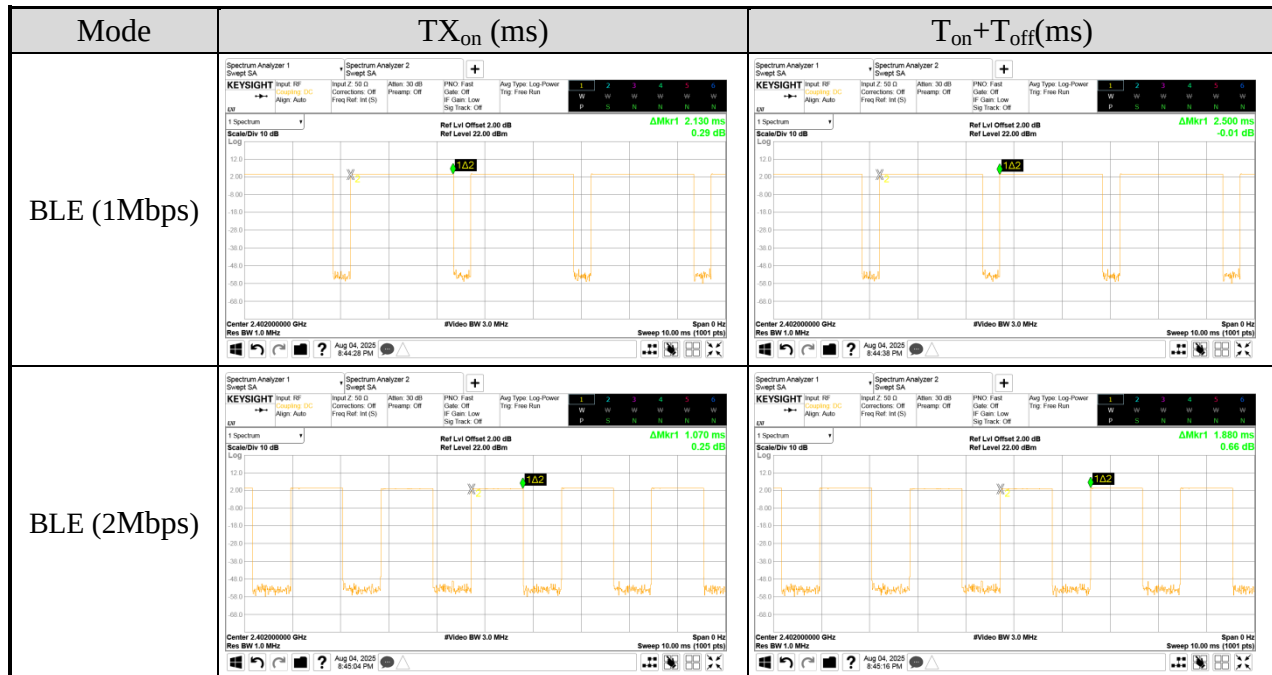
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Mode	TX _{on} (ms)	TX _{on+off} (ms)	Duty Cycle (x)	Duty Cycle Factor [10log(1/x)] (dB)
BLE (1Mbps)	2.130	2.500	0.852	0.696
BLE (2Mbps)	1.070	1.880	0.569	2.449

Note: When duty cycle is less than 98% (0.98) that duty cycle factor 10log(1/x) is needed to add in conducted test items measured in average detector.



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Item		Entry Name Note5	Mode	RU Tone	Data Rate	Test Channel
Radiated Test Case	Radiated Spurious Emission (30MHz~1GHz)	YY2100C1	802.11n-HT40	---	MCS8	9
			BLE		1Mbps	0
Radiated Test Case	Radiated Band Edge	YY2100C1	802.11b	---	1Mbps	1/11
			802.11g	---	6Mbps	1/11
			802.11n-HT20	---	MCS8	1/11
			802.11n-HT40	---	MCS8	3/9
			802.11ax-HE20	---	MCS0	1/11
			802.11ax-HE40	---	MCS0	3/9
			802.11ax-HE20	26/0	MCS0	1
				52/37	MCS0	1
				106/53	MCS0	1
				26/8	MCS0	11
				52/40	MCS0	11
				106/54	MCS0	11
			802.11ax-HE40	242/61	MCS0	3
				242/62	MCS0	9
			BLE		1Mbps	0/39
					2Mbps	0/39
	Radiated Spurious Emission	YY2100C1	802.11b	---	1Mbps	11
			802.11g	---	6Mbps	11
			802.11n-HT20	---	MCS8	11
			802.11n-HT40	---	MCS8	9
			802.11ax-HE20	---	MCS0	11
			802.11ax-HE40	---	MCS0	3
			BLE		1Mbps	0/17/39
					2Mbps	0/17/39

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Item		Entry Name Note5	Mode	RU Tone	RU Tone	Test Channel
Conducted Test Case	Peak Output Power	YY2100C1	802.11b	---	1Mbps	1/6/11
			802.11g	---	6Mbps	1/6/11
			802.11n-HT20	---	MCS8	1/6/11
			802.11n-HT40	---	MCS8	3/6/9
			802.11ax-HE20	---	MCS0	1/6/11
			802.11ax-HE40	---	MCS0	3/6/9
			802.11ax-HE20	26/0	MCS0	1
				52/37	MCS0	1
				106/53	MCS0	1
				26/8	MCS0	11
				52/40	MCS0	11
				106/54	MCS0	11
			802.11ax-HE40	242/61	MCS0	3
				242/62	MCS0	9
			BLE		1Mbps	0/17/39
					2Mbps	0/17/39

Note 1: ☐ Mobile Device ☒ Portable Device and 3 axis were assessed. The worst scenario for Radiated Spurious Emission as follow: ☒ Lie ☐ Side ☐ Stand

Note 2: Low, mid, and high channels were measured, only the worst channel of each modulation was presented in this report.

Note 3: The modulation and bandwidth are similar for 802.11n mode for HT20/HT40 and 802.11ac mode for VHT20/VHT40, therefore investigated worst case to representative mode in the test report.

Note 4: The data rates were selected based on preliminary testing that identified rate as the worst case for output power.

Note 5: According to the antenna information provided by the manufacturer, there are six antennas with same type for the application. According to KDB 178919 guidelines, select the antenna with the highest antenna gain for testing.

Note 6: According to the manufacturer's declaration, the Master mode uses the same power settings as the Client mode. Therefore, all the test items remain the same

3.9. Output Power Setting

Mode					
802.11b			802.11g		
Power Setting			Power Setting		
Centre Frequency (MHz)	AUX	Main	Centre Frequency (MHz)	AUX	Main
2412	11.000	11.000	2412	11.000	11.000
2437	11.000	11.000	2437	11.000	11.000
2462	11.000	11.000	2462	11.000	11.000

Mode					
802.11n-HT20			802.11ax-HE20		
Power Setting			Power Setting		
Centre Frequency (MHz)	AUX	Main	Centre Frequency (MHz)	AUX	Main
2412	11.000	11.000	2412	11.000	11.000
2437	11.000	11.000	2437	11.000	11.000
2462	11.000	11.000	2462	11.000	11.000

Mode					
802.11n-HT40			802.11ax-HE40		
Power Setting			Power Setting		
Centre Frequency (MHz)	AUX	Main	Centre Frequency (MHz)	AUX	Main
2422	11.000	11.000	2422	11.000	11.000
2437	11.000	11.000	2437	11.000	11.000
2452	11.000	11.000	2452	10.000	10.000

Centre Frequency (MHz)	Mode	
	BLE	
	1Mbps	2Mbps
	Power Setting	Power Setting
2402	Default	Default
2440	Default	Default
2480	Default	Default

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Mode	RU Configuration	Centre Frequency (MHz)	Power Setting	
			AUX	Main
802.11ax-HE20	26/0	2412	12.000	12.000
	52/37		12.000	12.000
	106/53		12.000	12.000
	26/8	2462	12.000	12.000
	52/40		12.000	12.000
	106/54		12.000	12.000
802.11ax-HE40	242/61	2422	11.000	11.000
	242/62	2452	12.000	12.000

3.10. Tested Supporting System List

3.10.1. Support Peripheral Unit

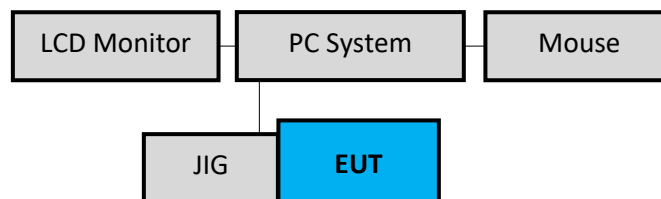
No.	Product	Brand	Model No.	Serial No.	Approval
1.	LCD Monitor	lenovo	D17195HE3	N/A	N/A
2.	PC System	lenovo	B4550-B031	N/A	N/A
3.	USB Mouse	N/A	N/A	N/A	N/A
4.	JIG	N/A	N/A	N/A	N/A

3.10.2. Cable Lists

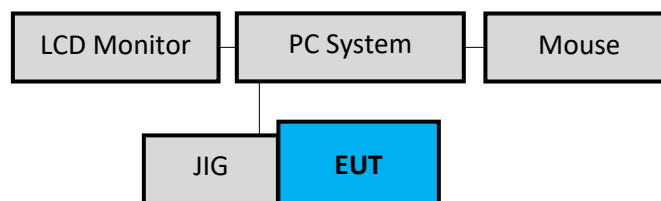
No.	Cable Description Of The Above Support Units
1.	DVI Cable: Shielded, Detachable, 1.5m AC Power Cord: Unshielded, Detachable, 1.8m
2.	USB Cable: Unshielded, Undetachable, 1.8 m
3.	Bus Cable: Unshielded, Undetachable, 0.5m

3.11. Setup Configuration

3.11.1. EUT Configuration for Radiated Emission



3.11.2. EUT Configuration for RF Conducted Test Items



3.12. Operating Condition of EUT

Test program “QA Tool” is used for enabling EUT WLAN function and test program “WCN_Combo_Tool” is used for enabling EUT BT function under continues transmitting and choosing data rate/ channel.

3.13. Description of Test Facility

Name of Test Firm	Audix Technology Corporation / EMC Department No. 491, Zhongfu Rd., Linkou Dist., New Taipei City 244, Taiwan Tel: +886-2-26092133 Fax: +886-2-26099303 Website : www.audixtech.com Contact e-mail: attemc_report@audixtech.com
Accreditations	The laboratory is accredited by following organizations under ISO/IEC 17025:2017 (1) NVLAP(USA) NVLAP Lab Code 200077-0 (2) TAF(Taiwan) No. 1724
Test Facilities	FCC OET Designation Number under APEC MRA by NCC is : TW1724 ISED CAB Identifier Number under APEC TEL MRA by NCC is TW1724 (1) No.1 3m Semi Anechoic Chamber

3.14.Measurement Uncertainty

The measurement uncertainty levels have been estimated as specified in ETSI TR 100 028-2001

Test Items/Facilities			Frequency Range	Uncertainty
Conduction Test	☐	No. 7 Shielded Room	9kHz-150kHz	±3.7dB
			150kHz-30MHz	±3.4dB
	☐	No. 8 Shielded Room	9kHz-150kHz	±3.7dB
			150kHz-30MHz	±3.4dB
Radiation Test	☒	No.1 3m Semi Anechoic Chamber	30MHz-200MHz, 3m, Horizontal	±4.0dB
			200MHz-1000MHz, 3m, Horizontal	±4.0dB
			30MHz-200MHz, 3m, Vertical	±4.8dB
			200MHz-1000MHz, 3m, Vertical	±4.5dB
			1GHz-6GHz, 3m	±4.2dB
			6GHz-18GHz, 3m	±4.0dB
	☐	No.3 3m Semi Anechoic Chamber	30MHz-200MHz, 3m, Horizontal	±3.9dB
			200MHz-1000MHz, 3m, Horizontal	±3.9dB
			30MHz-200MHz, 3m, Vertical	±4.6dB
			200MHz-1000MHz, 3m, Vertical	±4.3dB
			1GHz-6GHz, 3m	±4.6dB
			6GHz-18GHz, 3m	±4.1dB
	☐	No.4 3m Semi Anechoic Chamber	30MHz-200MHz, 3m, Horizontal	±4.4dB
			200MHz-1000MHz, 3m, Horizontal	±4.2dB
			30MHz-200MHz, 3m, Vertical	±4.9dB
			200MHz-1000MHz, 3m, Vertical	±5.1dB
			1GHz-6GHz, 3m	±4.4dB
			6GHz-18GHz, 3m	±4.0dB
	☐	No.5 3m Semi Anechoic Chamber	30MHz-200MHz, 3m, Horizontal	±4.2dB
			200MHz-1000MHz, 3m, Horizontal	±4.1dB
			30MHz-200MHz, 3m, Vertical	±4.9dB
			200MHz-1000MHz, 3m, Vertical	±4.6dB
			1GHz-6GHz, 3m	±4.4dB
			6GHz-18GHz, 3m	±4.0dB
	Radiated emissions (18GHz-40GHz)		18GHz-40GHz, 3m	±3.6dB

Remark : Uncertainty = $k_{uc}(y)$

Test Item	Uncertainty
Maximum peak output power	± 0.8dB

4. MEASUREMENT EQUIPMENT LIST

4.1. Radiated Emission Measurement

Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Interval
1.	Spectrum Analyzer	Keysight	N9030B	MY61330403	2024.12.18	1 Year
2.		Agilent	N9010A-526	MY53400071	2025.08.07	1 Year
3.	Test Receiver	R&S	ESCS30	100338	2025.06.14	1 Year
4.	Amplifier	HP	8447D	2944A06305	2024.12.16	1 Year
5.	Microwave Preamplifier	HP	8449B	3008A01284	2025.07.07	1 Year
6.	Microwave Amplifier	Keysight	83051A	MY56480113	2024.09.11	1 Year
7.	Loop antenna	TESEQ	HLA 6121	60478	2025.06.05	1 Year
8.	Bilog Antenna	TESEQ	CBL6112D	33821	2025.02.08	1 Year
9.	Horn Antenna	EMCO	3115	9112-3775	2025.05.06	1 Year
10.	Horn Antenna	COM-POWER	AH-840	101092	2025.01.09	1 Year
11.	2.4GHz Notch Filter	K&L Microwave	7NSL10-2441.5/E 130.5-O/O	1	2025.04.10	1 Year
12.	High-Pass Filter	Microwave	H3G018G1	484796	2025.04.10	1 Year
13.	Coaxial Cable	MIYAZAKI	5D2W	RE-11	2025.01.03	1 Year
14.	Coaxial Cable	HUBER+SUHNER	RG223/U	RE-33	2025.06.10	1 Year
15.	Coaxial Cable	HUBER+SUHNER	SUCOFLEX 106	RE-14	2025.01.03	1 Year
16.	Coaxial Cable	HUBER+SUHNER	SUCOFLEX 102	RE-30	2025.08.19	1 Year
17.	Digital Thermo-Hygro Meter	iMax	HTC-1	No.1 3m A/C	2025.04.09	1 Year
18.	Test Software	Audix	e3	V9 18621a	N.C.R.	N.C.R.

4.2. RF Conducted Measurement

Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Interval
1.	Spectrum Analyzer	Keysight	N9010B	MY59071380	2025.03.28	1 Year
2.	Power Meter	Anritsu	ML2495A	2127005	2024.11.19	1 Year
3.	Power Meter	Anritsu	ML2495A	2127004	2024.11.30	1 Year
4.	Power Sensor	Anritsu	MA2411B	1911360	2024.11.30	1 Year
5.	Power Sensor	Anritsu	MA2411B	1911356	2024.11.19	1 Year
6.	Digital Thermo-Hygro Meter	iMax	HTC-1	RF-03	2025.04.09	1 Year
7.	Coaxial Cable	woken	18GHz Stainless SMA(M)-SMA(M)) for 100cm SS402 Cable Assembly	20241206-1	2025.03.21	1 Year

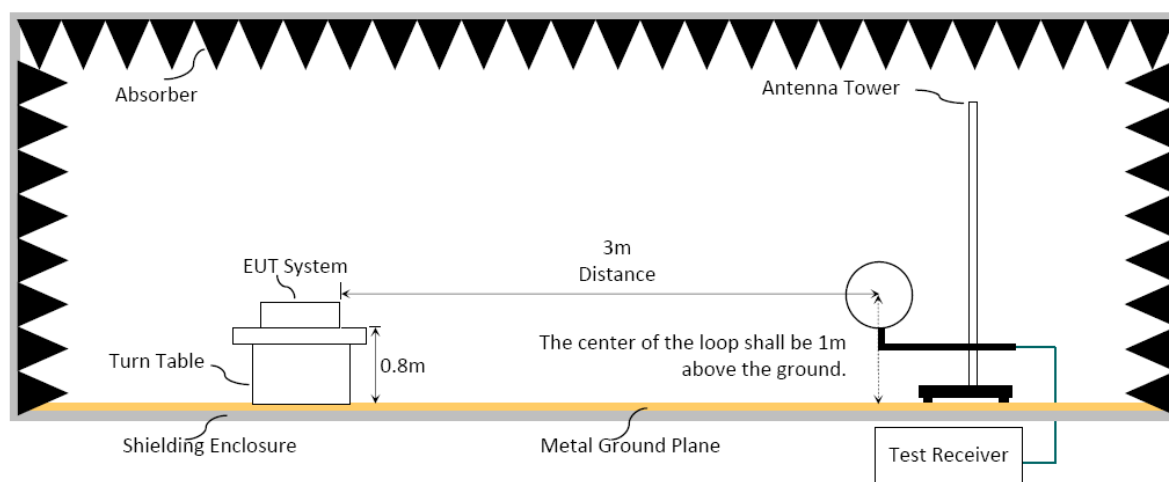
5. RADIATED EMISSION

5.1. Block Diagram of Test Setup

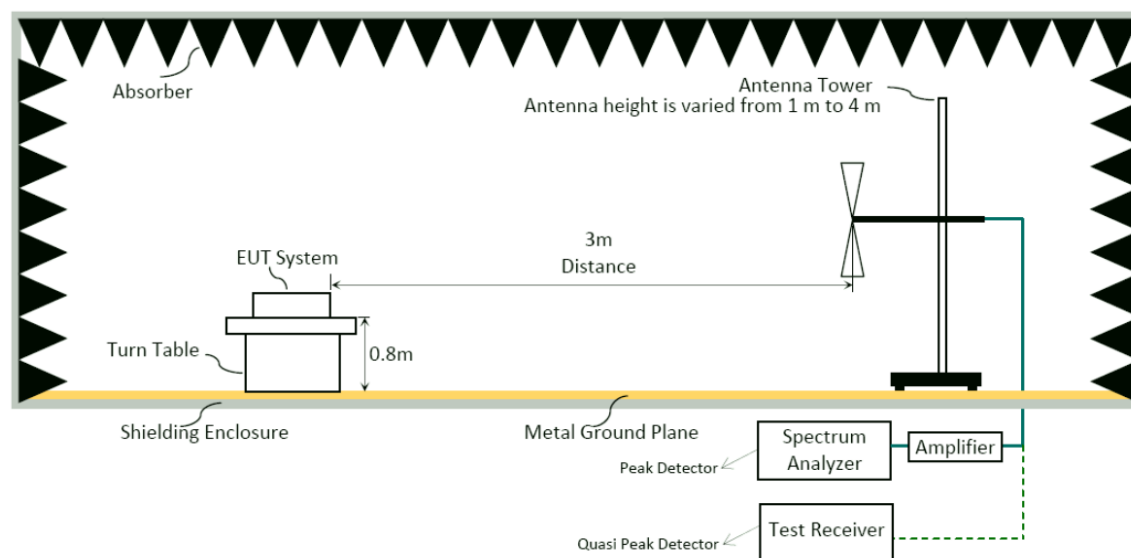
5.1.1. Block Diagram of EUT

Indicated as section 3.11

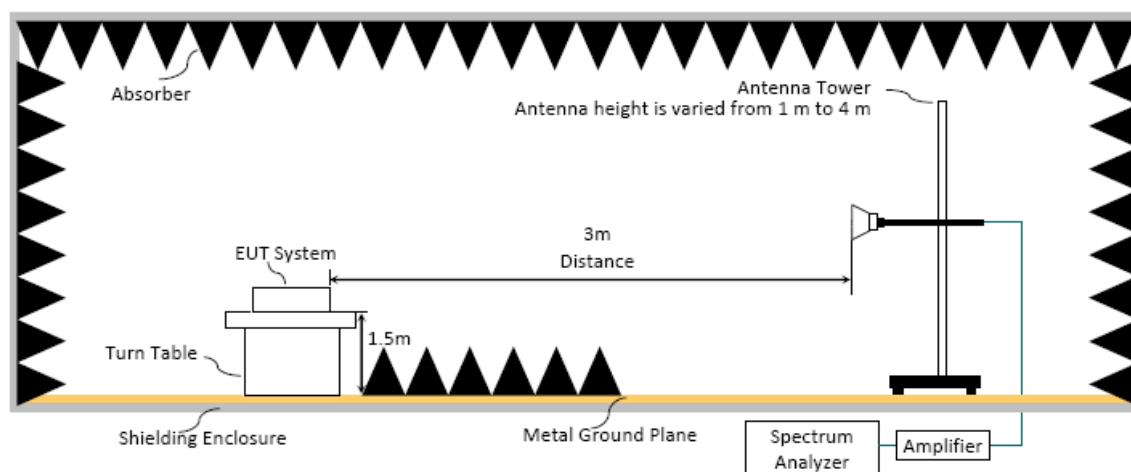
5.1.2. Setup Diagram for 9kHz-30MHz



5.1.3. Setup Diagram for 30-1000MHz



5.1.4. Setup Diagram for above 1GHz



5.2. Radiated Emission Limits

In any 100kHz bandwidth outside the frequency band, the radio frequency power produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level. In addition, radiated emissions which fall in restricted bands, as defined in Section 15.205/RSS-Gen Section 8.10 table 6, must also comply with the radiated emission limits specified as below.

Frequency (MHz)	Distance(m)	Limits	
		dBμV/m	μV/m
0.009 - 0.490	300	67.6-20 log f(kHz)	2400/f kHz
0.490 - 1.705	30	87.6-20 log f(kHz)	24000/f kHz
1.705 - 30	30	29.5	30
30 - 88	3	40.0	100
88- 216	3	43.5	150
216- 960	3	46.0	200
Above 960	3	54.0	500
Above 1000	3	74.0 dBμV/m (Peak) 54.0 dBμV/m (Average)	

Remark : (1) $\text{dB}\mu\text{V/m} = 20 \log (\mu\text{V/m})$

- (2) The tighter limit applies to the edge between two frequency bands.
- (3) Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.
- (4) Fundamental and emission fall within operation band are exempted from this section.
- (5) Pursuant to ANSI C63.10: 6.6.4.3, if the maximized peak measured value complies with the average limit, then it is unnecessary to perform an average measurement.

5.3. Test Procedure

Frequency Range 9kHz~30MHz:

The EUT setup on the turntable which has 0.8 m height to the ground. The turn table rotated 360 degrees and antenna fixed to 1 m to find the maximum emission level. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10-2020 & ANSI C63.10-2020 + Cor.1-2023 regulation.

- (1) RBW = 9kHz with peak and average detector.
- (2) Detector: average and peak (9kHz-490kHz)
Q.P. (490kHz-30MHz)

Frequency Range 30MHz ~ 25GHz:

The EUT setup on the turn table which has 80cm (for 30-1000MHz) and 1.5m (for above 1GHz) height to the ground. The turn table rotated 360 degrees and antenna varied from 1 m to 4 m to find the maximum emission level. Both horizontal and vertical polarization are required. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10-2020 & ANSI C63.10-2020 + Cor.1-2023 regulation.

Frequency below 1GHz:

Spectrum Analyzer is used for pre-testing with following setting:

- (1) RBW = 120KHz
- (2) VBW $\geq 3 \times$ RBW.
- (3) Detector = Peak.
- (4) Sweep time = auto.
- (5) Trace mode = max hold.
- (6) Allow sweeps to continue until the trace stabilizes.

Note 1: When peak-detected value is lower than limit that the measurement using the Q.P. detector is not required, otherwise using Q.P. for final measurement.

Note 2: When the radiated emissions limits are expressed in terms of the average value of the emissions, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds.

Frequency above 1GHz to 10th harmonic (up to 25 GHz):

Peak Detector:

- (1) RBW = 1MHz
- (2) VBW $\geq 3 \times$ RBW.
- (3) Detector = Peak.
- (4) Sweep time = auto.
- (5) Trace mode = max hold.
- (6) Allow sweeps to continue until the trace stabilizes.

Note: When peak-detected value is lower than limit that the measurement using the average detector is not required, otherwise using average detector for final measurement.

Average Detector:

■ Option 1:

(1)RBW = 1MHz

(2)VBW $\geq 1/ T$. (Duty Cycle $< 98\%$, when duty cycle presented in section 3.8)

Modulation Type	VBW Setting
802.11b	120Hz
802.11g	750Hz
802.11n-HT20	1.5kHz
802.11n-HT40	3kHz
802.11ax-HE20	1.8kHz
802.11ax-HE40	3.3kHz
802.11ax-HE20 (RU Config 26)	680Hz
802.11ax-HE20 (RU Config 52)	680Hz
802.11ax-HE20 (RU Config 106)	390Hz
802.11ax-HE40 (RU Config 242)	430Hz
Modulation Type	VBW Setting (VBW $\geq 1/ T$)
BLE (1Mbps)	470Hz
BLE (2Mbps)	1kHz

(3)VBW = 10Hz (Duty Cycle $\geq 98\%$, when duty cycle presented in section 3.8)

(4)Detector = Peak.

(5)Sweep time = auto.

(6)Trace mode = max hold.

(7)Allow sweeps to continue until the trace stabilizes.

□ Option 2:

Average Emission Level= Peak Emission Level+ D.C.C.F.

5.4. Measurement Result Explanation

■ Peak Emission Level(dB μ V/m)=Antenna Factor(dB/m) + Cable Loss (dB)– Preamp Gain (dB)+ Reading(dB μ V).

■ Average Emission Level(dB μ V/m)= Antenna Factor(dB/m) + Cable Loss (dB)– Preamp Gain (dB)+ Reading(dB μ V).

□ Average Emission Level(dB μ V/m)= Peak Emission Level(dB μ V/m)+ DCCF(dB)
Duty Cycle Correction Factor (DCCF)(dB)= $20\log(TX_{on}/TX_{on+off})$ presented in section 3.8.

□ ERP(dBm)= Peak Emission Level(dB μ V/m) -95.2dB-2.14dB

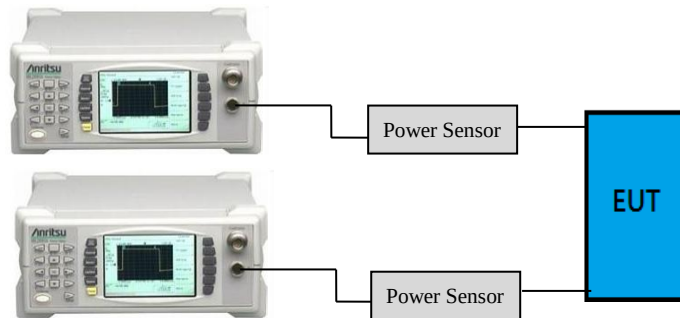
5.5. Test Results

Please refer to Appendix A.

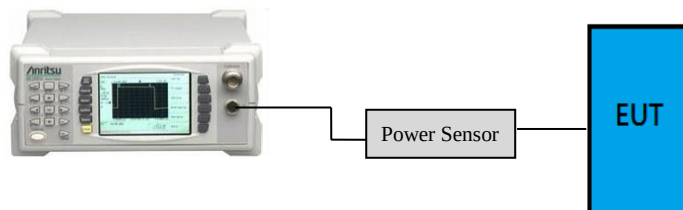
6. MAXIMUM PEAK OUTPUT POWER

6.1. Block Diagram of Test Setup

- For WLAN Function



- For BLE Function



6.2. Specification Limits

The Limits of maximum Peak Output Power for digital modulation in 2400-2483.5MHz is : 1Watt. (30dBm), and E.I.R.P.: 4Watt (36dBm)

6.3. Test Procedure

Following measurement procedure is reference to ANSI C63.10-2020 & ANSI C63.10-2020 + Cor.1-2023:

☒ **PKPM1 Peak power meter method:**

EUT is connected to power sensor and record the maximum output power.

☐ **Maximum peak conducted output power method:**

- (1) Set the RBW $\geq$ DTS bandwidth
- (2) Set VBW $\geq 3 \times$ RBW
- (3) Set span $\geq 3 \times$ RBW.
- (4) Sweep time = auto couple
- (5) Detector = peak.
- (6) Trace mode = max hold.
- (7) Allow trace to fully stabilize.
- (8) Use peak marker function to determine the peak amplitude level.

☒ **Method AVGPM (Measurement using an RF average power meter):**

EUT is connected to power sensor and record the maximum average output power and duty cycle factor is added when duty cycle presented in section 3.8 is $< 98\%$.

☐ **Method AVGSA-2 (Spectrum channel power)**

- (1) Set span to at least 1.5 times the OBW
- (2) Set RBW = 1 -5% of OBW
- (3) Set the video bandwidth (VBW) $\geq 3 \times$ RBW.
- (4) Detector = RMS.
- (5) Trace mode = trace average at least 100 traces
- (6) Sweep = auto couple.
- (7) Compute power by integrating the spectrum across the OBW of the signal using the instrument's band power measurement function with band limits set equal to the OBW band edges.
- (8) Duty cycle factor is added when duty cycle presented in section 3.8 is $< 98\%$.

6.4. Test Results

Please refer to Appendix A



7. DEVIATION TO TEST SPECIFICATIONS

【NONE】



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APPDNDIX A

TEST DATA AND PLOTS

(Model: WXT2HM2001)



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APPENDIX B

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APPDNDIX B

TEST PHOTOGRAPHS

(Model: WXT2HM2001)