

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

for

LG Electronics Inc.

**222, LG-ro, Jinwi-myeon Pyeongtaek-Si, Gyeonggi-Do,
17709 Republic of Korea**

Product Name : Notebook Computer
Model Name : (1)16Z90Q (2)16ZB90Q
(3)16ZD90Q (4)16ZG90Q
Brand LG
FCC ID : BEJNT-16Z90Q
IC : 2703H-16Z90Q

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 : LG Electronics Inc.
Manufacturer : LG Electronics Inc.
Factory : LG Electronics Nanjing New Technology Co., Ltd.
EUT Description
(1) Product : Notebook Computer
(2) Model : (1)16Z90Q (2)16ZB90Q (3)16ZD90Q (4)16ZG90Q
(3) Brand : LG
(4) Power Supply: DC 20V, 3.25A

Applicable Standards:

Title 47 CFR FCC Part 15 Subpart C
RSS-Gen (Issue 5), Amendment 2, February 2021
RSS-247 (Issue 2), February 2017

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.

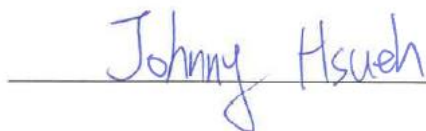
Date of Report: 2022. 06. 23

Reviewed by:



(Annie Yu/Administrator)

Approved by:



(Johnny Hsueh/Section Manager)



Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City 244, Taiwan

Tel: +886 2 26099301
Fax: +886 2 26099303

1. REVISION RECORD OF TEST REPORT

Edition No	Issued Date	Revision Summary	Report Number
0	2022. 06. 13	Original Report	EM-F220376
A	2022. 06. 23	To revise output power test data.	EM-F220376

2. SUMMARY OF TEST RESULTS

Rule		Description	Results
FCC	IC		
15.207	RSS-Gen §8.8	Conducted Emission	PASS
15.247(d)/ 15.205	RSS-Gen §8.9 RSS-247 §5.5	Radiated Band Edge and Radiated Spurious Emission	N/A, NOTE 2/3
15.247(a)(2)	RSS-247 §5.2(1)	DTS/Occupied Bandwidth	N/A, NOTE 2
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, NOTE 2
15.247 (e)	RSS-247 §5.2(2)	Peak Power Spectral Density	N/A, NOTE 2
15.203	---	Antenna Requirement	Compliance
Note: 1. The uncertainties value is not used in determining the result. 2. To add new Configuration with new components is not influence on this item 3. Due to the above difference, it is unnecessary to test Radiated Band Edge.			

3. GENERAL INFORMATION

3.1. Description of Application

Applicant	LG Electronics Inc. 222, LG-ro, Jinwi-myeon Pyeongtaek-Si, Gyeonggi-Do, 17709 Republic of Korea
Manufacturer	LG Electronics Inc. 222, LG-ro, Jinwi-myeon Pyeongtaek-Si, Gyeonggi-Do, 17709 Republic of Korea
Factory	LG Electronics Nanjing New Technology Co., Ltd. No.346, Yaoxin Road, Economic & Technical Development Zone, Nanjing, China.
Product	Notebook Computer
Model	(1)16Z90Q (2)16ZB90Q (3)16ZD90Q (4)16ZG90Q The difference between all models is different in the sales customers.
Configuration (HVIN)	16Z90Q-K, 16Z90Q-N, 16Z90Q-A, 16Z90Q-R The difference please refer to the following.
Brand	LG

The difference list for Configuration (HVIN):

Difference Configuration (HVIN)	Main Board	GPU	TPM (Trusted Platform Module)
16Z90Q-K	Queen MAIN B/D PCB	Intel Iris Xe UHD Graphics	Not Support
16Z90Q-N	Queen MAIN B/D PCB	Intel Iris Xe UHD Graphics	Support
16Z90Q-A	QUEEN NVIDIA MAIN B/D PCB	NVIDIA RTX2050	Not Support
16Z90Q-R	QUEEN NVIDIA MAIN B/D PCB	NVIDIA RTX2050	Support

3.2. Description of EUT

Test Model	16Z90Q		
Serial Number	N/A		
Power Rating	DC 20V, 3.25A		
Software Version	XY (X, Y can be 0 to 9 for different SW version not influence RF parameter)		
RF Features	WLAN:802.11 a/b/g/n/ac/ax Bluetooth: BT and BLE (BT 5.1)		
Transmit Type	2.4 GHz		
	802.11b	1T1R	
	802.11g	1T1R	
	802.11n-HT20	2T2R	
	802.11n-HT40	2T2R	
	802.11ax-HE20	2T2R	
	802.11ax-HE40	2T2R	
	BT/BLE	1T1R	
	U-NII Bands		
	802.11a	1T1R	
	802.11n-HT20/802.11ac-VHT20/802.11ax-HE20	2T2R	
	802.11n-HT40/802.11ac-VHT40/802.11ax-HE40	2T2R	
	802.11ac-VHT80/802.11ax-HE80	2T2R	
	802.11ac-VHT160/802.11ax-HE160	2T2R	
	The MIMO is uncorrelated and supported SDM mode only.		
Test Sample	Sample No.	Test Item	Firmware
	03	AC Conduction,	N/A
	04	AC Conduction, RSE, RF Conducted	N/A
Sample Status	Trial sample		
Date of Receipt	2022. 03. 24		
Date of Test	2022. 05. 21 ~ 06. 22		
Interface Ports of EUT	• One HDMI Port • Two USB Type C Ports • One Earphone Port • One Micro SD Card Slot • Two USB 3.0 Ports		
Accessories Supplied	• AC Adapter • LAN Gender		

3.3. Reference Test Guidance

ANSI C63.10:2013

3.4. Information for Permissive Change

- The EUT is an addition version with original FCC ID: BEJNT-16Z90Q and IC: 2703H-16Z90Q is to add new Configuration (HVIN) and components, and the detail for component list please refer to section 3.7.1
- The differences between this application and original's ID as clarify in following list.

Difference Configuration (HVIN)		Main Board	GPU	TPM (Trusted Platform Module)
Original	16Z90Q	Queen MAIN B/D PCB	Intel Iris Xe UHD Graphics	Not Support
		Queen MAIN B/D PCB	Intel Iris Xe UHD Graphics	Support
Permissive Change	16Z90Q-K	Queen MAIN B/D PCB	Intel Iris Xe UHD Graphics	Not Support
	16Z90Q-N	Queen MAIN B/D PCB	Intel Iris Xe UHD Graphics	Support
	16Z90Q-A	QUEEN NVIDIA MAIN B/D PCB	NVIDIA RTX2050	Not Support
	16Z90Q-R	QUEEN NVIDIA MAIN B/D PCB	NVIDIA RTX2050	Support

Note: 1. The Configuration (HVIN) 16Z90Q-K and 16Z90Q-N with original components were measured in the original application.
2 The Configuration (HVIN) 16Z90Q-A and 16Z90Q-R with new components were measured in this Permissive Change application.

- 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

No.	Antenna Part Number	Manufacture	Antenna Type	Frequency (MHz)	Max Gain(dBi)	
					Main	AUX
1.	WA-P-LELE-04-009	INPAQ	Mono-Pole	2400	2.3	2.0
				2450	2.4	2.6
				2500	3.2	2.4
				5150	4.2	3.5
				5400	4.2	3.6
				5850	4.4	3.5
				5925	4.1	3.4
				6525	4.1	3.2
				7125	4.2	2.3
Note 1. 2.4G: Directional gain = 10 log[(10 ^{3.2/10} +10 ^{2.6/10})/2]= 2.91dBi Note 2. UNII Band (WLAN 5G): Directional gain = 10 log[(10 ^{4.4/10} +10 ^{3.6/10})/2]= 4.02dBi Note 3. UNII Band (WLAN 6G): Directional gain = 10 log[(10 ^{4.2/10} +10 ^{3.4/10})/2]= 3.82dBi						
2.	L1LRF008-CS-H	LUXSHARE-ICT	Mono-Pole	2400	6.3	0.9
				2450	5.7	1.6
				2500	2.7	3.5
				5150	-1.5	2.3
				5400	3.4	4.5
				5850	3.3	5.8
				5925	2.9	4.7
				6525	3.4	1.3
				7125	-4.9	-1.6
Note 1. 2.4G: Directional gain = 10 log[(10 ^{6.3/10} +10 ^{3.5/10})/2]= 5.12dBi Note 2. UNII Band (WLAN 5G): Directional gain = 10 log[(10 ^{3.3/10} +10 ^{5.8/10})/2]= 4.73dBi Note 3. UNII Band (WLAN 6G): Directional gain = 10 log[(10 ^{3.4/10} +10 ^{4.7/10})/2]= 4.10dBi						

3.6. EUT Specifications Assessed in Current Report

Mode	Fundamental Range (MHz)	Channel Number	Modulation	Data Rate (Mbps)
802.11b	2412-2472	13	DSSS (DBPSK/DQPSK/CCK)	Up to 11
802.11g		13	OFDM (BPSK/QPSK/16QAM/64QAM)	Up to 54
802.11n-HT20				Up to 144.4
802.11n-HT40	2422-2462	9	OFDM (BPSK/QPSK/16QAM/64QAM)	Up to 300
802.11ax-HE20	2412-2472	13	OFDMA (BPSK/ QPSK/ 16QAM/ 64QAM/ 256QAM/1024QAM)	Up to 287
802.11ax-HE40	2422-2462	9		Up to 574
BLE	2402-2480	40	GFSK (1M, 2M, PHY Coded S8, PHY Coded S2)	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	10	2457
9	2452	11	2462
10	2457		
11	2462		
12	2467		
13	2472		

Audix Technology Corp.

No. 491, Zhongfu Rd., Linkou Dist.,

New Taipei City 244, Taiwan

Tel: +886 2 26099301**Fax: +886 2 26099303**

Channel List							
BLE							
Channel Number	Frequency (MHz)	Channel Number	Frequency (MHz)	Channel Number	Frequency (MHz)	Channel Number	Frequency (MHz)
37	2402	09	2422	18	2442	28	2462
00	2404	10	2424	19	2444	29	2464
01	2406	38	2426	20	2446	30	2466
02	2408	11	2428	21	2448	31	2468
03	2410	12	2430	22	2450	32	2470
04	2412	13	2432	23	2452	33	2472
05	2414	14	2434	24	2454	34	2474
06	2416	15	2436	25	2456	35	2476
07	2418	16	2438	26	2458	36	2478
08	2420	17	2440	27	2460	39	2480

3.7. Descriptions of Key Components

3.7.1. For the All Component Lists

Item	Supplier	Model / Type	Character
System	Microsoft	Win11 Home	---
Main Board	LG	Queen MAIN B/D PCB	Main Board (GM) Manufacturer: #1 Hannstar Board Tech(Jiang Yin) Corp.,Ltd. #2 Elec & Eltek Company (MCO) Limited.
		QUEEN NVIDIA MAIN B/D PCB	Main Board (PM)* Manufacturer: #1 Hannstar Board Tech(Jiang Yin) Corp.,Ltd. #2 Elec & Eltek Company (MCO) Limited.
WLAN SUB Board	LG	16Z90Q Sub B/D	Manufacturer: #1 Hannstar Board Tech(Jiang Yin) Corp.,Ltd. #2 Elec & Eltek Company (MCO) Limited. #3 JiangSu HuaShen Electronic co.,ltd (HXF)
CPU (Socket: BGA1744)	Intel	i7-1260P	2.5GHz
	Intel	i5-1240P	2.1GHz
16" LCD Panel	LG Display	LP160WQ1(SP)(B2)	Resolution: 2560 x 1600, 60Hz WQXGA IPS (Non Touch)
Storage (SSD)	SK hynix	HFM001TD3JX013N	1TB
		HFM512GD3JX013N	512GB
		HFM256GD3JX013N	256GB
	Samsung	MZ-VL21T00	1TB
		MZ-VL25120	512GB
		MZ-VL22560	256GB
		MZ-VL22T00	2TB*
Memory (RAM)	Samsung	---	16GB LPDDR5x(On Board)
		---	8GB LPDDR5x(On Board)
		---	32GB LPDDR5x(On Board)*
	SK Hynix	---	16GB LPDDR5x(On Board)
		---	8GB LPDDR5x(On Board)
		---	32GB LPDDR5x(On Board)*
Battery Pack	LG	LBV7227E	80Wh, DC 7.74V, 80Wh Typ 10336mAh
	LG	LBY122CM	90Wh, DC 7.76V, 90Wh Typ 11600mAh
WLAN Combo Card	Intel	AX211D2W	WLAN and BT, 2x2 PCIe M.2 1216 SD adapter card FCC ID: PD9AX211D2 IC: 1000M-AX211D2
WLAN Combo Antenna	LG (INPAQ)	WA-P-LELE-04-009	PCB, Mono-pole Type Main: Black, Aux: Gray
	LG (LUXSHARE-ICT)	L1LRF008-CS-H	PCB, Mono-pole Type Main: Black, Aux: Gray

Item	Supplier	Model / Type	Character
Keyboard	TIC	KT0120B8E	---
	LITE ON	SN8101	---
Web Camera	Chicony	CKFLF26	---
	Luxvisions	1BF225N3	---
LAN Gender (Type C to LAN)	SUZHOU MEC ELECTRONICS	80-5946-111	(White) 10/100 Megabit Ethernet
		80-5946-101	(Black) 10/100 Megabit Ethernet
		80-5946-230	(White) 10/100/1000 Megabit Ethernet
		80-5946-240	(Black) 10/100/1000 Megabit Ethernet
	Type C to LAN: Shielded, Undetached, 0.12m		
	ARIN TECH CO. LTD	GD-08MF-36-WH-LP10	(White) 10/100 Megabit Ethernet
		GD-08MF-36-BK-LP11	(Black) 10/100 Megabit Ethernet
		GD-08MF-50-WH-LP12	(White) 10/100/1000 Megabit Ethernet
		GD-08MF-50-BK-LP13	(Black) 10/100/1000 Megabit Ethernet
	Type C to LAN: Shielded, Undetached, 0.12m		
AC Adapter (65W)	LG (HONOR)	ADT-65DSU-D03-2	I/P: AC 100-240V, 1.6A, 50-60Hz O/P: DC 20V, 3.25A
	DC Power Cord: Non-Shielded, Undetached, 1.5m		
	AC Power Cord: Non-Shielded, Detached, 1.0m (2C) (For Other Countries)		
	AC Power Cord: Non-Shielded, Detached, 1.55m (2C) (For US, Canada, Mexico)		
Note: “*” Standing for adding new configuration.			

Remark: For more detailed features description, please refer to the manufacturer’s specifications or the user manual.

3.7.2. The EUT collocates with the original worst mode and new components, which are used to establish a basic configuration of system during test:

SKU (Mode)		1	2
Main Board	LG, QUEEN NVIDIA MAIN B/D PCB (w/ TPM)	V	
	LG, QUEEN NVIDIA MAIN B/D PCB (w/o TPM)		V
SUB Board	LG, 16Z90Q Sub B/D (Type A)	V	V
CPU	Intel, i7-1260P	V	V
16” LCD Panel	LG Display, LP160WQ1(SP)(B2)	V	V
Storage (SSD)	Samsung, 2TB	V	V
	SK hynix, 1TB	V	V
Memory (RAM)	32GB	V	V
Battery Pack	LG, 90Wh	V	V
Keyboard	TIC, KT0120B8E	V	V
Web Camera	Chicony, CKFLF26	V	V
WLAN Combo Card	Intel, AX211D2W	V	V
WLAN Combo Antenna	LG (INPAQ), WA-P-LELE-04-009	V	
	LG (LUXSHARE-ICT), L1LRF008-CS-H		V
Type C #1	AC Adapter	V	V
Type C #2	Link to LAN Gender	V	V

3.8. Test Configuration

Mode	TX _{on} (ms)	TX _{on+off} (ms)	Duty Cycle (x)	Duty Cycle Factor [10log(1/x)] (dB)
802.11b	8.360	8.420	0.993	N/A
802.11g	2.090	2.160	0.968	0.141
802.11n-HT20	7.920	7.940	0.997	N/A
802.11n-HT40	7.900	7.920	0.997	N/A
802.11ax-HE20	2.570	2.610	0.985	N/A
802.11ax-HE40	2.570	2.610	0.985	N/A
802.11ax-HE20 (RU Config 26)	2.590	2.630	0.985	N/A
802.11ax-HE20 (RU Config 52)	2.590	2.630	0.985	N/A
802.11ax-HE20 (RU Config 106)	2.590	2.630	0.985	N/A
802.11ax-HE40 (RU Config 242)	2.590	2.640	0.981	N/A

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.

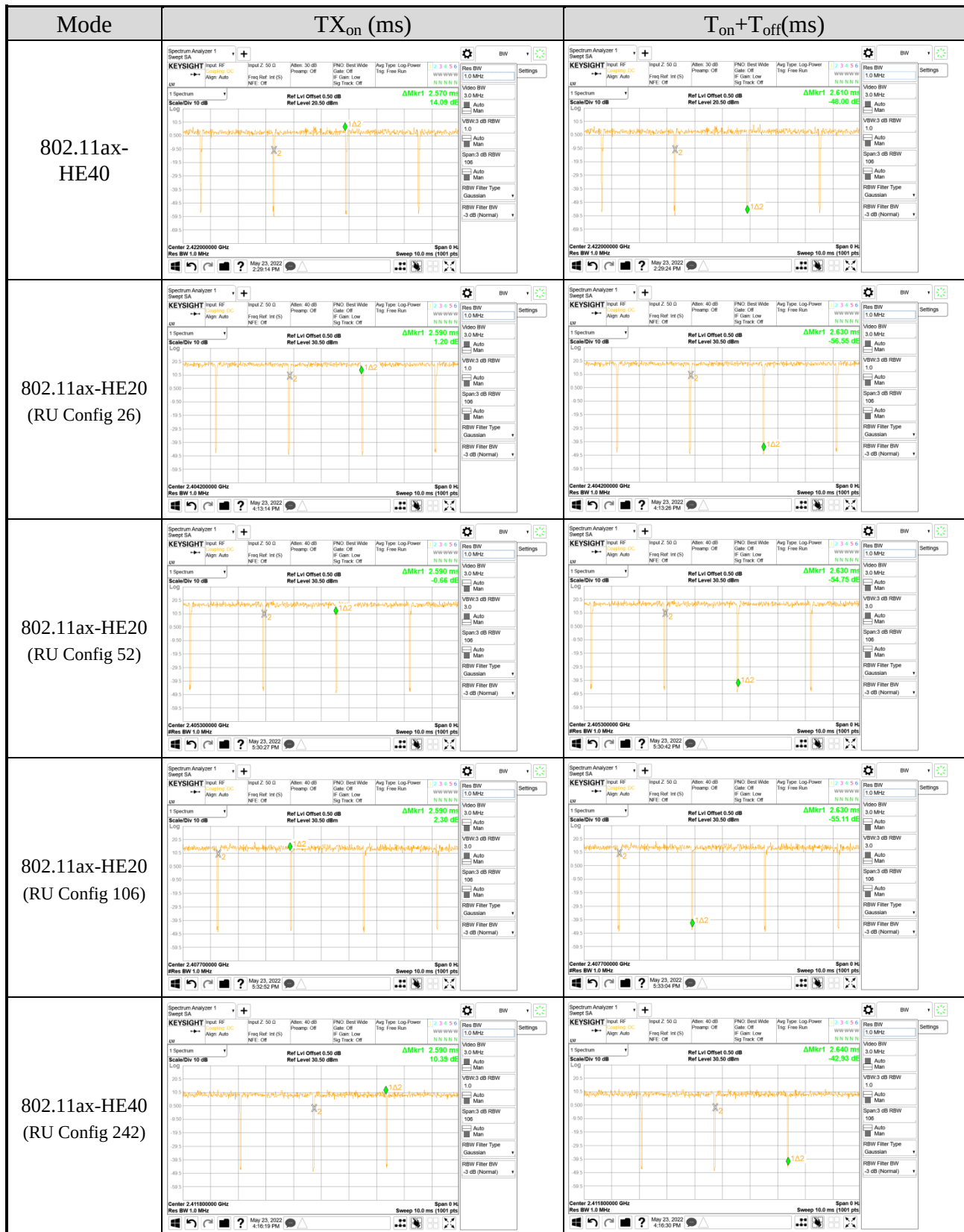
Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City 244, Taiwan

Tel: +886 2 26099301
Fax: +886 2 26099303



Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City 244, Taiwan

Tel: +886 2 26099301
Fax: +886 2 26099303



Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City 244, Taiwan

Tel: +886 2 26099301
Fax: +886 2 26099303

AC Conduction	
SKU #1	Normal operation (with INPAQ Antenna)
SKU #2	Normal operation (with LUXSHARE-ICT Antenna)

Item			Mode	Data Rate	Test Channel
Radiated Test Case	SKU #1/ SKU #2	Radiated Spurious Emission ^{Note1 & 2} (30MHz-1GHz)	802.11ax-HE20	HE0	7
	SKU #2	Radiated Spurious Emission ^{Note1 & 2 & 3} (Above 1GHz)	802.11ax-HE20	HE0	7
			BLE	2Mbps	39

Item		Mode	Data Rate	Test Channel
Conducted Test Case	Peak Output Power	802.11b	1Mbps	1/7/11/12/13
		802.11g	6Mbps	1/2/7/10/11/12/13
		802.11n-HT20	MCS8	1/2/3/7/10/11/12/13
		802.11n-HT40	MCS8	3/7/9/10/11
		802.11ax-HE20	HE0	1/2/3/7/10/11/12/13
		802.11ax-HE40	HE0	3/7/9/10/11
		BLE	1Mbps	37/17/39
			2Mbps	37/17/39
			PHY Coded S2	37/17/39
			PHY Coded S8	37/17/39

Item		Mode	Data Rate	RU Configuration	Test Channel
Conducted Test Case	Peak Output Power	802.11ax-HE20	HE0	26/0	1
				52/37	
				106/53	
		802.11ax-HE40	HE0	26/8	13
				52/40	
				106/5	
		802.11ax-HE40	HE0	242/61	3
			HE0	242/62	11

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: Both of the antennas are the same type. The max-gain condition with SISO (AUX port) is SKU #2 for BLE mode. The max-gain condition with MIMO is SKU #2 for WLAN mode. We present worst case with maximum power. The MIMO is uncorrelated and supported SDM mode only.

Note 4: 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 5: The data rates were selected based on preliminary testing that identified rate as the worst case for output power.

3.9. Output Power Setting

Mode	Centre Frequency (MHz)	Power Setting		Mode	Centre Frequency (MHz)	Power Setting	
		Chain 0 (AUX)	Chain 1 (Main)			Chain 0 (AUX)	Chain 1 (Main)
802.11b	2412	20.000	20.000	802.11g	2412	17.500	17.500
	2442	20.000	20.000		2417	19.000	19.000
	2462	20.000	20.000		2442	20.000	20.000
	2467	18.750	18.750		2457	19.000	19.000
	2472	16.500	16.500		2462	17.000	17.000
					2467	14.50	14.50
					2472	11.38	11.38

Mode	Centre Frequency (MHz)	Power Setting	Mode	Centre Frequency (MHz)	Power Setting
802.11n-HT20	2412	15.500	802.11n-HT40	2422	14.000
	2417	17.000		2442	14.750
	2422	18.250		2452	13.750
	2442	20.000		2457	10.500
	2457	18.500		2462	6.750
	2462	15.000			
	2467	11.000			
	2472	8.000			

Mode	Centre Frequency (MHz)	Power Setting	Mode	Centre Frequency (MHz)	Power Setting
802.11ax-HE20	2412	15.500	802.11ax-HE40	2422	14.000
	2417	17.000		2442	14.750
	2422	18.250		2452	13.750
	2442	20.000		2457	10.625
	2457	18.500		2462	7.000
	2462	15.000			
	2467	11.000			
	2472	8.000			

Mode	RU Configuration	Centre Frequency (MHz)	Power Setting
802.11ax-HE20	26/0	2412	18.000
	52/37		18.000
	106/53		18.25
	26/0	2472	-3.250
	52/37		-2.125
	106/53		0.875
802.11ax-HE40	242/61	2422	15.25
	242/62	2467	6.375

Mode	Centre Frequency (MHz)	Power Setting			
		1M	2M	PHY Coded S2	PHY Coded S8
BLE	2402	Default	Default	Default	Default
	2440	Default	Default	Default	Default
	2480	Default	Default	Default	Default

3.10. Tested Supporting System List

3.10.1. Support Peripheral Unit

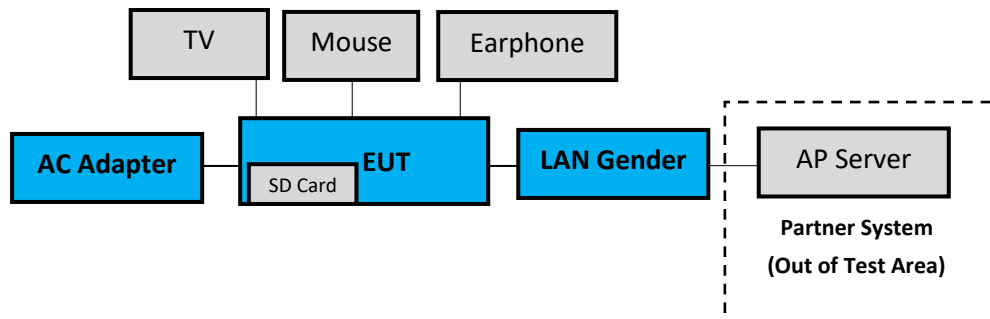
No.	Product	Brand	Model No.	Serial No.	Approval
1.	TV	LG	22LK330-DB	N/A	N/A
2.	USB Mouse	hp	M-U0026	N/A	N/A
3.	Earphone	APPLE	N/A	N/A	N/A
4.	SD Card	ADATA	MicroSDHC Card	N/A	N/A
Partner System					
5.	AP Server	ASUS	RT-AX88U	N/A	FCC ID: MSQ-RTAXHP00 IC: 3568A-RTAXHP00

3.10.2. Cable Lists

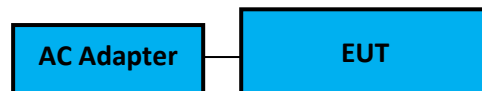
No.	Cable Description Of The Above Support Units
1.	HDMI Cable: Shielded, Detachable, 1.2m AC Power Cord: Unshielded, Detachable, 1.8m
2.	USB Cable: Shielded, Undetachable, 2.0m
3.	Earphone Cable: Unshielded, Undetachable, 1.2m
4.	N/A
5.	AC adapter: M/N:WA-30B12, Cable: Unshielded, Detachable, 1.2m LAN cable: Unshielded, Detachable,3.0m
6.	LAN cable: Unshielded, Detachable, 1.8m

3.11. Setup Configuration

3.11.1. EUT Configuration for Power Line & Radiated Emission



3.11.2. EUT Configuration for RF Conducted Test Items



3.12. Operating Condition of EUT

Test program “DRTU” is used for enabling EUT BT or WLAN function under continues transmitting and choosing data rate/ channel.

[Chain 0 is aux port (A Button in DRTU) Chain 1 is main port (B Button in DRTU)].

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.8 Shielded Room (2) No.1 3m Semi Anechoic Chamber

3.14.Measurement Uncertainty

Test Items/Facilities			Frequency Range	Uncertainty
Conduction Test			9kHz-150kHz	±3.7dB
			150kHz-30MHz	±3.4dB
Radiation Test	☒	No.1 3m Semi Anechoic Chamber	30MHz-200MHz, 3m, Horizontal	±3.8dB
			200MHz-1000MHz, 3m, Horizontal	±4.1dB
			30MHz-200MHz, 3m, Vertical	±4.5dB
			200MHz-1000MHz, 3m, Vertical	±4.5dB
			1GHz-6GHz, 3m	±4.7dB
			6GHz-18GHz, 3m	±4.1dB
			18GHz-40GHz, 3m	±3.52dB
	☐	No.3 3m Semi Anechoic Chamber	30MHz-200MHz, 3m, Horizontal	±3.9dB
			200MHz-1000MHz, 3m, Horizontal	±4.2dB
			30MHz-200MHz, 3m, Vertical	±4.3dB
			200MHz-1000MHz, 3m, Vertical	±4.5dB
	☐	No.4 3m Semi Anechoic Chamber	30MHz-200MHz, 3m, Horizontal	±4.1dB
			200MHz-1000MHz, 3m, Horizontal	±4.5dB
			30MHz-200MHz, 3m, Vertical	±4.4dB
			200MHz-1000MHz, 3m, Vertical	±4.8dB
			1GHz-6GHz, 3m	±5.0dB
			6GHz-18GHz, 3m	±4.7dB
	☐	No.5 3m Semi Anechoic Chamber	30MHz-200MHz, 3m, Horizontal	±4.2dB
			200MHz-1000MHz, 3m, Horizontal	±4.3dB
			30MHz-200MHz, 3m, Vertical	±4.3dB
			200MHz-1000MHz, 3m, Vertical	±4.7dB
			1GHz-6GHz, 3m	±4.8dB
			6GHz-18GHz, 3m	±4.5dB

Remark : Uncertainty = $ku_c(y)$

Test Item	Uncertainty
Bandwidth	± 0.05kHz
Maximum peak output power	± 0.33dB
Power spectral density	± 0.13dB
Conducted Emission Limitations	± 0.13dB

4. MEASUREMENT EQUIPMENT LIST

4.1. Conducted Emission Measurement

Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Interval
1.	Test Receiver	R&S	ESR3	101774	2022. 01. 11	1 Year
2.	A.M.N.	R&S	ENV4200	100169	2021. 11. 04	1 Year
3.	L.I.S.N.	Kyoritsu	KNW-407	8-855-9	2021. 12. 19	1 Year
4.	Pulse Limiter	R&S	ESH3-Z2	100354	2021. 12. 23	1 Year
5.	Digital Thermo-Hygro Meter	iMax	HTC-1	No.8 S/R	2022. 04. 14	1 Year
6.	Coaxial Cable	Yeida	RG/58AU	CE-08	2021. 09. 13	1 Year
7.	Test Software	Audix	e3	V6.120619c	N.C.R.	N.C.R.

4.2. Radiated Emission Measurement

Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Interval
1.	Spectrum Analyzer	Agilent	N9010A-526	MY53400071	2021. 09. 09	1 Year
2.	Spectrum Analyzer	Keysight	N9010B-544	MY55460198	2022. 04. 08	1 Year
3.	Test Receiver	R&S	ESCS30	100039	2022. 04. 08	1 Year
4.	Amplifier	HP	8447D	2944A06305	2022. 01. 05	1 Year
5.	Microwave Amplifier	Keysight	83051A	MY53010042	2021. 07. 30	1 Year
6.	Microwave Amplifier	Keysight	83017A	MY53270365	2021. 05. 27	1 Year
7.	Loop Antenna	ETS • LINDGREN	6512	00035867	2021. 09. 29	1 Year
8.	Bilog Antenna	TESEQ	CBL6112D	33821	2021. 07. 16	1 Year
9.	Double-Ridged Waveguide Horn	EMCO	3115	9609-4927	2021. 07. 02	1 Year
10.	Horn Antenna	COM-POWER	AH-840	101092	2022. 01. 06	1 Year
11.	2.4GHz Notch Filter	K&L Microwave	7NSL10-244 1.5/E130.5-O/O	2	2021 .07. 24	1 Year
12.	3GHz Notch Filter	Microwave	H3G018G1	484796	2021 .07. 24	1 Year
13.	Coaxial Cable	MIYAZAKI	5D2W	RE-11	2022. 01. 20	1 Year
14.	Coaxial Cable	HUBER+SUHNER	SUCOFLEX 106	RE-14	2021. 01. 29	1 Year
15.	Coaxial Cable	HUBER+SUHNER	SUCOFLEX 102	RE-30	2021. 08. 25	1 Year
16.	Digital Thermo-Hygro Meter	iMax	HTC-1	No.3 3m A/C	2022. 04. 14	1 Year
17.	Test Software	Audix	e3	V6.120619c	N.C.R.	N.C.R.

4.3. RF Conducted Measurement

Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Interval
1.	Spectrum Analyzer	Keysight	N9030B	MY61330403	2021. 12. 21	1 Year
2.	Power Meter	Anritsu	ML2495A	1145008	2021. 06. 30	1 Year
3.	Power Sensor	Anritsu	MA2411B	1126096	2021. 06. 30	1 Year
4.	Digital Thermo-Hygro Meter	iMax	HTC-1	RF-03	2022. 04. 14	1 Year

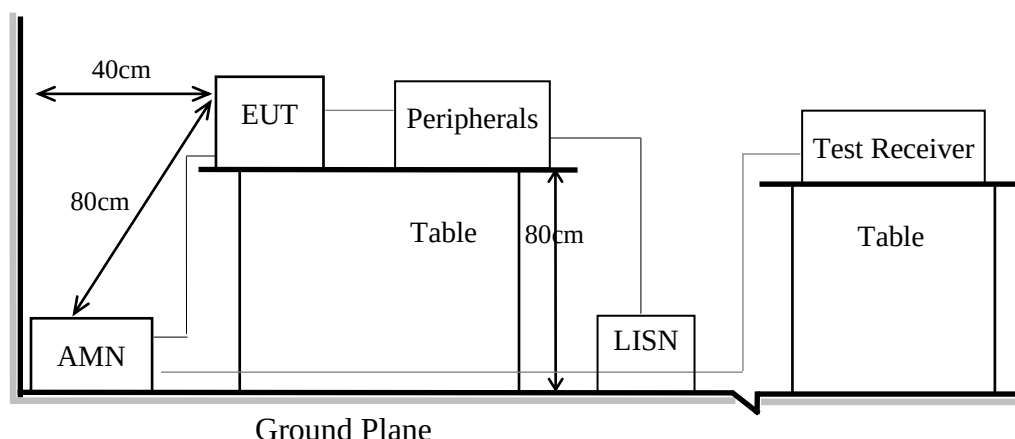
5. CONDUCTED EMISSION

5.1. Block Diagram of Test Setup

5.1.1. Block Diagram of EUT

Indicated as section 3.11

5.1.2. Shielded Room Setup Diagram



5.2. Conducted Emission Limit

Frequency	Conducted Limit	
	Quasi-Peak Level	Average Level
150kHz ~ 500kHz	66 ~ 56 dB μ V	56 ~ 46 dB μ V
500kHz ~ 5MHz	56 dB μ V	46 dB μ V
5MHz ~ 30MHz	60 dB μ V	50 dB μ V

Remark1.: If the average limit is met when using a Quasi-Peak detector, the measurement using the average detector is not required.

2.: The lower limit applies to the band edges.

5.3. Test Procedure

- 5.3.1. To set up the EUT as indicated in ANSI C63.10. The EUT was placed on the table which has 80 cm height to the ground and 40 cm distance to the conducting wall.
- 5.3.2. Power supplier of the EUT was connected to the AC mains through an Artificial Mains Network (A.M.N.).
- 5.3.3. The AC power supplies to all peripheral devices must be provided through line impedance stabilization network (L.I.S.N.)
- 5.3.4. Checking frequency range from 150kHz to 30 MHz and record the emission which does not have 20 dB below limit.

5.4. Test Results

Please refer to Appendix A.

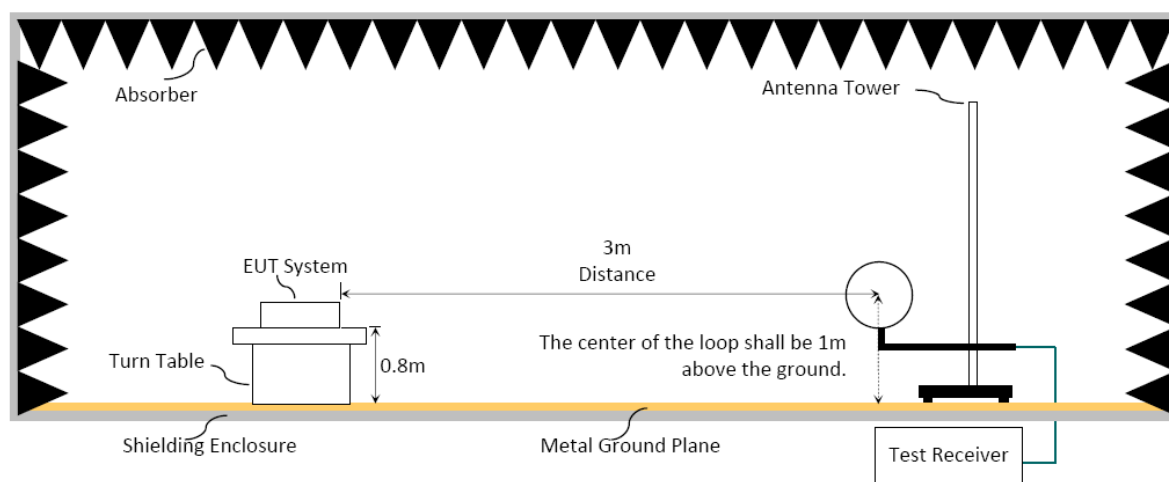
6. RADIATED EMISSION

6.1. Block Diagram of Test Setup

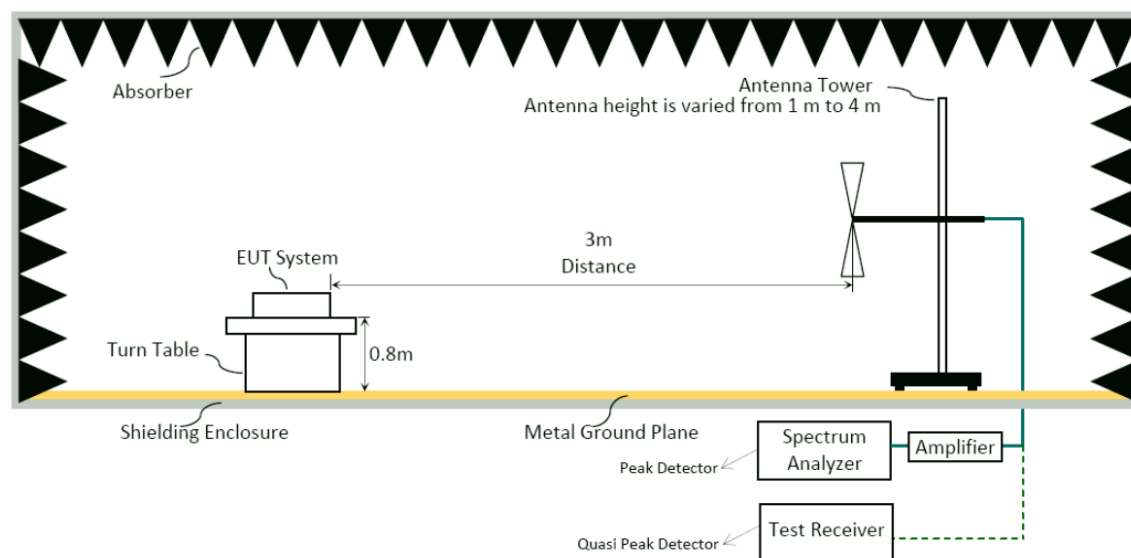
6.1.1. Block Diagram of EUT

Indicated as section 3.11

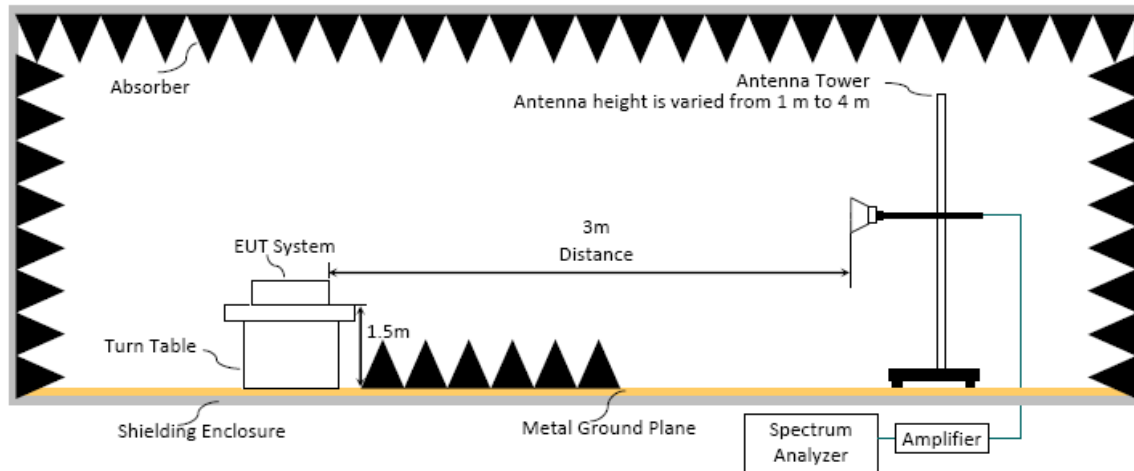
6.1.2. Setup Diagram for 9kHz-30MHz



6.1.3. Setup Diagram for 30-1000MHz



6.1.4. Setup Diagram for above 1GHz



6.2. 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	
		dB μ V/m	μ V/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 dB μ V/m (Peak) 54.0 dB μ V/m (Average)	

Remark : (1) dB μ V/m = 20 log (μ 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.

6.3. 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 C63.10-2013 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 C63.10-2013 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)

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

Modulation Type	VBW Setting(Hz)
802.11b	10Hz
802.11g	10Hz
802.11n-HT20	478Hz
802.11n-HT40	10Hz
802.11ax-HE20	10Hz
802.11ax-HE40	10Hz
802.11ax-HE20 (RU Config 26)	10Hz
802.11ax-HE20 (RU Config 52)	10Hz
802.11ax-HE20 (RU Config 106)	10Hz
802.11ax-HE40 (RU Config 242)	10Hz

(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(dB μ V/m) = Peak Emission Level(dB μ V/m) + DCCF(dB).

6.4. Measurement Result Explanation

■ Peak Emission Level (dB μ V/m) = Antenna Factor (dB/m) + Cable Loss (dB) + Meter Reading (dB μ V) (including Preamp factor if test used)

☐ Average Emission Level (dB μ V/m) = Antenna Factor (dB/m) + Cable Loss (dB) + Meter Reading (dB μ V) (including Preamp factor if test used)

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

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

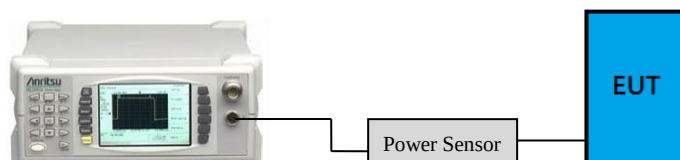
6.5. Test Results

Please refer to Appendix A.

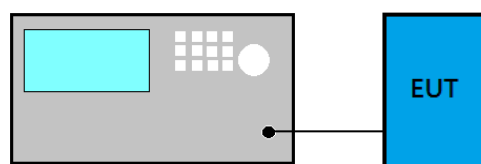
7. MAXIMUM PEAK OUTPUT POWER

7.1. Block Diagram of Test Setup

- For WLAN Function



- For BLE Function



7.2. 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)

7.3. Test Procedure

Following measurement procedure is reference to ANSI C63.10:2013:

■ 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 $< 98\%$.

7.4. Test Results

Please refer to Appendix A



8. DEVIATION TO TEST SPECIFICATIONS

【NONE】



Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City 244, Taiwan

APPENDIX A

Tel: +886 2 26099301
Fax: +886 2 26099303

APPDNDIX A

TEST DATA AND PLOTS

(Model: 16Z90Q)

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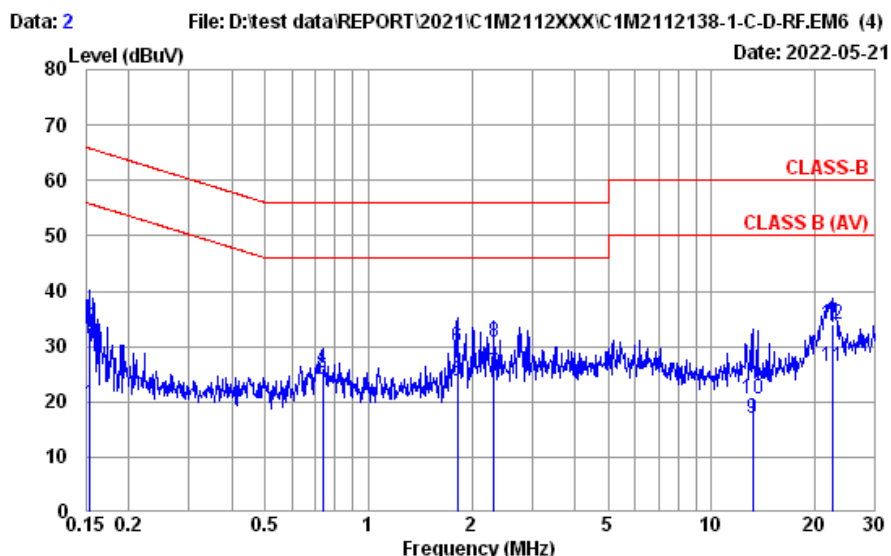
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Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244, Taiwan

Tel: +886 2 26099301
Fax: +886 2 26099303

A.1 CONDUCTED EMISSION

Test Date	2022/05/21	Temp./Hum.	24°C/71%
Test Voltage	AC 120V 60Hz (Via AC Adapter)	Tested By	Chucky Chiu
Test SKU	SKU #1 (with INPAQ Antenna)		



Site No.	: No.8 Shielded Room	Data No.	: 2
Instrument 1	: Receiver ESR3(774)		
Instrument 2	: EMI4200 (169)(A) CE-08 ESH3-Z2 (354)		
Limit	: CLASS-B	Phase	: NEUTRAL
Environment	: 24°C / 71%	Engineer	: Chucky Chiu
EUT Model	: 16Z90Q	Test Rating	: 120Vac/60Hz
Test Mode	: Operating		
	Inpaq		

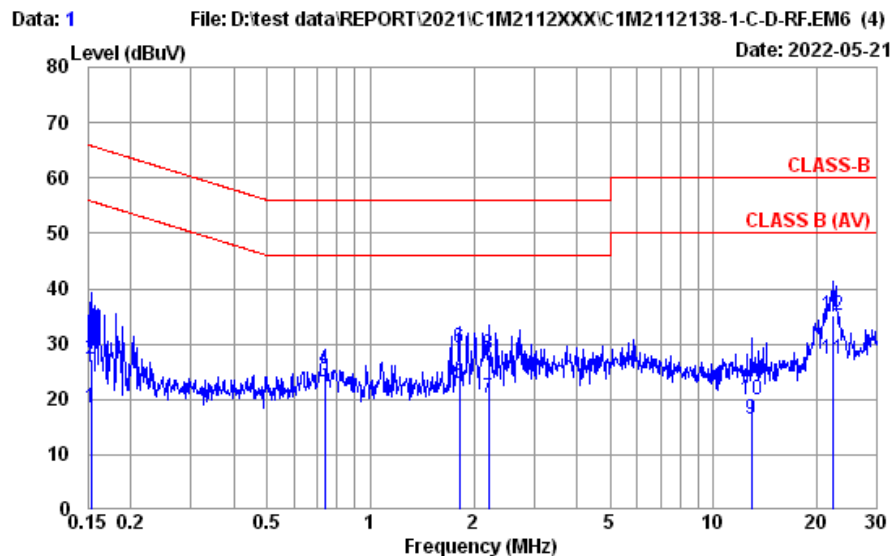
	Freq. (MHz)	AMN Factor (dB)	Cable Loss (dB)	Pulse Att. (dB)	Reading (dBμV)	Emission Level (dBμV)	Limits (dBμV)	Margin (dB)	Remark
1	0.154	10.64	0.03	9.85	-0.77	19.75	55.78	36.03	Average
2	0.154	10.64	0.03	9.85	12.97	33.49	65.78	32.29	QP
3	0.735	10.43	0.04	9.85	3.73	24.05	46.00	21.95	Average
4	0.735	10.43	0.04	9.85	5.75	26.07	56.00	29.93	QP
5	1.819	10.46	0.06	9.86	3.33	23.71	46.00	22.29	Average
6	1.819	10.46	0.06	9.86	9.56	29.94	56.00	26.06	QP
7	2.321	10.50	0.07	9.86	4.81	25.24	46.00	20.76	Average
8	2.321	10.50	0.07	9.86	10.30	30.73	56.00	25.27	QP
9	13.197	12.23	0.16	9.90	-5.28	17.01	50.00	32.99	Average
10	13.197	12.23	0.16	9.90	-1.84	20.45	60.00	39.55	QP
11	22.416	14.38	0.20	9.95	1.96	26.49	50.00	23.51	Average
12	22.416	14.38	0.20	9.95	9.55	34.08	60.00	25.92	QP

Remarks: 1. Emission Level= AMN Factor + Cable Loss + Pulse Att. + Reading.
2. If the average limit is met when using a quasi-peak detector,
the EUT shall be deemed to meet both limits and measurement
with average detector is unnecessary.

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244, Taiwan

Tel: +886 2 26099301
Fax: +886 2 26099303

Test Date	2022/05/21	Temp./Hum.	24°C/71%
Test Voltage	AC 120V 60Hz (Via AC Adapter)	Tested By	Chucky Chiu
Test SKU	SKU #1 (with INPAQ Antenna)		



Site No. : No.8 Shielded Room Data No. : 1
Instrument 1 : Receiver ESR3(774)
Instrument 2 : EMI4200 (169)(A)|CE-08|ESH3-Z2 (354)
Limit : CLASS-B Phase : LINE
Environment : 24°C / 71% Engineer : Chucky Chiu
EUT Model : 16Z90Q Test Rating : 120Vac/60Hz
Test Mode : Operating
Inpaq

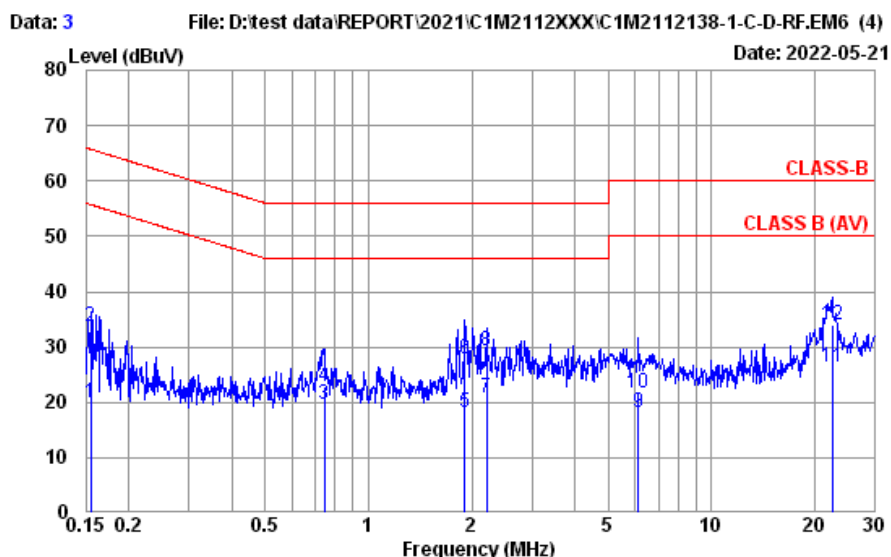
	Freq. (MHz)	AMN Factor (dB)	Cable Loss (dB)	Pulse Att. (dB)	Reading (dBμV)	Emission Level (dBμV)	Limits (dBμV)	Margin (dB)	Remark
1	0.153	10.60	0.03	9.85	-1.99	18.49	55.82	37.33	Average
2	0.153	10.60	0.03	9.85	6.83	27.31	65.82	38.51	QP
3	0.735	10.41	0.04	9.85	2.99	23.29	46.00	22.71	Average
4	0.735	10.41	0.04	9.85	5.22	25.52	56.00	30.48	QP
5	1.819	10.43	0.06	9.86	2.58	22.93	46.00	23.07	Average
6	1.819	10.43	0.06	9.86	8.98	29.33	56.00	26.67	QP
7	2.213	10.44	0.06	9.86	-0.12	20.24	46.00	25.76	Average
8	2.213	10.44	0.06	9.86	7.67	28.03	56.00	27.97	QP
9	12.920	11.74	0.16	9.90	-5.25	16.55	50.00	33.45	Average
10	12.920	11.74	0.16	9.90	-1.86	19.94	60.00	40.06	QP
11	22.180	13.59	0.20	9.95	3.43	27.17	50.00	22.83	Average
12	22.180	13.59	0.20	9.95	11.28	35.02	60.00	24.98	QP

Remarks: 1. Emission Level= AMN Factor + Cable Loss + Pulse Att. + Reading.
2. If the average limit is met when using a quasi-peak detector,
the EUT shall be deemed to meet both limits and measurement

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244, Taiwan

Tel: +886 2 26099301
Fax: +886 2 26099303

Test Date	2022/05/21	Temp./Hum.	24°C/71%
Test Voltage	AC 120V 60Hz (Via AC Adapter)	Tested By	Chucky Chiu
Test SKU	SKU #2 (with LUXSHARE-ICT Antenna)		



Site No. : No.8 Shielded Room Data No. : 3
Instrument 1 : Receiver ESR3(774)
Instrument 2 : ENH4200 (169)(A) | CE-08 | ESH3-Z2 (354)
Limit : CLASS-B Phase : NEUTRAL
Environment : 24°C / 71% Engineer : Chucky Chiu
EUT Model : 16Z90Q Test Rating : 120Vac/60Hz
Test Mode : Operating
Luxshare

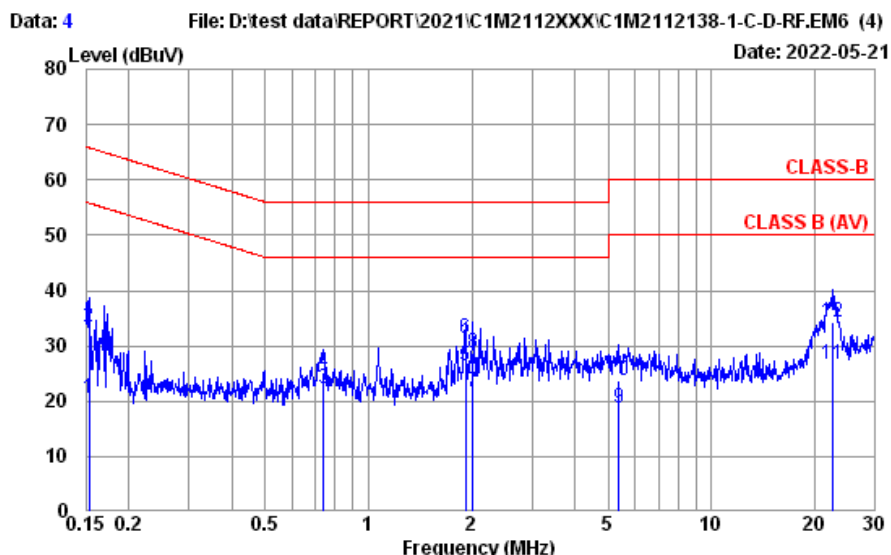
	Freq. (MHz)	AMN Factor (dB)	Cable Loss (dB)	Pulse Att. (dB)	Reading (dBμV)	Emission Level (dBμV)	Limits (dBμV)	Margin (dB)	Remark
1	0.155	10.64	0.03	9.85	-0.48	20.04	55.74	35.70	Average
2	0.155	10.64	0.03	9.85	13.18	33.70	65.74	32.04	QP
3	0.743	10.43	0.04	9.85	-0.82	19.50	46.00	26.50	Average
4	0.743	10.43	0.04	9.85	2.64	22.96	56.00	33.04	QP
5	1.908	10.47	0.06	9.86	-2.17	18.22	46.00	27.78	Average
6	1.908	10.47	0.06	9.86	7.48	27.87	56.00	28.13	QP
7	2.213	10.49	0.06	9.86	0.54	20.95	46.00	25.05	Average
8	2.213	10.49	0.06	9.86	8.75	29.16	56.00	26.84	QP
9	6.121	10.94	0.11	9.87	-2.77	18.15	50.00	31.85	Average
10	6.121	10.94	0.11	9.87	0.64	21.56	60.00	38.44	QP
11	22.416	14.38	0.20	9.95	1.90	26.43	50.00	23.57	Average
12	22.416	14.38	0.20	9.95	9.42	33.95	60.00	26.05	QP

Remarks: 1. Emission Level= AMN Factor + Cable Loss + Pulse Att. + Reading.
2. If the average limit is met when using a quasi-peak detector, the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244, Taiwan

Tel: +886 2 26099301
Fax: +886 2 26099303

Test Date	2022/05/21	Temp./Hum.	24°C/71%
Test Voltage	AC 120V 60Hz (Via AC Adapter)	Tested By	Chucky Chiu
Test SKU	SKU #2 (with LUXSHARE-ICT Antenna)		



Site No. : No.8 Shielded Room Data No. : 4
Instrument 1 : Receiver ESR3(774)
Instrument 2 : EMI4200 (169)(A)|CE-08|ESH3-Z2 (354)
Limit : CLASS-B Phase : LINE
Environment : 24°C / 71% Engineer : Chucky Chiu
EUT Model : 16Z900 Test Rating : 120Vac/60Hz
Test Mode : Operating
Luxshare

	Freq. (MHz)	AMN Factor (dB)	Cable Loss (dB)	Pulse Att. (dB)	Reading (dBμV)	Emission Level (dBμV)	Limits (dBμV)	Margin (dB)	Remark
1	0.153	10.60	0.03	9.85	-0.04	20.44	55.82	35.38	Average
2	0.153	10.60	0.03	9.85	12.87	33.35	65.82	32.47	QP
3	0.739	10.41	0.04	9.85	1.92	22.22	46.00	23.78	Average
4	0.739	10.41	0.04	9.85	4.82	25.12	56.00	30.88	QP
5	1.918	10.43	0.06	9.86	6.16	26.51	46.00	19.49	Average
6	1.918	10.43	0.06	9.86	10.92	31.27	56.00	24.73	QP
7	2.012	10.43	0.06	9.86	1.46	21.81	46.00	24.19	Average
8	2.012	10.43	0.06	9.86	8.36	28.71	56.00	27.29	QP
9	5.362	10.70	0.10	9.87	-1.95	18.72	50.00	31.28	Average
10	5.362	10.70	0.10	9.87	3.19	23.86	60.00	36.14	QP
11	22.535	13.70	0.21	9.96	2.85	26.72	50.00	23.28	Average
12	22.535	13.70	0.21	9.96	10.40	34.27	60.00	25.73	QP

Remarks: 1. Emission Level= AMN Factor + Cable Loss + Pulse Att. + Reading.
2. If the average limit is met when using a quasi-peak detector,
the EUT shall be deemed to meet both limits and measurement
with average detector is unnecessary.

A.2 RADIATED EMISSION

Test Date	2022/05/23 ~ 06/08	Temp./Hum.	22 ~ 23°C/65%
Test Voltage	AC 120V 60Hz (Via AC Adapter)	Tested By	Brian Hsieh

A.2.1 Emissions within Restricted Frequency Bands

A.2.1.1 Frequency 9kHz~30MHz

The emissions (9kHz~30MHz) not reported for there is no emission be found.

A.2.1.2 Frequency Below 1GHz

● **Test SKU #1 (with INPAQ Antenna)**

Mode	802.11ax-HE20	Frequency	TX 2442MHz
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Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
39.700	19.11	1.63	26.47	36.87	31.14	40.00	8.86	Peak
101.780	16.65	2.63	26.28	36.56	29.56	43.50	13.94	Peak
244.370	17.87	4.20	25.70	39.14	35.51	46.00	10.49	Peak
669.230	24.64	7.47	27.42	30.89	35.58	46.00	10.42	Peak
806.000	25.96	8.23	27.25	31.10	38.04	46.00	7.96	Peak
831.220	26.06	8.38	27.18	29.96	37.22	46.00	8.78	Peak

Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
44.550	16.56	1.72	26.47	37.87	29.68	40.00	10.32	Peak
106.630	17.05	2.70	26.24	33.53	27.04	43.50	16.46	Peak
482.990	22.84	6.63	27.01	32.74	35.20	46.00	10.80	Peak
629.460	24.45	7.27	27.41	31.00	35.31	46.00	10.69	Peak
748.770	25.36	7.91	27.35	29.68	35.60	46.00	10.40	Peak
830.250	26.06	8.38	27.18	30.05	37.31	46.00	8.69	Peak

Audix Technology Corp.

No. 491, Zhongfu Rd., Linkou Dist.,

New Taipei City 244, Taiwan

Tel: +886 2 26099301**Fax: +886 2 26099303**

Mode	BLE (2M)	Frequency	TX 2480MHz
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Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
36.790	20.71	1.57	26.48	27.99	23.79	40.00	16.21	Peak
134.760	17.23	3.03	26.07	35.60	29.79	43.50	13.71	Peak
221.090	16.51	3.95	25.74	38.67	33.39	46.00	12.61	Peak
273.470	18.62	4.47	25.65	35.62	33.06	46.00	12.94	Peak
398.600	21.37	5.91	26.41	31.28	32.15	46.00	13.85	Peak
644.010	24.53	7.35	27.41	30.08	34.55	46.00	11.45	Peak

Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
54.250	13.17	1.91	26.44	43.49	32.13	40.00	7.87	Peak
129.910	17.46	2.98	26.10	40.75	35.09	43.50	8.41	Peak
162.890	15.59	3.33	25.93	41.02	34.01	43.50	9.49	Peak
187.140	15.02	3.58	25.84	38.98	31.74	43.50	11.76	Peak
378.230	20.95	5.69	26.28	28.92	29.28	46.00	16.72	Peak
599.390	24.30	7.10	27.40	29.27	33.27	46.00	12.73	Peak

● **Test SKU #2 (with LUXSHARE-ICT Antenna)**

Mode	802.11ax-HE20	Frequency	TX 2442MHz
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Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
36.790	20.71	1.57	26.48	30.88	26.68	40.00	13.32	Peak
117.300	17.81	2.82	26.17	34.02	28.48	43.50	15.02	Peak
191.990	15.05	3.62	25.82	37.43	30.28	43.50	13.22	Peak
267.650	18.52	4.42	25.66	37.28	34.56	46.00	11.44	Peak
485.900	22.89	6.65	27.04	32.75	35.25	46.00	10.75	Peak
741.980	25.30	7.89	27.36	33.74	39.57	46.00	6.43	Peak

Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
35.820	21.22	1.55	26.48	36.55	32.84	40.00	7.16	Peak
148.340	16.41	3.18	26.00	37.08	30.67	43.50	12.83	Peak
172.590	15.23	3.44	25.89	40.76	33.54	43.50	9.96	Peak
250.190	18.21	4.26	25.69	33.71	30.49	46.00	15.51	Peak
417.030	21.73	6.09	26.56	35.52	36.78	46.00	9.22	Peak
540.220	23.61	6.90	27.24	34.49	37.76	46.00	8.24	Peak

Audix Technology Corp.

No. 491, Zhongfu Rd., Linkou Dist.,

New Taipei City 244, Taiwan

Tel: +886 2 26099301**Fax: +886 2 26099303**

Mode	BLE (2M)	Frequency	TX 2480MHz
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Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
36.790	20.71	1.57	26.48	30.63	26.43	40.00	13.57	Peak
82.380	13.34	2.39	26.34	37.00	26.39	40.00	13.61	Peak
106.630	17.05	2.70	26.24	35.06	28.57	43.50	14.93	Peak
267.650	18.52	4.42	25.66	36.55	33.83	46.00	12.17	Peak
445.160	22.21	6.33	26.77	34.31	36.08	46.00	9.92	Peak
741.980	25.30	7.89	27.36	34.37	40.20	46.00	5.80	Peak

Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
35.810	21.29	1.55	26.48	39.21	35.57	40.00	4.43	Peak
114.410	17.61	2.79	26.19	37.57	31.78	43.50	11.72	Peak
172.530	15.23	3.44	25.89	37.40	30.18	43.50	13.32	Peak
416.030	21.70	6.07	26.56	31.68	32.89	46.00	13.11	Peak
445.160	22.21	6.33	26.77	35.82	37.59	46.00	8.41	Peak
741.970	25.30	7.89	27.36	34.96	40.79	46.00	5.21	Peak

A.2.2 Emissions outside the frequency band:

The emissions (up to 25GHz) not reported for there is no emission be found.

- **Test SKU #2 (with LUXSHARE-ICT Antenna)**

Mode	802.11ax-HE20	Frequency	TX 2442MHz
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Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
4884.000	33.40	8.64	31.67	32.68	43.05	54.00	10.95	Peak

Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
4884.000	33.40	8.64	31.67	32.08	42.45	54.00	11.55	Peak

Mode	BLE (2M)	Frequency	TX 2480MHz
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Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
4960.000	33.55	8.74	31.64	31.81	42.46	54.00	11.54	Peak

Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Gain (dB)	Read Level (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
4960.000	33.55	8.74	31.64	31.30	41.95	54.00	12.05	Peak

A.2.3 Emissions in Non-restricted Frequency Bands:

Pursuant to ANSI C63.10:2013 that emission levels below the FCC 15.209(a)/RSS-Gen Section 8.9 table 4 general radiated emissions limits is not required.

A.3 MAXIMUM PEAK OUTPUT POWER

Test Date	2022/05/23 ~ 06/22	Temp./Hum.	24 ~ 25°C/49 ~ 68%
Cable Loss	0.5dB	Tested By	Brian Hsieh
Test Voltage	AC 120V, 60Hz (via AC Adapter)		

A.3.1 Peak Output Power

Test SKU: SKU #1

Mode	Centre Frequency (MHz)	Peak Output Power (dBm)		Max. Peak Output Power		Antenna Gain (dBi)	Output Power (E.I.R.P.)		Limit
		Chain 0 (Main)	Chain 1 (AUX)	(dBm)	(W)		(dBm)	(W)	
802.11b	2412	23.26	23.11	23.26	0.212	3.2	26.46	0.443	<30dBm (1W) (Maximum Peak Output Power) <36dBm (4W) (E.I.R.P)
	2442	23.62	23.44	23.62	0.230		26.82	0.481	
	2462	23.00	23.42	23.42	0.220		26.62	0.459	
	2467	22.20	22.63	22.63	0.183		25.83	0.383	
	2472	20.49	20.57	20.57	0.114		23.77	0.238	

Note: The results have been included cable loss.

Mode	Centre Frequency (MHz)	Peak Output Power (dBm)		Max. Peak Output Power		Antenna Gain (dBi)	Output Power (E.I.R.P.)		Limit
		Chain 0 (Main)	Chain 1 (AUX)	(dBm)	(W)		(dBm)	(W)	
802.11g	2412	21.74	21.28	21.74	0.149	3.2	24.94	0.312	<30dBm (1W) (Maximum Peak Output Power) <36dBm (4W) (E.I.R.P)
	2417	23.72	22.92	23.72	0.236		26.92	0.492	
	2442	24.22	23.79	24.22	0.264		27.42	0.552	
	2457	23.30	23.47	23.47	0.222		26.67	0.465	
	2462	21.54	21.76	21.76	0.150		24.96	0.313	
	2467	19.22	18.71	19.22	0.084		22.42	0.175	
	2472	16.70	16.90	16.90	0.049		20.10	0.102	

Note: The results have been included cable loss.

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244, Taiwan

Tel: +886 2 26099301
Fax: +886 2 26099303

Mode	Centre Frequency (MHz)	Peak Output Power (dBm)		Total Peak Output Power		Antenna Gain (dBi)	Output Power (E.I.R.P.)		Limit
		Chain 0 (Main)	Chain 1 (AUX)	(dBm)	(W)		(dBm)	(W)	
802.11n-HT20	2412	19.85	20.18	23.03	0.201	3.2	26.23	0.420	<30dBm (1W) (Maximum Peak Output Power) <36dBm (4W) (E.I.R.P)
	2417	22.10	21.49	24.82	0.303		28.02	0.634	
	2422	22.48	22.44	25.47	0.352		28.67	0.736	
	2442	23.58	23.58	26.59	0.456		29.79	0.953	
	2457	22.99	22.39	25.71	0.372		28.91	0.778	
	2462	19.12	19.74	22.45	0.176		25.65	0.367	
	2467	16.06	15.55	18.82	0.076		22.02	0.159	
	2472	13.47	13.38	16.44	0.044		19.64	0.092	

Note: The results have been included cable loss.

Mode	Centre Frequency (MHz)	Peak Output Power (dBm)		Total Peak Output Power		Antenna Gain (dBi)	Output Power (E.I.R.P.)		Limit
		Chain 0 (Main)	Chain 1 (AUX)	(dBm)	(W)		(dBm)	(W)	
802.11n-HT40	2422	20.30	20.36	23.34	0.216	3.2	26.54	0.451	<30dBm (1W) (Maximum Peak Output Power) <36dBm (4W) (E.I.R.P)
	2442	21.56	21.13	24.36	0.273		27.56	0.570	
	2452	20.08	20.11	23.11	0.205		26.31	0.428	
	2457	17.40	16.91	20.17	0.104		23.37	0.217	
	2462	14.69	15.13	17.93	0.062		21.13	0.130	

Note: The results have been included cable loss.

Mode	Centre Frequency (MHz)	Peak Output Power (dBm)		Total Peak Output Power		Antenna Gain (dBi)	Output Power (E.I.R.P.)		Limit
		Chain 0 (Main)	Chain 1 (AUX)	(dBm)	(W)		(dBm)	(W)	
802.11ax-HE20	2412	20.29	20.01	23.16	0.207	3.2	26.36	0.433	<30dBm (1W) (Maximum Peak Output Power) <36dBm (4W) (E.I.R.P)
	2417	21.53	21.45	24.50	0.282		27.70	0.589	
	2422	22.87	22.61	25.75	0.376		28.95	0.785	
	2442	24.20	24.27	27.25	0.531		30.45	1.109	
	2457	22.80	22.53	25.68	0.370		28.88	0.773	
	2462	19.76	20.09	22.94	0.197		26.14	0.411	
	2467	15.48	16.05	18.78	0.076		21.98	0.158	
	2472	14.30	13.16	16.78	0.048		19.98	0.100	

Note: The results have been included cable loss.

Audix Technology Corp.

No. 491, Zhongfu Rd., Linkou Dist.,

New Taipei City244, Taiwan

Tel: +886 2 26099301

Fax: +886 2 26099303

Mode	Centre Frequency (MHz)	Peak Output Power (dBm)		Total Peak Output Power		Antenna Gain (dBi)	Output Power (E.I.R.P.)		Limit
		Chain 0 (Main)	Chain 1 (AUX)	(dBm)	(W)		(dBm)	(W)	
802.11ax-HE40	2422	21.00	20.89	23.96	0.249	3.2	27.16	0.520	<30dBm (1W) (Maximum Peak Output Power) <36dBm (4W) (E.I.R.P)
	2442	21.10	21.58	24.36	0.273		27.56	0.570	
	2452	20.53	20.60	23.58	0.228		26.78	0.476	
	2457	17.42	17.02	20.23	0.105		23.43	0.220	
	2462	13.61	12.97	16.31	0.043		19.51	0.089	

Note: The results have been included cable loss.

Mode	RU Configuration	Centre Frequency (MHz)	Peak Output Power (dBm)		Total Peak Output Power		Antenna Gain (dBi)	Output Power (E.I.R.P.)		Limit
			Chain 0 (Main)	Chain 1 (AUX)	(dBm)	(W)		(dBm)	(W)	
802.11ax-HE20	26/0	2412	22.73	22.71	25.73	0.374	3.2	28.93	0.782	<30dBm (1W) (Maximum Peak Output Power) <36dBm (4W) (E.I.R.P)
	52/37		23.04	22.58	25.83	0.383		29.03	0.800	
	106/53		22.98	22.83	25.92	0.391		29.12	0.817	
	26/8	2472	19.10	18.36	21.76	0.150		24.96	0.313	
	52/40		18.80	19.05	21.94	0.156		25.14	0.327	
	106/54		19.19	19.40	22.31	0.170		25.51	0.356	

Note: The results have been included cable loss.

Mode	RU Configuration	Centre Frequency (MHz)	Peak Output Power (dBm)		Total Peak Output Power		Antenna Gain (dBi)	Output Power (E.I.R.P.)		Limit
			Chain 0 (Main)	Chain 1 (AUX)	(dBm)	(W)		(dBm)	(W)	
802.11ax-HE40	242/61	2422	20.43	20.94	23.70	0.234	3.2	26.90	0.490	<30dBm (1W) (Maximum Peak Output Power) <36dBm (4W) (E.I.R.P)
	242/62	2467	19.54	20.22	22.90	0.195		26.10	0.407	

Note: The results have been included cable loss.

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244, Taiwan

Tel: +886 2 26099301
Fax: +886 2 26099303

Mode	Centre Frequency (MHz)	Peak Output Power (dBm)		Max. Peak Output Power		Antenna Gain (dBi)	Output Power (E.I.R.P.)		Limit
		Chain 0 (Main)	Chain 1 (AUX)	(dBm)	(W)		(dBm)	(W)	
BLE (1M)	2402	4.98	---	4.98	0.0031	3.2	8.18	0.0066	<30dBm (1W) (Maximum Peak Output Power) <36dBm (4W) (E.I.R.P)
	2440	5.47	---	5.47	0.0035		8.67	0.0074	
	2480	5.99	---	5.99	0.0040		9.19	0.0083	
BLE (2M)	2402	5.67	---	5.67	0.0037		8.87	0.0077	
	2440	5.47	---	5.47	0.0035		8.67	0.0074	
	2480	5.94	---	5.94	0.0039		9.14	0.0082	
BLE (PHY Coded S2)	2402	5.17	---	5.17	0.0033		8.37	0.0069	
	2440	5.17	---	5.17	0.0033		8.37	0.0069	
	2480	5.89	---	5.89	0.0039		9.09	0.0081	
BLE (PHY Coded S8)	2402	5.47	---	5.47	0.0035		8.67	0.0074	
	2440	5.69	---	5.69	0.0037		8.89	0.0077	
	2480	5.22	---	5.22	0.0033		8.42	0.0070	

Note: The results have been included cable loss.

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244, Taiwan

Tel: +886 2 26099301
Fax: +886 2 26099303

Test SKU: SKU #2

Mode	Centre Frequency (MHz)	Peak Output Power (dBm)		Max. Peak Output Power		Antenna Gain (dBi)	Output Power (E.I.R.P.)		Limit
		Chain 0 (Main)	Chain 1 (AUX)	(dBm)	(W)		(dBm)	(W)	
802.11b	2412	23.26	23.11	23.26	0.212	6.3	29.56	0.904	<30dBm (1W) (Maximum Peak Output Power) <36dBm (4W) (E.I.R.P)
	2442	23.62	23.44	23.62	0.230		29.92	0.982	
	2462	23.00	23.42	23.42	0.220		29.72	0.938	
	2467	22.20	22.63	22.63	0.183		28.93	0.782	
	2472	20.49	20.57	20.57	0.114		26.87	0.486	

Note: The results have been included cable loss.

Mode	Centre Frequency (MHz)	Peak Output Power (dBm)		Max. Peak Output Power		Antenna Gain (dBi)	Output Power (E.I.R.P.)		Limit
		Chain 0 (Main)	Chain 1 (AUX)	(dBm)	(W)		(dBm)	(W)	
802.11g	2412	21.74	21.28	21.74	0.149	6.3	28.04	0.637	<30dBm (1W) (Maximum Peak Output Power) <36dBm (4W) (E.I.R.P)
	2417	23.72	22.92	23.72	0.236		30.02	1.005	
	2442	24.22	23.79	24.22	0.264		30.52	1.127	
	2457	23.30	23.47	23.47	0.222		29.77	0.948	
	2462	21.54	21.76	21.76	0.150		28.06	0.640	
	2467	19.22	18.71	19.22	0.084		25.52	0.356	
	2472	16.70	16.90	16.90	0.049		23.20	0.209	

Note: The results have been included cable loss.

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244, Taiwan

Tel: +886 2 26099301
Fax: +886 2 26099303

Mode	Centre Frequency (MHz)	Peak Output Power (dBm)		Total Peak Output Power		Antenna Gain (dBi)	Output Power (E.I.R.P.)		Limit
		Chain 0 (Main)	Chain 1 (AUX)	(dBm)	(W)		(dBm)	(W)	
802.11n-HT20	2412	19.85	20.18	23.03	0.201	6.3	29.33	0.857	<30dBm (1W) (Maximum Peak Output Power) <36dBm (4W) (E.I.R.P)
	2417	22.10	21.49	24.82	0.303		31.12	1.294	
	2422	22.48	22.44	25.47	0.352		31.77	1.503	
	2442	23.58	23.58	26.59	0.456		32.89	1.945	
	2457	22.99	22.39	25.71	0.372		32.01	1.589	
	2462	19.12	19.74	22.45	0.176		28.75	0.750	
	2467	16.06	15.55	18.82	0.076		25.12	0.325	
	2472	13.47	13.38	16.44	0.044		22.74	0.188	

Note: The results have been included cable loss.

Mode	Centre Frequency (MHz)	Peak Output Power (dBm)		Total Peak Output Power		Antenna Gain (dBi)	Output Power (E.I.R.P.)		Limit
		Chain 0 (Main)	Chain 1 (AUX)	(dBm)	(W)		(dBm)	(W)	
802.11n-HT40	2422	20.30	20.36	23.34	0.216	6.3	29.64	0.920	<30dBm (1W) (Maximum Peak Output Power) <36dBm (4W) (E.I.R.P)
	2442	21.56	21.13	24.36	0.273		30.66	1.164	
	2452	20.08	20.11	23.11	0.205		29.41	0.873	
	2457	17.40	16.91	20.17	0.104		26.47	0.444	
	2462	14.69	15.13	17.93	0.062		24.23	0.265	

Note: The results have been included cable loss.

Mode	Centre Frequency (MHz)	Peak Output Power (dBm)		Total Peak Output Power		Antenna Gain (dBi)	Output Power (E.I.R.P.)		Limit
		Chain 0 (Main)	Chain 1 (AUX)	(dBm)	(W)		(dBm)	(W)	
802.11ax-HE20	2412	20.29	20.01	23.16	0.207	6.3	29.46	0.883	<30dBm (1W) (Maximum Peak Output Power) <36dBm (4W) (E.I.R.P)
	2417	21.53	21.45	24.50	0.282		30.80	1.202	
	2422	22.87	22.61	25.75	0.376		32.05	1.603	
	2442	24.20	24.27	27.25	0.531		33.55	2.265	
	2457	22.80	22.53	25.68	0.370		31.98	1.578	
	2462	19.76	20.09	22.94	0.197		29.24	0.839	
	2467	15.48	16.05	18.78	0.076		25.08	0.322	
	2472	14.30	13.16	16.78	0.048		23.08	0.203	

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Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244, Taiwan

Tel: +886 2 26099301
Fax: +886 2 26099303

Mode	Centre Frequency (MHz)	Peak Output Power (dBm)		Total Peak Output Power		Antenna Gain (dBi)	Output Power (E.I.R.P.)		Limit
		Chain 0 (Main)	Chain 1 (AUX)	(dBm)	(W)		(dBm)	(W)	
802.11ax-HE40	2422	21.00	20.89	23.96	0.249	6.3	30.26	1.062	<30dBm (1W) (Maximum Peak Output Power) <36dBm (4W) (E.I.R.P)
	2442	21.10	21.58	24.36	0.273		30.66	1.164	
	2452	20.53	20.60	23.58	0.228		29.88	0.973	
	2457	17.42	17.02	20.23	0.105		26.53	0.450	
	2462	13.61	12.97	16.31	0.043		22.61	0.182	

Note: The results have been included cable loss.

Mode	RU Configuration	Centre Frequency (MHz)	Peak Output Power (dBm)		Total Peak Output Power		Antenna Gain (dBi)	Output Power (E.I.R.P.)		Limit
			Chain 0 (Main)	Chain 1 (AUX)	(dBm)	(W)		(dBm)	(W)	
802.11ax-HE20	26/0	2412	22.73	22.71	25.73	0.374	6.3	32.03	1.596	<30dBm (1W) (Maximum Peak Output Power) <36dBm (4W) (E.I.R.P)
	52/37		23.04	22.58	25.83	0.383		32.13	1.633	
	106/53		22.98	22.83	25.92	0.391		32.22	1.667	
	26/8	2472	19.10	18.36	21.76	0.150		28.06	0.640	
	52/40		18.80	19.05	21.94	0.156		28.24	0.667	
	106/54		19.19	19.40	22.31	0.170		28.61	0.726	

Note: The results have been included cable loss.

Mode	RU Configuration	Centre Frequency (MHz)	Peak Output Power (dBm)		Total Peak Output Power		Antenna Gain (dBi)	Output Power (E.I.R.P.)		Limit
			Chain 0 (Main)	Chain 1 (AUX)	(dBm)	(W)		(dBm)	(W)	
802.11ax-HE40	242/61	2422	20.43	20.94	23.70	0.234	6.3	30.00	1.000	<30dBm (1W) (Maximum Peak Output Power) <36dBm (4W) (E.I.R.P)
	242/62	2467	19.54	20.22	22.90	0.195		29.20	0.832	

Note: The results have been included cable loss.

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244, Taiwan

Tel: +886 2 26099301
Fax: +886 2 26099303

Mode	Centre Frequency (MHz)	Peak Output Power (dBm)		Max. Peak Output Power		Antenna Gain (dBi)	Output Power (E.I.R.P.)		Limit
		Chain 0 (Main)	Chain 1 (AUX)	(dBm)	(W)		(dBm)	(W)	
BLE (1M)	2402	4.98	---	4.98	0.0031	6.3	11.28	0.0134	<30dBm (1W) (Maximum Peak Output Power) <36dBm (4W) (E.I.R.P)
	2440	5.47	---	5.47	0.0035		11.77	0.0150	
	2480	5.99	---	5.99	0.0040		12.29	0.0169	
BLE (2M)	2402	5.67	---	5.67	0.0037		11.97	0.0157	
	2440	5.47	---	5.47	0.0035		11.77	0.0150	
	2480	6.12	---	6.12	0.0041		12.42	0.0175	
BLE (PHY Coded S2)	2402	5.17	---	5.17	0.0033		11.47	0.0140	
	2440	5.17	---	5.17	0.0033		11.47	0.0140	
	2480	6.08	---	6.08	0.0041		12.38	0.0173	
BLE (PHY Coded S8)	2402	5.54	---	5.54	0.0036		11.84	0.0153	
	2440	5.69	---	5.69	0.0037		11.99	0.0158	
	2480	5.22	---	5.22	0.0033		11.52	0.0142	

Note: The results have been included cable loss.

A.3.2 Average Output Power (Reporting only)

Test SKU: SKU #1

Mode	Centre Frequency (MHz)	Average Output Power (dBm)		10log (1/X)	Max. Average Output Power		Antenna Gain (dBi)	Average Output Power (E.I.R.P.)		Limit
		Chain 0 (Main)	Chain 1 (AUX)		(dBm)	(W)		(dBm)	(W)	
802.11b	2412	19.74	19.89	0	19.89	0.097	3.2	23.09	0.204	<30dBm (1W) (Maximum Peak Output Power) <36dBm (4W) (E.I.R.P)
	2442	19.82	19.93		19.93	0.098		23.13	0.206	
	2462	19.88	19.97		19.97	0.099		23.17	0.207	
	2467	18.78	18.47		18.78	0.076		21.98	0.158	
	2472	16.87	15.52		16.87	0.049		20.07	0.102	

Mode	Centre Frequency (MHz)	Average Output Power (dBm)		10log (1/X)	Max. Average Output Power		Antenna Gain (dBi)	Average Output Power (E.I.R.P.)		Limit
		Chain 0 (Main)	Chain 1 (AUX)		(dBm)	(W)		(dBm)	(W)	
802.11g	2412	16.61	17.35	0.14 1	17.49	0.056	3.2	20.69	0.117	<30dBm (1W) (Maximum Peak Output Power) <36dBm (4W) (E.I.R.P)
	2417	18.95	18.86		19.09	0.081		22.29	0.169	
	2442	19.44	19.47		19.61	0.091		22.81	0.191	
	2457	17.95	18.42		18.56	0.072		21.76	0.150	
	2462	16.68	16.87		17.01	0.050		20.21	0.105	
	2467	14.42	14.47		14.61	0.029		17.81	0.060	
	2472	11.09	11.08		11.23	0.013		14.43	0.028	

Mode	Centre Frequency (MHz)	Average Output Power (dBm)		10log (1/X)	Total Average Output Power		Antenna Gain (dBi)	Average Output Power (E.I.R.P.)		Limit
		Chain 0 (Main)	Chain 1 (AUX)		(dBm)	(W)		(dBm)	(W)	
802.11n-HT20	2412	15.45	14.60	0	18.06	0.064	3.2	21.26	0.134	<30dBm (1W) (Maximum Peak Output Power) <36dBm (4W) (E.I.R.P)
	2417	16.09	16.78		19.46	0.088		22.66	0.185	
	2422	17.48	17.83		20.67	0.117		23.87	0.244	
	2442	19.02	19.47		22.26	0.168		25.46	0.352	
	2457	17.42	18.28		20.88	0.122		24.08	0.256	
	2462	14.38	14.36		17.38	0.055		20.58	0.114	
	2467	10.92	10.70		13.82	0.024		17.02	0.050	
	2472	7.19	7.98		10.61	0.012		13.81	0.024	

Note: The results have been included cable loss.

Audix Technology Corp.

No. 491, Zhongfu Rd., Linkou Dist.,

New Taipei City 244, Taiwan

Tel: +886 2 26099301

Fax: +886 2 26099303

Mode	Centre Frequency (MHz)	Average Output Power (dBm)		10log (1/X)	Total Average Output Power		Antenna Gain (dBi)	Average Output Power (E.I.R.P.)		Limit
		Chain 0 (Main)	Chain 1 (AUX)		(dBm)	(W)		(dBm)	(W)	
802.11n-HT40	2422	14.31	13.86	0	17.10	0.051	3.2	20.30	0.107	<30dBm (1W) (Maximum Peak Output Power) <36dBm (4W) (E.I.R.P)
	2442	14.93	14.65		17.80	0.060		21.00	0.126	
	2452	13.72	13.71		16.73	0.047		19.93	0.098	
	2457	10.54	10.49		13.53	0.023		16.73	0.047	
	2462	6.36	6.94		9.67	0.009		12.87	0.019	

Note: The results have been included cable loss.

Mode	Centre Frequency (MHz)	Average Output Power (dBm)		10log (1/X)	Total Average Output Power		Antenna Gain (dBi)	Average Output Power (E.I.R.P.)		Limit
		Chain 0 (Main)	Chain 1 (AUX)		(dBm)	(W)		(dBm)	(W)	
802.11ax-HE20	2412	16.80	16.16	0	19.50	0.089	3.2	22.70	0.186	<30dBm (1W) (Maximum Peak Output Power) <36dBm (4W) (E.I.R.P)
	2417	17.70	17.58		20.65	0.116		23.85	0.243	
	2422	18.43	18.11		21.28	0.134		24.48	0.281	
	2442	19.30	19.26		22.29	0.169		25.49	0.354	
	2457	18.13	17.72		20.94	0.124		24.14	0.259	
	2462	14.98	14.34		17.68	0.059		20.88	0.122	
	2467	10.79	10.83		13.82	0.024		17.02	0.050	
	2472	7.86	7.81		10.85	0.012		14.05	0.025	

Note: The results have been included cable loss.

Mode	Centre Frequency (MHz)	Average Output Power (dBm)		10log (1/X)	Total Average Output Power		Antenna Gain (dBi)	Average Output Power (E.I.R.P.)		Limit
		Chain 0	Chain 1		(dBm)	(W)		(dBm)	(W)	
802.11ax-HE40	2422	14.45	14.21	0	17.34	0.054	3.2	20.54	0.113	<30dBm (1W) (Maximum Peak Output Power) <36dBm (4W) (E.I.R.P)
	2442	14.86	14.79		17.84	0.061		21.04	0.127	
	2452	13.43	13.31		16.38	0.043		19.58	0.091	
	2457	10.30	10.46		13.39	0.022		16.59	0.046	
	2462	6.55	6.95		9.76	0.009		12.96	0.020	

Note: The results have been included cable loss.

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244, Taiwan

Tel: +886 2 26099301
Fax: +886 2 26099303

Mode	RU Config	Centre Frequency (MHz)	Average Output Power (dBm)		10log (1/X)	Total Average Output Power		Antenna Gain (dBi)	Average Output Power (E.I.R.P.)		Limit
			Chain 0 (Main)	Chain 1 (AUX)		(dBm)	(W)		(dBm)	(W)	
802.11ax-HE20	26/0	2412	18.30	17.96	0	21.14	0.130	3.2	24.34	0.272	<30dBm (1W) (Maximum Peak Output Power)
	52/37		18.46	18.01		21.25	0.133		24.45	0.279	
	106/53		18.29	18.84		21.58	0.144		24.78	0.301	
	26/8	2472	5.92	5.21		8.59	0.007		11.79	0.015	<36dBm (4W) (E.I.R.P)
	52/40		5.63	5.89		8.77	0.008		11.97	0.016	
	106/54		6.50	6.01		9.27	0.008		12.47	0.018	

Note: The results have been included cable loss.

Mode	RU Config	Centre Frequency (MHz)	Average Output Power (dBm)		10log (1/X)	Total Average Output Power		Antenna Gain (dBi)	Average Output Power (E.I.R.P.)		Limit
			Chain 0 (Main)	Chain 1 (AUX)		(dBm)	(W)		(dBm)	(W)	
802.11ax-HE40	242/61	2422	15.90	15.43	0	18.68	0.074	3.2	21.88	0.154	<30dBm (1W) (Maximum Peak Output Power)
	242/62	2462	8.44	7.77		11.19	0.013		14.39	0.027	

Note: The results have been included cable loss.

Test SKU: SKU #2

Mode	Centre Frequency (MHz)	Average Output Power (dBm)		10log (1/X)	Max. Average Output Power		Antenna Gain (dBi)	Average Output Power (E.I.R.P.)		Limit
		Chain 0 (Main)	Chain 1 (AUX)		(dBm)	(W)		(dBm)	(W)	
802.11b	2412	19.74	19.74	0	19.89	0.097	6.3	26.19	0.416	<30dBm (1W) (Maximum Peak Output Power) <36dBm (4W) (E.I.R.P)
	2442	19.82	19.82		19.93	0.098		26.23	0.420	
	2462	19.88	19.88		19.97	0.099		26.27	0.424	
	2467	18.78	18.78		18.78	0.076		25.08	0.322	
	2472	16.87	16.87		16.87	0.049		23.17	0.207	

Mode	Centre Frequency (MHz)	Average Output Power (dBm)		10log (1/X)	Max. Average Output Power		Antenna Gain (dBi)	Average Output Power (E.I.R.P.)		Limit
		Chain 0 (Main)	Chain 1 (AUX)		(dBm)	(W)		(dBm)	(W)	
802.11g	2412	16.61	17.35	0.14 1	17.49	0.056	6.3	23.79	0.239	<30dBm (1W) (Maximum Peak Output Power) <36dBm (4W) (E.I.R.P)
	2417	18.95	18.86		19.20	0.083		25.50	0.355	
	2442	19.44	19.47		19.61	0.091		25.91	0.390	
	2457	17.95	18.42		18.56	0.072		24.86	0.306	
	2462	16.68	16.87		17.01	0.050		23.31	0.214	
	2467	14.42	14.47		14.61	0.029		20.91	0.123	
	2472	11.09	11.08		11.23	0.013		17.53	0.057	

Mode	Centre Frequency (MHz)	Average Output Power (dBm)		10log (1/X)	Total Average Output Power		Antenna Gain (dBi)	Average Output Power (E.I.R.P.)		Limit
		Chain 0 (Main)	Chain 1 (AUX)		(dBm)	(W)		(dBm)	(W)	
802.11n-HT20	2412	15.45	14.60	0	18.06	0.064	6.3	24.36	0.273	<30dBm (1W) (Maximum Peak Output Power) <36dBm (4W) (E.I.R.P)
	2417	16.09	16.78		19.46	0.088		25.76	0.377	
	2422	17.48	17.83		20.67	0.117		26.97	0.498	
	2442	19.02	19.47		22.26	0.168		28.56	0.718	
	2457	17.42	18.28		20.88	0.122		27.18	0.522	
	2462	14.38	14.36		17.38	0.055		23.68	0.233	
	2467	10.92	10.70		13.82	0.024		20.12	0.103	
	2472	7.19	7.98		10.61	0.012		16.91	0.049	

Note: The results have been included cable loss.

Audix Technology Corp.

No. 491, Zhongfu Rd., Linkou Dist.,

New Taipei City 244, Taiwan

Tel: +886 2 26099301

Fax: +886 2 26099303

Mode	Centre Frequency (MHz)	Average Output Power (dBm)		10log (1/X)	Total Average Output Power		Antenna Gain (dBi)	Average Output Power (E.I.R.P.)		Limit
		Chain 0 (Main)	Chain 1 (AUX)		(dBm)	(W)		(dBm)	(W)	
802.11n-HT40	2422	14.31	13.86	0	17.10	0.051	6.3	23.40	0.219	<30dBm (1W) (Maximum Peak Output Power) <36dBm (4W) (E.I.R.P)
	2442	14.93	14.65		17.80	0.060		24.10	0.257	
	2452	13.72	13.71		16.73	0.047		23.03	0.201	
	2457	10.54	10.49		13.53	0.023		19.83	0.096	
	2462	6.36	6.94		9.67	0.009		15.97	0.040	

Note: The results have been included cable loss.

Mode	Centre Frequency (MHz)	Average Output Power (dBm)		10log (1/X)	Total Average Output Power		Antenna Gain (dBi)	Average Output Power (E.I.R.P.)		Limit
		Chain 0 (Main)	Chain 1 (AUX)		(dBm)	(W)		(dBm)	(W)	
802.11ax-HE20	2412	16.80	16.16	0	19.50	0.089	6.3	25.80	0.380	<30dBm (1W) (Maximum Peak Output Power) <36dBm (4W) (E.I.R.P)
	2417	17.70	17.58		20.65	0.116		26.95	0.495	
	2422	18.43	18.11		21.28	0.134		27.58	0.573	
	2442	19.30	19.26		22.29	0.169		28.59	0.723	
	2457	18.13	17.72		20.94	0.124		27.24	0.530	
	2462	14.98	14.34		17.68	0.059		23.98	0.250	
	2467	10.79	10.83		13.82	0.024		20.12	0.103	
	2472	7.86	7.81		10.85	0.012		17.15	0.052	

Note: The results have been included cable loss.

Mode	Centre Frequency (MHz)	Average Output Power (dBm)		10log (1/X)	Total Average Output Power		Antenna Gain (dBi)	Average Output Power (E.I.R.P.)		Limit
		Chain 0 (Main)	Chain 1 (AUX)		(dBm)	(W)		(dBm)	(W)	
802.11ax-HE40	2422	14.45	14.21	0	17.34	0.054	6.3	23.64	0.231	<30dBm (1W) (Maximum Peak Output Power) <36dBm (4W) (E.I.R.P)
	2442	14.86	14.79		17.84	0.061		24.14	0.259	
	2452	13.43	13.31		16.38	0.043		22.68	0.185	
	2457	10.30	10.46		13.39	0.022		19.69	0.093	
	2462	6.55	6.95		9.76	0.009		16.06	0.040	

Note: The results have been included cable loss.

Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City244, Taiwan

Tel: +886 2 26099301
Fax: +886 2 26099303

Mode	RU Config	Centre Frequency (MHz)	Average Output Power (dBm)		10log (1/X)	Total Average Output Power		Antenna Gain (dBi)	Average Output Power (E.I.R.P.)		Limit
			Chain 0 (Main)	Chain 1 (AUX)		(dBm)	(W)		(dBm)	(W)	
802.11ax-HE20	26/0	2412	18.30	17.96	0	21.14	0.130	6.3	27.44	0.555	<30dBm (1W) (Maximum Peak Output Power)
	52/37		18.46	18.01		21.25	0.133		27.55	0.569	
	106/53		18.29	18.84		21.58	0.144		27.88	0.614	
	26/8	2472	5.92	5.21		8.59	0.007		14.89	0.031	<36dBm (4W) (E.I.R.P)
	52/40		5.63	5.89		8.77	0.008		15.07	0.032	
	106/54		6.50	6.01		9.27	0.008		15.57	0.036	

Note: The results have been included cable loss.

Mode	RU Config	Centre Frequency (MHz)	Average Output Power (dBm)		10log (1/X)	Total Average Output Power		Antenna Gain (dBi)	Average Output Power (E.I.R.P.)		Limit
			Chain 0 (Main)	Chain 1 (AUX)		(dBm)	(W)		(dBm)	(W)	
802.11ax-HE40	242/61	2422	15.90	15.43	0	18.68	0.074	6.3	24.98	0.315	<30dBm (1W) (Maximum Peak Output Power)
	242/62	2462	8.44	7.77		11.19	0.013		17.49	0.056	

Note: The results have been included cable loss.



Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
New Taipei City 244, Taiwan

APPENDIX B

Tel: +886 2 26099301
Fax: +886 2 26099303

APPDNDIX B

TEST PHOTOGRAPHS

(Model: 16Z90Q)