Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
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Tel: +886 2 26099301
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FCC 15.247
(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)17Z90Q (2)17ZB90Q (3)17ZD90Q (4)17ZG90Q**
Brand		**LG**
FCC ID	**:**	**BEJNT-17Z90Q**

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

Testing Laboratory
1724

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)17Z90Q (2)17ZB90Q (3)17ZD90Q (4)17ZG90Q
(3) Brand	:	LG
(4) Power Supply	:	DC 20V, 3.25A

Applicable Standards:

Title 47 CFR FCC Part 15 Subpart C

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. 10

Reviewed by: Tina Huang (Tina Huang/Section Manager)

Approved by: Johnny Hsueh (Johnny Hsueh/Section Manager)

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1. REVISION RECORD OF TEST REPORT

Edition No	Issued Date	Revision Summary	Report Number
0	2022. 06. 10	Original Report	EM-F220381

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2. SUMMARY OF TEST RESULTS

Rule	Description	Results
15.207	Conducted Emission	**PASS**
15.247(d)/15.205	Radiated Band Edge and Radiated Spurious Emission	**N/A, Note 2 & 3**
15.247(a)(2)	DTS/Occupied Bandwidth	**N/A, Note 2**
15.247(b)(3)	Maximum Peak Output Power	**PASS**
15.247(d)	Conducted Band Edges and Conducted Spurious Emission	**N/A, Note 2**
15.247 (e)	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.

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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)17Z90Q (2)17ZB90Q (3)17ZD90Q (4)17ZG90Q The difference between all models is different in the sales customers.
Configuration	17Z90Q-K, 17Z90Q-N, 17Z90Q-A, 17Z90Q-R
Brand	LG

The difference list for Configuration:

Difference / Configuration	Main Board	GPU	TPM (Trusted Platform Module)
17Z90Q-K	Queen MAIN B/D PCB	Intel Iris Xe UHD Graphics	Not Support
17Z90Q-N	Queen MAIN B/D PCB	Intel Iris Xe UHD Graphics	Support
17Z90Q-A	QUEEN NVIDIA MAIN B/D PCB	NVIDIA RTX2050	Not Support
17Z90Q-R	QUEEN NVIDIA MAIN B/D PCB	NVIDIA RTX2050	Support

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3.2. Description of EUT

<table>
<tr><td>Test Model</td><td>17Z90Q</td></tr>
<tr><td>Serial Number</td><td>N/A</td></tr>
<tr><td>Power Rating</td><td>DC 20V, 3.25A</td></tr>
<tr><td>Software Version</td><td>XY (X, Y can be 0 to 9 for different SW version not influence RF parameter)</td></tr>
<tr><td>RF Features</td><td>WLAN:802.11 a/b/g/n/ac/ax
Bluetooth: BT and BLE (BT 5.1)</td></tr>
<tr><td>Transmit Type</td><td>
<table>
<tr><th colspan="2">2.4 GHz</th></tr>
<tr><td>802.11b</td><td>1T1R</td></tr>
<tr><td>802.11g</td><td>1T1R</td></tr>
<tr><td>802.11n-HT20</td><td>2T2R</td></tr>
<tr><td>802.11n-HT40</td><td>2T2R</td></tr>
<tr><td>802.11ax-HE20</td><td>2T2R</td></tr>
<tr><td>802.11ax-HE40</td><td>2T2R</td></tr>
<tr><td>BT/BLE</td><td>1T1R</td></tr>
</table>
<table>
<tr><th colspan="2">U-NII Bands</th></tr>
<tr><td>802.11a</td><td>1T1R</td></tr>
<tr><td>802.11n-HT20/802.11ac-VHT20/802.11ax-HE20</td><td>2T2R</td></tr>
<tr><td>802.11n-HT40/802.11ac-VHT40/802.11ax-HE40</td><td>2T2R</td></tr>
<tr><td>802.11ac-VHT80/802.11ax-HE80</td><td>2T2R</td></tr>
<tr><td>802.11ac-VHT160/802.11ax-HE160</td><td>2T2R</td></tr>
</table>
The MIMO is uncorrelated and supported SDM mode only.
</td></tr>
<tr><td>Test Sample</td><td>
<table>
<tr><th>Sample No.</th><th>Test Item</th><th>Firmware</th></tr>
<tr><td>03</td><td>AC Conduction, RSE, Output Power</td><td>N/A</td></tr>
<tr><td>04</td><td>AC Conduction, RSE</td><td>N/A</td></tr>
</table>
</td></tr>
<tr><td>Sample Status</td><td>Trial sample</td></tr>
<tr><td>Date of Receipt</td><td>2022. 03. 24</td></tr>
<tr><td>Date of Test</td><td>2022. 05. 21 ~ 06. 09</td></tr>
<tr><td>Interface Ports of EUT</td><td>• One Micro SD Card Slot
• Two USB 3.0 Ports
• One HDMI Port
• Two USB Type C Port
• One Earphone Port</td></tr>
<tr><td>Accessories Supplied</td><td>• AC Adapter
• LAN Gender</td></tr>
</table>

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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-17Z90Q is to add new Configuration 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.

Configuration \ Difference		Main Board	GPU	TPM (Trusted Platform Module)
Original	17Z90Q	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	17Z90Q-K	Queen MAIN B/D PCB	Intel Iris Xe UHD Graphics	Not Support
	17Z90Q-N	Queen MAIN B/D PCB	Intel Iris Xe UHD Graphics	Support
	17Z90Q-A	QUEEN NVIDIA MAIN B/D PCB	NVIDIA RTX2050	Not Support
	17Z90Q-R	QUEEN NVIDIA MAIN B/D PCB	NVIDIA RTX2050	Support

Note: 1. The Configuration 17Z90Q-K and 17Z90Q-N with original components were measured in the original application.
2 The Configuration 17Z90Q-A and 17Z90Q-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.

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3.5. Antenna Information

No.	Antenna Part Number	Manufacture	Antenna Type	Frequency (MHz)	Max Gain(dBi)	
					Main	AUX
1.	WA-P-LELE-04-011	INPAQ	Mono-Pole	2400	2.2	1.1
				2450	**3.0**	**1.6**
				2500	2.7	1.5
				5150	**4.1**	**3.8**
				5400	4.0	3.7
				5850	3.7	3.3
				5925	**3.5**	**3.2**
				6525	2.7	2.5
				7125	2.5	2.1
Note 1. 2.4G: Directional gain = 10 log[($10^{3.0/10}$ +$10^{1.6/10}$)/2]= 2.36dBi Note 2. UNII Band (WLAN 5G): Directional gain = 10 log[($10^{4.1/10}$ +$10^{3.8/10}$)/2]= 3.95dBi Note 3. UNII Band (WLAN 6G): Directional gain = 10 log[($10^{3.5/10}$ +$10^{3.2/10}$)/2]= 3.35dBi						
2.	L1LRF009-CS-H	LUXSHARE-ICT	Mono-Pole	2400	-1.45	**2.89**
				2450	0.26	-0.07
				2500	**2.15**	-6.91
				5150	**5.24**	**3.64**
				5400	0.55	1.11
				5850	4.96	2.88
				5925	**5.85**	**2.48**
				6525	1.19	1.38
				7125	3.99	1.89
Note 1. 2.4G: Directional gain = 10 log[($10^{2.15/10}$ +$10^{2.89/10}$)/2]= 2.54dBi Note 2. UNII Band (WLAN 5G): Directional gain = 10 log[($10^{5.24/10}$ +$10^{3.64/10}$)/2]= 4.51dBi Note 3. UNII Band (WLAN 6G): Directional gain = 10 log[($10^{5.85/10}$ +$10^{2.48/10}$)/2]= 4.48dBi						

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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		

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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

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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	17Z90Q 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
17” LCD Panel	LG Display	LP170WQ1(SP)(F2)	Resolution: 2560 x 1600, 60Hz WQXGAIPS (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 PCle M.2 1216 SD adapter card FCC ID: PD9AX211D2 IC: 1000M-AX211D2
WLAN Combo Antenna	LG (INPAQ)	WA-P-LELE-04-011	PCB, Mono-pole Type Main: Black, Aux: Gray
	LG (LUXSHARE-ICT)	L1LRF009-CS-H	PCB, Mono-pole Type Main: Black, Aux: Gray

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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)		

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 (with TPM)**	V	
		LG, QUEEN NVIDIA MAIN B/D PCB (w/o TPM)		V
SUB Board		LG, 17Z90Q Sub B/D (Type A)	V	V
CPU		Intel, i7-1260P	V	V
17" LCD Panel		LG Display, LP170WQ1(SP)(F2)	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-04-011	V	
		LG (LUXSHARE-ICT), L1LRF009-CS-H		V
Type C #1	AC Adapter	LG (HONOR), ADT-65DSU-D03-2	V	V
Type C #2	Link to LAN Gender	MEC	V	V

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3.8. Test Configuration

Mode	TX_{on} (ms)	1/ TX_{on} (kHz)	TX_{on+off} (ms)	Duty Cycle (x)	Duty Cycle Factor [10log(1/x)] (dB)
802.11b	8.360	0.120	8.400	0.995	N/A
802.11g	2.090	0.478	2.130	0.981	N/A
802.11n-HT20	7.920	0.126	7.960	0.995	N/A
802.11n-HT40	7.920	0.126	7.960	0.995	N/A
802.11ax-HE20	3.960	0.253	4.000	0.990	N/A
802.11ax-HE40	3.960	0.253	4.000	0.990	N/A
802.11ax-HE20 (RU Config 26)	5.480	0.182	5.540	0.989	N/A
802.11ax-HE20 (RU Config 52)	3.980	0.251	4.020	0.990	N/A
802.11ax-HE20 (RU Config 106)	3.980	0.251	4.020	0.990	N/A
802.11ax-HE40 (RU Config 242)	5.480	0.182	5.560	0.986	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.

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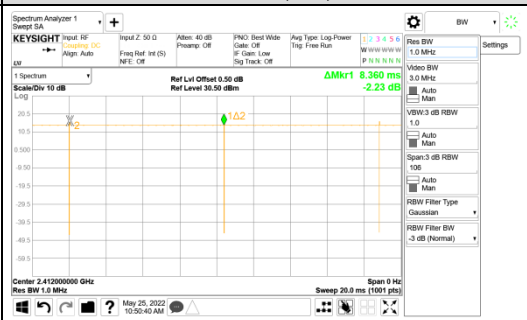
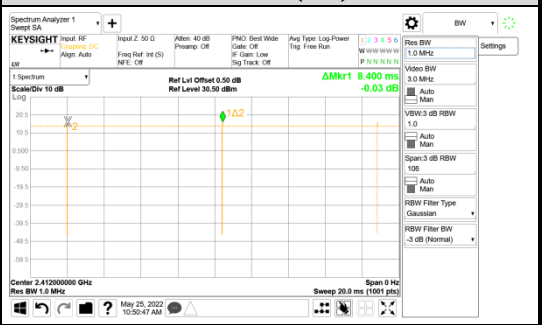
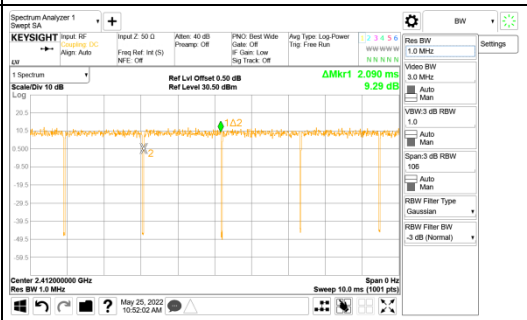
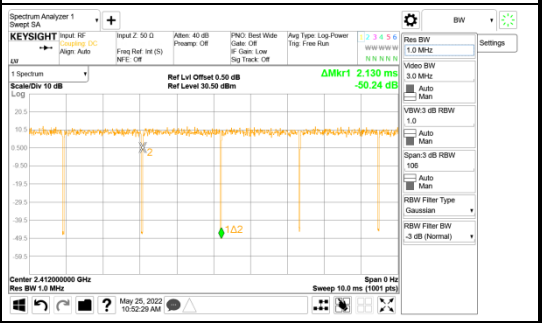
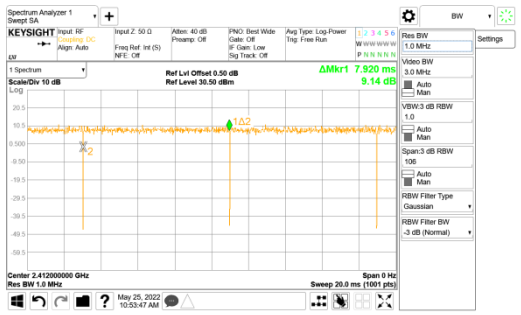
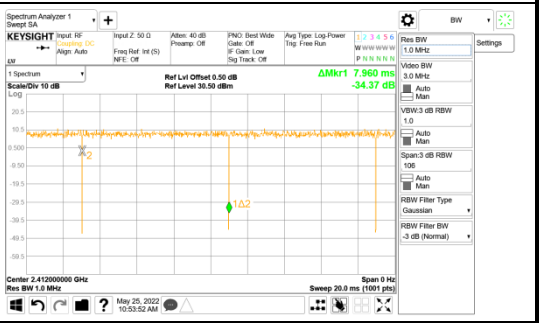
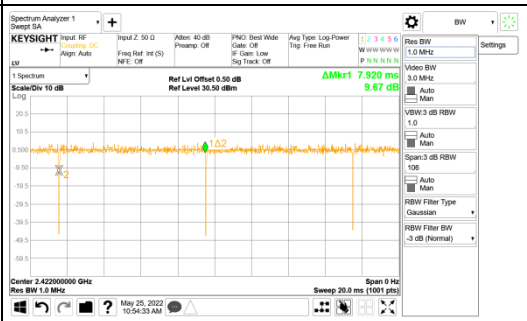
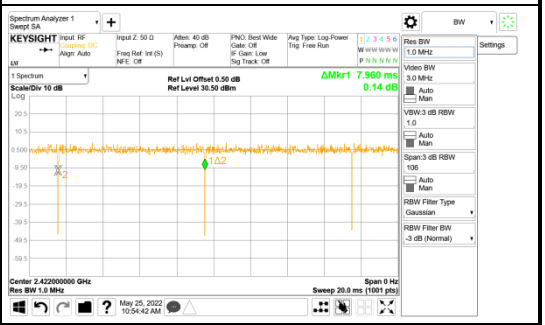
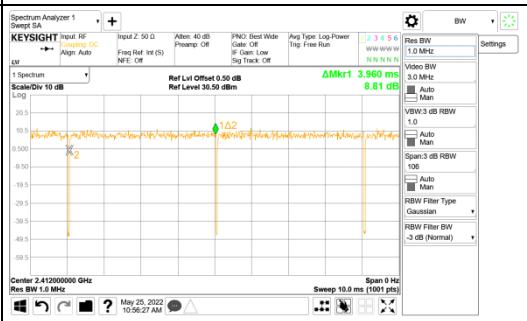
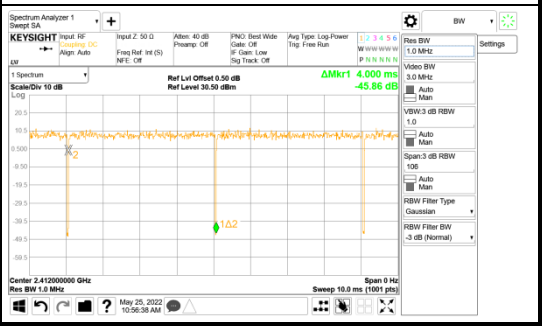
Mode	TX_{on} (ms)	$T_{on}+T_{off}$(ms)
802.11b		
802.11g		
802.11n-HT20		
802.11n-HT40		
802.11ax-HE20		

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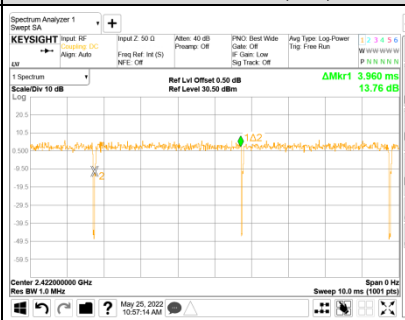
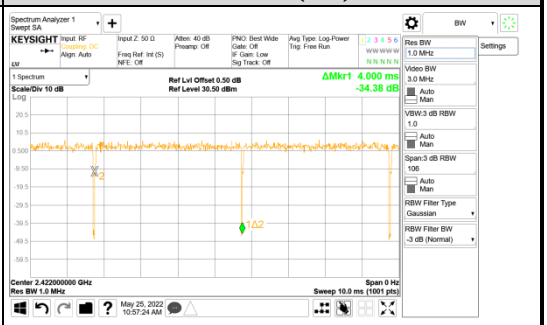
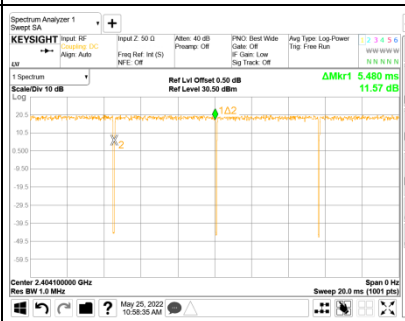
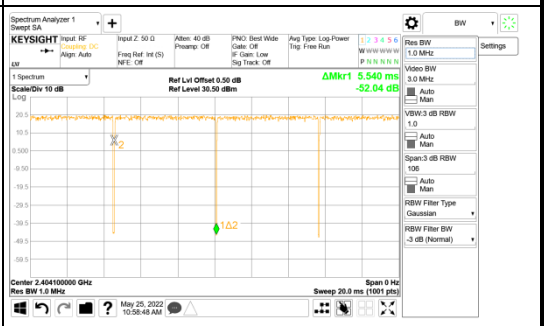
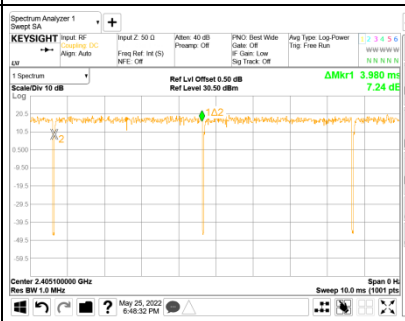
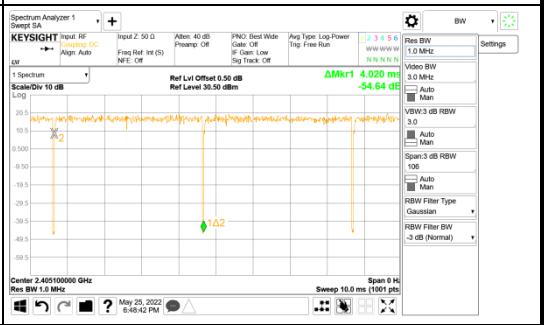
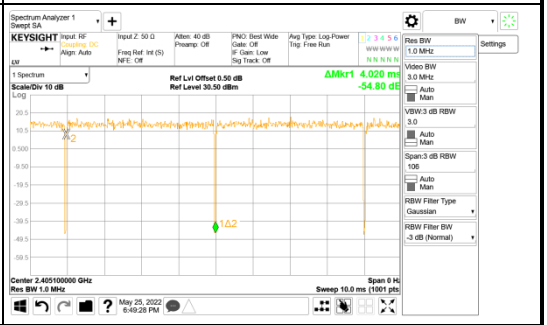
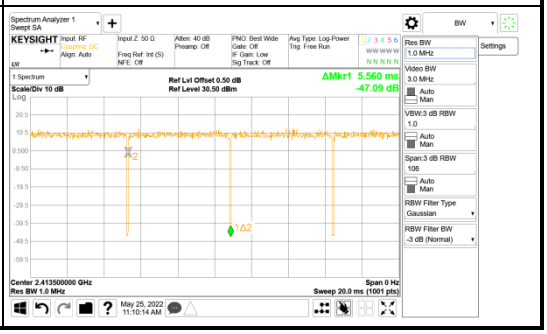
Mode	TX_{on} (ms)	$T_{on}+T_{off}$(ms)
802.11ax-HE40		
802.11ax-HE20 (RU Config 26)		
802.11ax-HE20 (RU Config 52)		
802.11ax-HE20 (RU Config 106)		
802.11ax-HE40 (RU Config 242)		

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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)	802.11n-HT20	MCS8	7
			BLE	2Mbps	39

Item			Mode	Data Rate	Test Channel
Conducted Test Case	SKU #1/ SKU #2	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	SKU #1/ SKU #2	Peak Output Power	802.11ax-HE20	HE0	26/0	1
					52/37	
					106/53	
				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.

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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	14.500	14.500
					2472	11.500	11.500

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			

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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	DENGEKI	P012 (MS-P12)	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: Unshielded, Undetachable, 1.5m
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

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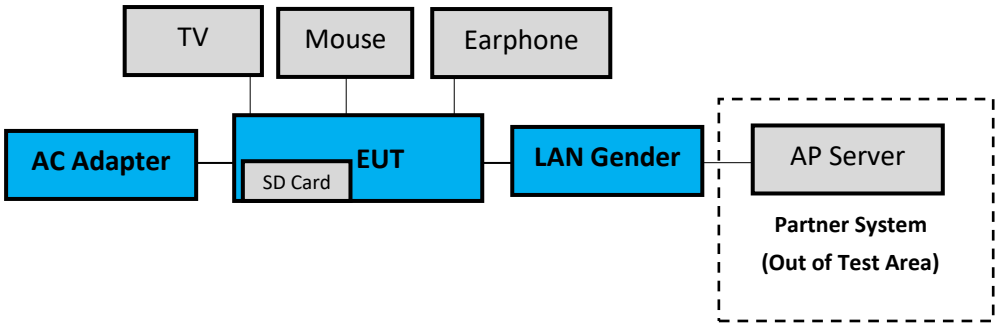
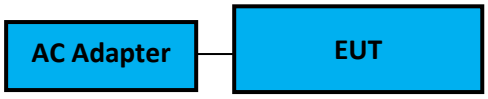
3.11.Setup Configuration

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)].

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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

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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
6dB Bandwidth	± 0.05kHz
Maximum peak output power	± 0.33dB
Power spectral density	± 0.13dB
Conducted Emission Limitations	± 0.13dB

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4. MEASUREMENT EQUIPMENTLIST

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. 13	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.

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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	7NSL10-2441.5/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

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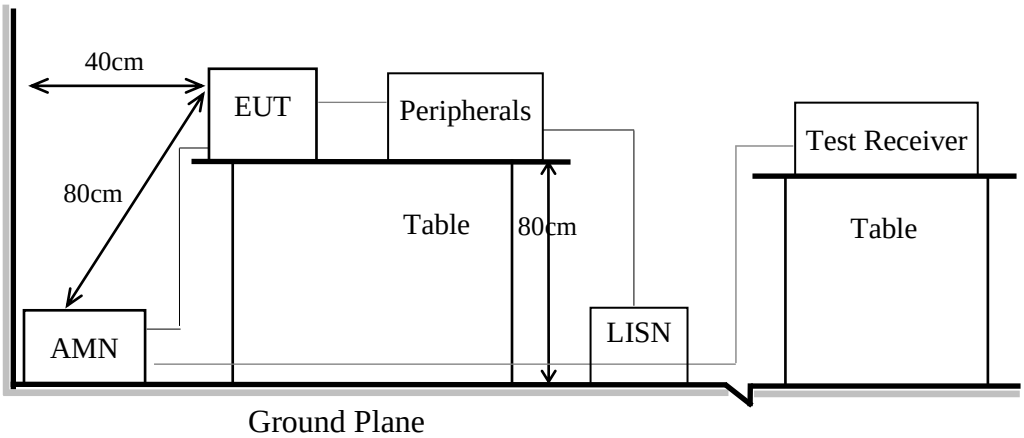
5. CONDUCTED EMISSION

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 dBμV	56 ~ 46 dBμV
500kHz ~ 5MHz	56 dBμV	46 dBμV
5MHz ~ 30MHz	60 dBμV	50 dBμV

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.

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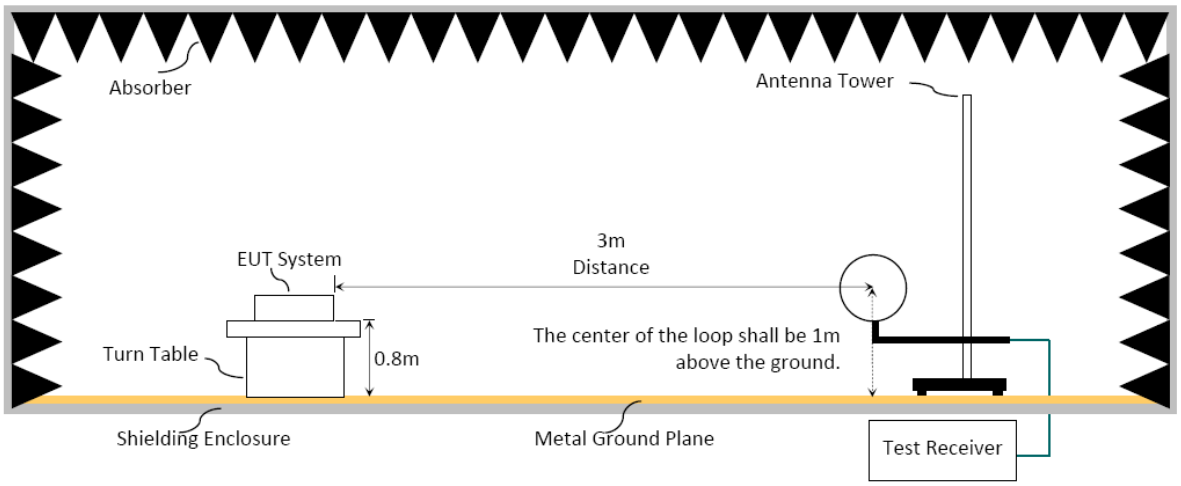
6. RADIATED EMISSION

6.1. Block Diagram of Test Setup

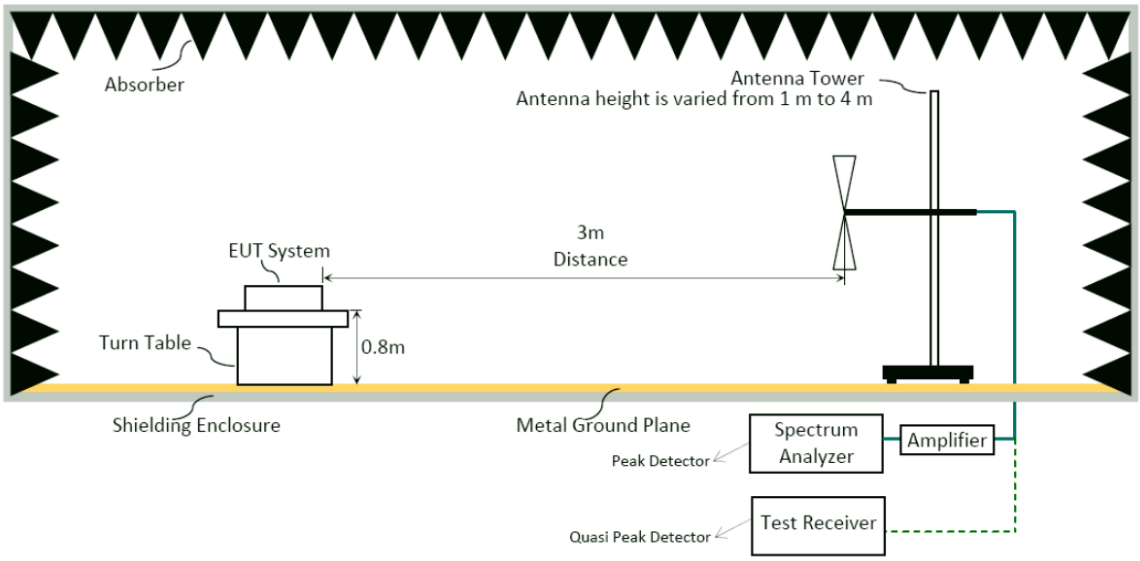
6.1.1. Block Diagram of EUT

Indicated as section 3.11

6.1.2. Setup Diagram for 9kHz-30MHz



6.1.3. Setup Diagram for 30-1000MHz



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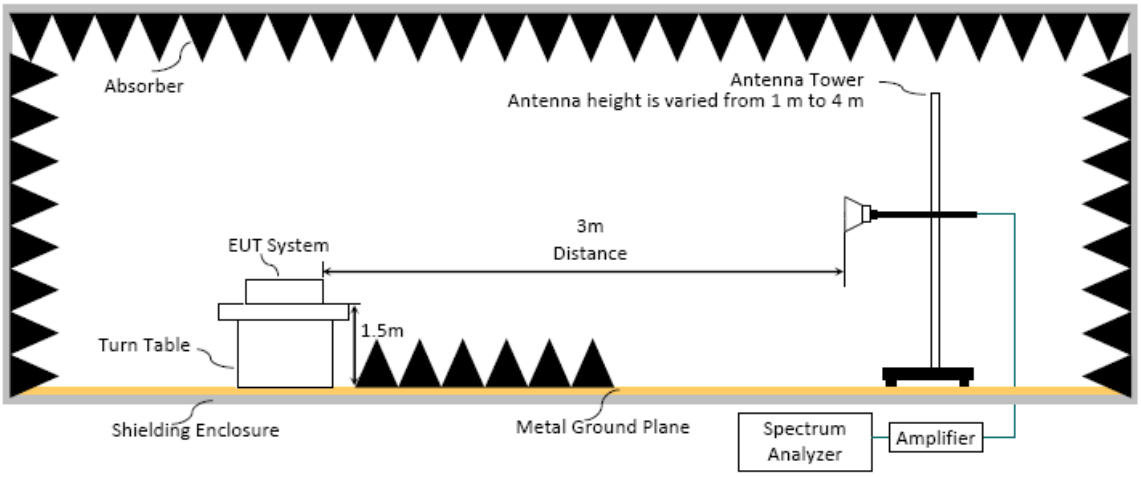
6.1.4. Setup Diagram for above 1GHz



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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, 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) dBμV/m = 20 log (μV/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.

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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 ≥ 3 x 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 ≥ 3 x 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.

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Average Detector:

☐**Option 1:**

(1)RBW = 1MHz
(2)VBW ≥ 1/ T. (Duty Cycle < 98%, when duty cycle presented in section 3.8)
(3)VBW = 10Hz (Duty Cycle ≥ 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.

6.4. Measurement Result Explanation

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

☐Average Emission Level l=Antenna Factor + Cable Loss + Meter Reading (including Preamp factor if test used)

☐Average Emission Level= Peak Emission Level+ DCCF
Duty Cycle Correction Factor (DCCF)= 20log(TX_{on}/TX_{on+off}) presented in section 3.6

☐ERP= Peak Emission Level-95.2dB-2.14dB

6.5. Test Results

Please refer to Appendix A.

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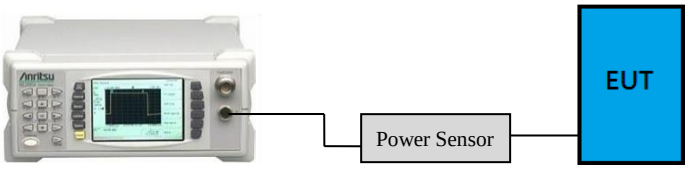
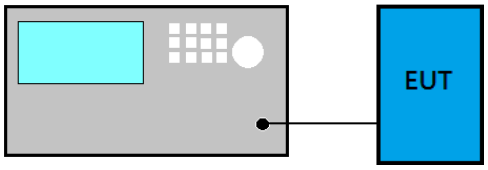
7. MAXIMUM PEAK OUTPUT POWER

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)

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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 ≥ DTS bandwidth
(2) Set VBW ≥ 3 × RBW
(3) Set span ≥ 3 × 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 3.7 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) ≥ 3 × 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 3.7 is < 98%.

7.4. Test Results

Please refer to Appendix A

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8. DEVIATION TO TEST SPECIFICATIONS

【NONE】

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APPDNDIX A

TEST DATA AND PLOTS

(Model: 17Z90Q)

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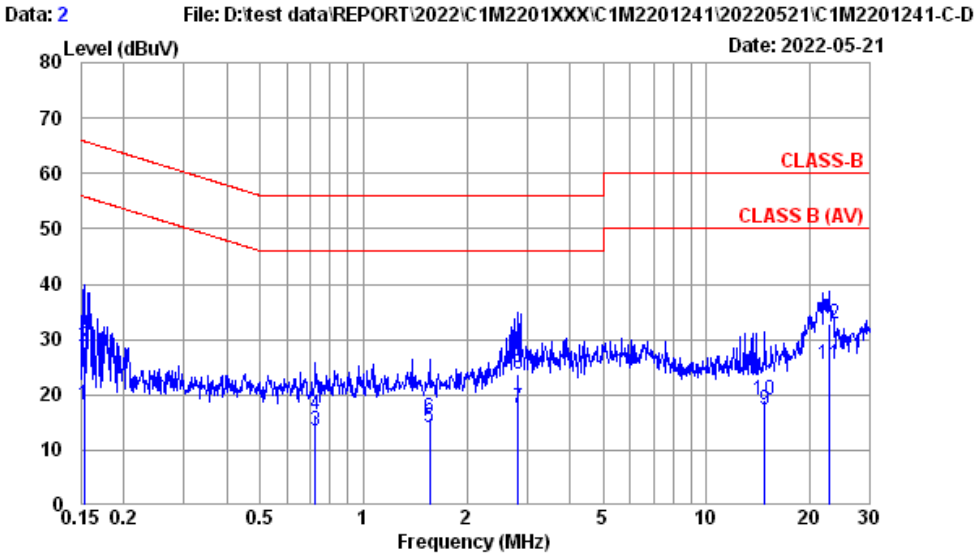
A.1 CONDUCTED EMISSION

Test Date	2022/05/21	Temp./Hum.	24℃/73%
Test Voltage	AC 120V 60Hz (Via AC Adapter)	Tested By	Chucky Chiu
Test SKU	SKU #1 (with INPAQ Antenna)	Test Model	17Z90Q



Site No. : No.8 Shielded Room
Instrument 1 : Receiver ESR3(774)
Instrument 2 : ENV4200 (169)(A)|CE-08|ESH3-Z2 (354)
Limit : CLASS-B
Environment : 24°C / 73%
EUT Model : 17Z90Q
Test Mode : Operating Inpaq

Data No. : 2
Phase : NEUTRAL
Engineer : Chucky Chiu
Test Rating : 120Vac/60Hz

	Freq. (MHz)	AMN Factor (dB)	Cable Loss (dB)	Pulse Att. (dB)	Reading (dBμV)	Emission Level (dBμV)	Limits (dBμV)	Margin (dB)	Remark
1	0.153	10.64	0.03	9.85	-2.36	18.16	55.82	37.66	Average
2	0.153	10.64	0.03	9.85	8.19	28.71	65.82	37.11	QP
3	0.724	10.43	0.04	9.85	-6.80	13.52	46.00	32.48	Average
4	0.724	10.43	0.04	9.85	-3.92	16.40	56.00	39.60	QP
5	1.560	10.45	0.05	9.86	-6.31	14.05	46.00	31.95	Average
6	1.560	10.45	0.05	9.86	-4.43	15.93	56.00	40.07	QP
7	2.824	10.53	0.08	9.86	-2.93	17.54	46.00	28.46	Average
8	2.824	10.53	0.08	9.86	3.28	23.75	56.00	32.25	QP
9	14.750	12.59	0.17	9.91	-5.47	17.20	50.00	32.80	Average
10	14.750	12.59	0.17	9.91	-3.51	19.16	60.00	40.84	QP
11	22.775	14.49	0.21	9.96	0.90	25.56	50.00	24.44	Average
12	22.775	14.49	0.21	9.96	8.16	32.82	60.00	27.18	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.

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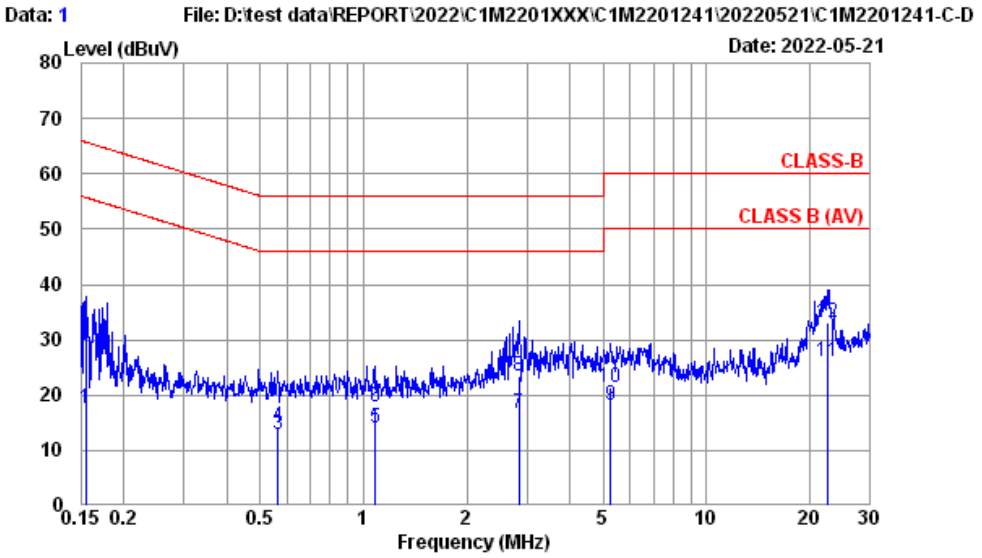
Test Date	2022/05/21	Temp./Hum.	24℃/73%
Test Voltage	AC 120V 60Hz (Via AC Adapter)	Tested By	Chucky Chiu
Test SKU	SKU #1 (with INPAQ Antenna)	Test Model	17Z90Q



Site No. : No.8 Shielded Room
Instrument 1 : Receiver ESR3(774)
Instrument 2 : ENV4200 (169)(A)|CE-08|ESH3-Z2 (354)
Limit : CLASS-B
Environment : 24*C / 73%
EUT Model : 17Z90Q
Test Mode : Operating
Inpaq

Data No. : 1
Phase : LINE
Engineer : Chucky Chiu
Test Rating : 120Vac/60Hz

	Freq. (MHz)	AMN Factor (dB)	Cable Loss (dB)	Pulse Att. (dB)	Reading (dBμV)	Emission Level (dBμV)	Limits (dBμV)	Margin (dB)	Remark
1	0.155	10.59	0.03	9.85	-2.99	17.48	55.74	38.26	Average
2	0.155	10.59	0.03	9.85	10.18	30.65	65.74	35.09	QP
3	0.564	10.41	0.03	9.85	-7.31	12.98	46.00	33.02	Average
4	0.564	10.41	0.03	9.85	-5.88	14.41	56.00	41.59	QP
5	1.082	10.40	0.04	9.85	-6.19	14.10	46.00	31.90	Average
6	1.082	10.40	0.04	9.85	-2.31	17.98	56.00	38.02	QP
7	2.839	10.48	0.08	9.86	-3.60	16.82	46.00	29.18	Average
8	2.839	10.48	0.08	9.86	2.90	23.32	56.00	32.68	QP
9	5.249	10.69	0.10	9.87	-2.59	18.07	50.00	31.93	Average
10	5.249	10.69	0.10	9.87	0.72	21.38	60.00	38.62	QP
11	22.416	13.66	0.20	9.95	2.19	26.00	50.00	24.00	Average
12	22.416	13.66	0.20	9.95	9.36	33.17	60.00	26.83	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.

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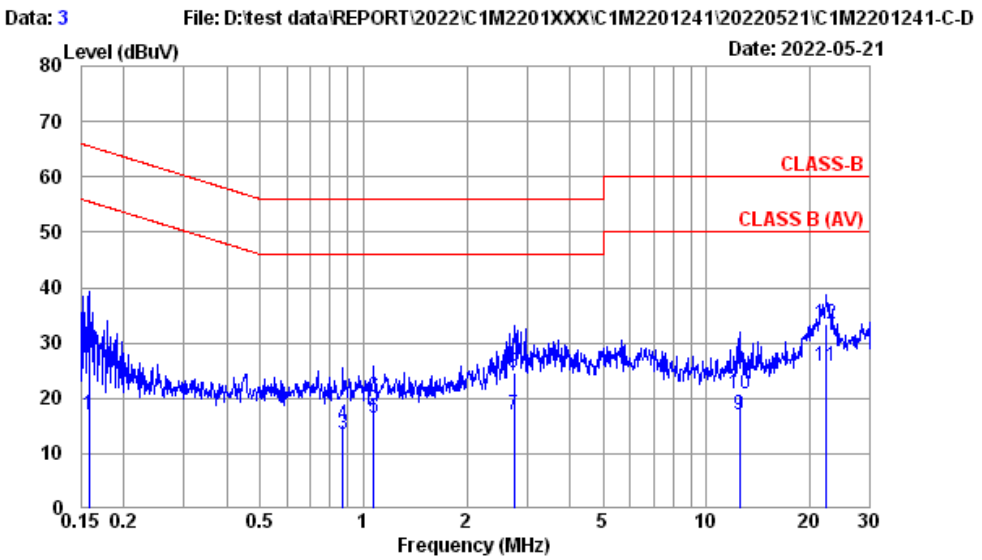
Test Date	2022/05/21	Temp./Hum.	24℃/73%
Test Voltage	AC 120V 60Hz (Via AC Adapter)	Tested By	Chucky Chiu
Test SKU	SKU #2 (with LUXSHARE-ICT Antenna)	Test Model	17Z90Q



Site No. : No.8 Shielded Room
Instrument 1 : Receiver ESR3(774)
Instrument 2 : ENV4200 (169)(A)|CE-08|ESH3-Z2 (354)
Limit : CLASS-B
Environment : 24*C / 73%
EUT Model : 17Z90Q
Test Mode : Operating
Luxshare

Data No. : 3
Phase : NEUTRAL
Engineer : Chucky Chiu
Test Rating : 120Vac/60Hz

	Freq. (MHz)	AMN Factor (dB)	Cable Loss (dB)	Pulse Att. (dB)	Reading (dBμV)	Emission Level (dBμV)	Limits (dBμV)	Margin (dB)	Remark
1	0.158	10.64	0.03	9.85	-3.55	16.97	55.56	38.59	Average
2	0.158	10.64	0.03	9.85	8.65	29.17	65.56	36.39	QP
3	0.871	10.42	0.04	9.85	-6.71	13.60	46.00	32.40	Average
4	0.871	10.42	0.04	9.85	-5.13	15.18	56.00	40.82	QP
5	1.071	10.42	0.04	9.85	-3.76	16.55	46.00	29.45	Average
6	1.071	10.42	0.04	9.85	-0.07	20.24	56.00	35.76	QP
7	2.750	10.53	0.07	9.86	-3.51	16.95	46.00	29.05	Average
8	2.750	10.53	0.07	9.86	4.14	24.60	56.00	31.40	QP
9	12.449	12.04	0.15	9.90	-5.09	17.00	50.00	33.00	Average
10	12.449	12.04	0.15	9.90	-1.32	20.77	60.00	39.23	QP
11	22.298	14.34	0.20	9.95	1.34	25.83	50.00	24.17	Average
12	22.298	14.34	0.20	9.95	8.81	33.30	60.00	26.70	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.

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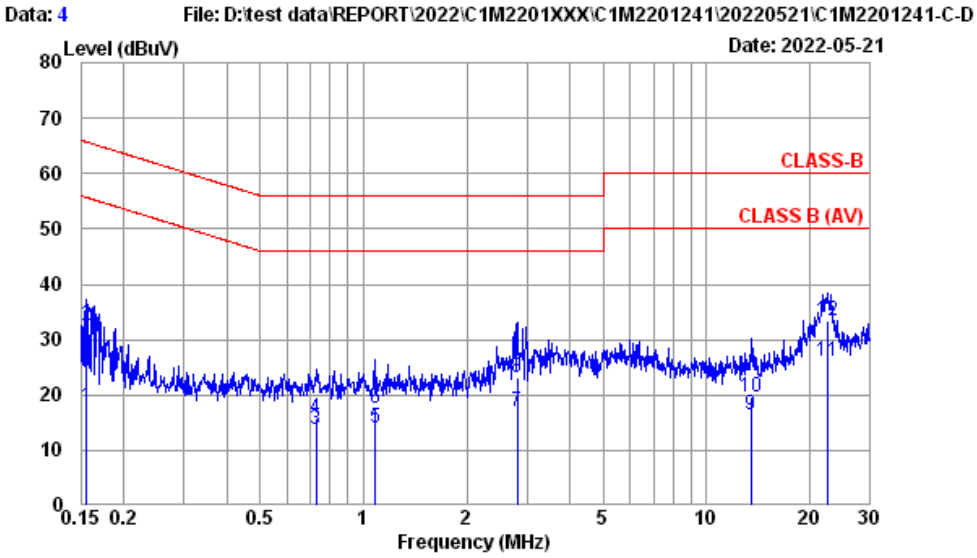
Test Date	2022/05/21	Temp./Hum.	24℃/73%
Test Voltage	AC 120V 60Hz (Via AC Adapter)	Tested By	Chucky Chiu
Test SKU	SKU #2 (with LUXSHARE-ICT Antenna)	Test Model	17Z90Q



Site No. : No.8 Shielded Room
Instrument 1 : Receiver ESR3(774)
Instrument 2 : ENV4200 (169)(A)|CE-08|ESH3-Z2 (354)
Limit : CLASS-B
Environment : 24*C / 73%
EUT Model : 17Z90Q
Test Mode : Operating
Luxshare

Data No. : 4
Phase : LINE
Engineer : Chucky Chiu
Test Rating : 120Vac/60Hz

	Freq. (MHz)	AMN Factor (dB)	Cable Loss (dB)	Pulse Att. (dB)	Reading (dBμV)	Emission Level (dBμV)	Limits (dBμV)	Margin (dB)	Remark
1	0.156	10.59	0.03	9.85	-2.65	17.82	55.69	37.87	Average
2	0.156	10.59	0.03	9.85	11.92	32.39	65.69	33.30	QP
3	0.727	10.41	0.04	9.85	-6.57	13.73	46.00	32.27	Average
4	0.727	10.41	0.04	9.85	-4.54	15.76	56.00	40.24	QP
5	1.082	10.40	0.04	9.85	-6.26	14.03	46.00	31.97	Average
6	1.082	10.40	0.04	9.85	-2.83	17.46	56.00	38.54	QP
7	2.809	10.48	0.07	9.86	-3.53	16.88	46.00	29.12	Average
8	2.809	10.48	0.07	9.86	2.61	23.02	56.00	32.98	QP
9	13.479	11.86	0.16	9.90	-5.38	16.54	50.00	33.46	Average
10	13.479	11.86	0.16	9.90	-2.27	19.65	60.00	40.35	QP
11	22.416	13.66	0.20	9.95	2.13	25.94	50.00	24.06	Average
12	22.416	13.66	0.20	9.95	9.62	33.43	60.00	26.57	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.

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A.2 RADIATED EMISSION

Test Date	2022/05/26 ~ 06/09	Temp./Hum.	22 ~ 25℃/65 ~ 69%
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

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
33.880	22.12	1.51	26.48	27.15	24.30	40.00	15.70	Peak
124.090	17.75	2.90	26.13	37.52	32.04	43.50	11.46	Peak
207.510	15.63	3.80	25.77	42.17	35.83	43.50	7.67	Peak
345.250	20.21	5.29	26.01	36.07	35.56	46.00	10.44	Peak
482.990	22.84	6.63	27.01	33.27	35.73	46.00	10.27	Peak
830.250	26.06	8.38	27.18	32.36	39.62	46.00	6.38	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
43.580	17.10	1.70	26.47	34.41	26.74	40.00	13.26	Peak
125.060	17.71	2.92	26.13	35.93	30.43	43.50	13.07	Peak
207.510	15.63	3.80	25.77	37.29	30.95	43.50	12.55	Peak
346.220	20.24	5.31	26.01	31.60	31.14	46.00	14.86	Peak
483.960	22.87	6.64	27.04	33.96	36.43	46.00	9.57	Peak
828.310	26.05	8.36	27.20	31.58	38.79	46.00	7.21	Peak

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Mode	BLE (2Mbps)	Frequency	TX 2480MHz

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
124.090	17.75	2.90	26.13	36.35	30.87	43.50	12.63	Peak
206.540	15.54	3.78	25.77	41.49	35.04	43.50	8.46	Peak
250.190	18.21	4.26	25.69	36.47	33.25	46.00	12.75	Peak
299.660	19.05	4.68	25.61	34.08	32.20	46.00	13.80	Peak
483.960	22.87	6.64	27.04	35.51	37.98	46.00	8.02	Peak
831.220	26.06	8.38	27.18	33.58	40.84	46.00	5.16	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
138.640	17.03	3.08	26.05	38.03	32.09	43.50	11.41	Peak
207.510	15.63	3.80	25.77	41.57	35.23	43.50	8.27	Peak
345.250	20.21	5.29	26.01	31.84	31.33	46.00	14.67	Peak
415.090	21.67	6.06	26.53	31.58	32.78	46.00	13.22	Peak
484.930	22.89	6.65	27.04	35.98	38.48	46.00	7.52	Peak
795.330	25.91	8.18	27.28	33.68	40.49	46.00	5.51	Peak

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

Mode	802.11ax-HE20	Frequency	TX 2442MHz

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
40.670	18.57	1.65	26.47	31.55	25.30	40.00	14.70	Peak
144.460	16.68	3.14	26.02	40.22	34.02	43.50	9.48	Peak
167.740	15.40	3.39	25.91	43.37	36.25	43.50	7.25	Peak
207.510	15.63	3.80	25.77	43.17	36.83	43.50	6.67	Peak
276.380	18.67	4.49	25.64	39.97	37.49	46.00	8.51	Peak
346.220	20.24	5.31	26.01	36.95	36.49	46.00	9.51	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
40.670	18.57	1.65	26.47	34.36	28.11	40.00	11.89	Peak
124.090	17.75	2.90	26.13	37.15	31.67	43.50	11.83	Peak
207.510	15.63	3.80	25.77	34.14	27.80	43.50	15.70	Peak
345.250	20.21	5.29	26.01	33.86	33.35	46.00	12.65	Peak
485.900	22.89	6.65	27.04	30.96	33.46	46.00	12.54	Peak
659.530	24.59	7.43	27.42	31.84	36.44	46.00	9.56	Peak

Mode	BLE (2Mbps)	Frequency	TX 2480MHz

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
31.940	22.86	1.46	26.48	31.14	28.98	40.00	11.02	Peak
85.290	13.89	2.43	26.33	35.70	25.69	40.00	14.31	Peak
135.730	17.18	3.04	26.07	37.51	31.66	43.50	11.84	Peak
207.510	15.63	3.80	25.77	39.53	33.19	43.50	10.31	Peak
346.220	20.24	5.31	26.01	37.33	36.87	46.00	9.13	Peak
482.990	22.84	6.63	27.01	33.79	36.25	46.00	9.75	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
32.910	22.52	1.48	26.48	32.82	30.34	40.00	9.66	Peak
124.090	17.75	2.90	26.13	36.26	30.78	43.50	12.72	Peak
156.100	15.94	3.26	25.97	39.40	32.63	43.50	10.87	Peak
207.510	15.63	3.80	25.77	41.26	34.92	43.50	8.58	Peak
415.090	21.67	6.06	26.53	32.68	33.88	46.00	12.12	Peak
483.960	22.87	6.64	27.04	33.70	36.17	46.00	9.83	Peak

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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	802.11n-HT20	Frequency	TX 2442MHz

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
4884.000	33.40	8.64	31.67	32.23	42.60	54.00	11.40	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
4884.000	33.40	8.64	31.67	31.99	42.36	54.00	11.64	Peak

Mode	BLE (2Mbps)	Frequency	TX 2480MHz

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
4960.000	33.55	8.74	31.64	32.57	43.22	54.00	10.78	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
4960.000	33.55	8.74	31.64	31.33	41.98	54.00	12.02	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) general radiated emissions limits is not required.

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A.3 MAXIMUM PEAK OUTPUT POWER

Test Date	2022/05/30	Temp./Hum.	25°C/58%
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		Max. Antenna Gain (dBi)	Output Power (E.I.R.P.)		Limit
		Chain 0 (AUX)	Chain 1 (Main)	(dBm)	(W)		(dBm)	(W)	
802.11b	2412	22.82	23.14	23.14	0.206	3.0	26.14	0.411	<30dBm (1W) (Maximum Peak Output Power) <36dBm (4W) (E.I.R.P)
	2442	23.09	23.27	**23.27**	**0.212**		**26.27**	**0.424**	
	2462	23.11	23.24	23.24	0.211		26.24	0.421	
	2467	22.67	22.86	22.86	0.193		25.86	0.385	
	2472	20.17	19.99	20.17	0.104		23.17	0.207	

Mode	Centre Frequency (MHz)	Peak Output Power (dBm)		Max. Peak Output Power		Max. Antenna Gain (dBi)	Output Power (E.I.R.P.)		Limit
		Chain 0 (AUX)	Chain 1 (Main)	(dBm)	(W)		(dBm)	(W)	
802.11g	2412	21.15	22.10	22.10	0.162	3.0	25.10	0.324	<30dBm (1W) (Maximum Peak Output Power) <36dBm (4W) (E.I.R.P)
	2417	23.42	23.02	23.42	0.220		26.42	0.439	
	2442	23.52	23.33	**23.52**	**0.225**		**26.52**	**0.449**	
	2457	22.64	23.19	23.19	0.208		26.19	0.416	
	2462	20.87	21.79	21.79	0.151		24.79	0.301	
	2467	19.14	18.96	19.14	0.082		22.14	0.164	
	2472	15.63	16.01	16.01	0.040		19.01	0.080	

Note: The results have been included cable loss.

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Mode	Centre Frequency (MHz)	Peak Output Power (dBm)		Total Peak Output Power		Directional Gain (dBi)	Output Power (E.I.R.P.)		Limit
		Chain 0 (AUX)	Chain 1 (Main)	(dBm)	(W)		(dBm)	(W)	
802.11n-HT20	2412	20.32	19.56	22.97	0.198	3.0	25.97	0.395	<30dBm (1W) (Maximum Peak Output Power) <36dBm (4W) (E.I.R.P)
	2417	21.38	21.51	24.46	0.279		27.46	0.557	
	2422	22.43	22.94	25.70	0.372		28.70	0.741	
	2442	23.42	24.02	**26.74**	**0.472**		**29.74**	**0.942**	
	2457	22.30	22.80	25.57	0.361		28.57	0.719	
	2462	19.96	19.67	22.83	0.192		25.83	0.383	
	2467	15.84	15.29	18.58	0.072		21.58	0.144	
	2472	12.89	13.24	16.08	0.041		19.08	0.081	

Mode	Centre Frequency (MHz)	Peak Output Power (dBm)		Total Peak Output Power		Directional Gain (dBi)	Output Power (E.I.R.P.)		Limit
		Chain 0 (AUX)	Chain 1 (Main)	(dBm)	(W)		(dBm)	(W)	
802.11n-HT40	2422	20.51	19.98	23.26	0.212	3.0	26.26	0.423	<30dBm (1W) (Maximum Peak Output Power) <36dBm (4W) (E.I.R.P)
	2442	21.20	21.70	**24.47**	**0.280**		**27.47**	**0.558**	
	2452	19.78	19.68	22.74	0.188		25.74	0.375	
	2457	18.01	17.11	20.59	0.115		23.59	0.229	
	2462	14.79	14.46	17.64	0.058		20.64	0.116	

Mode	Centre Frequency (MHz)	Peak Output Power (dBm)		Total Peak Output Power		Directional Gain (dBi)	Output Power (E.I.R.P.)		Limit
		Chain 0 (AUX)	Chain 1 (Main)	(dBm)	(W)		(dBm)	(W)	
802.11ax-HE20	2412	20.67	20.15	23.43	0.220	3.0	26.43	0.440	<30dBm (1W) (Maximum Peak Output Power) <36dBm (4W) (E.I.R.P)
	2417	21.14	21.31	24.24	0.265		27.24	0.530	
	2422	22.60	22.14	25.39	0.346		28.39	0.690	
	2442	23.45	23.76	**26.62**	**0.459**		**29.62**	**0.916**	
	2457	22.94	24.04	26.54	0.451		29.54	0.899	
	2462	19.96	20.00	22.99	0.199		25.99	0.397	
	2467	15.87	15.87	18.88	0.077		21.88	0.154	
	2472	13.76	13.38	16.58	0.045		19.58	0.091	

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Mode	Centre Frequency (MHz)	Peak Output Power (dBm)		Total Peak Output Power		Directional Gain (dBi)	Output Power (E.I.R.P.)		Limit
		Chain 0 (AUX)	Chain 1 (Main)	(dBm)	(W)		(dBm)	(W)	
802.11ax-HE40	2422	20.31	20.44	23.39	0.218	3.0	26.39	0.436	<30dBm (1W) (Maximum Peak Output Power) <36dBm (4W) (E.I.R.P)
	2442	21.47	20.98	**24.24**	**0.265**		**27.24**	**0.530**	
	2452	19.94	19.91	22.94	0.197		25.94	0.393	
	2457	17.26	17.52	20.40	0.110		23.40	0.219	
	2462	14.20	13.23	16.75	0.047		19.75	0.094	

Mode	RU Configuration	Centre Frequency (MHz)	Peak Output Power (dBm)		Total Peak Output Power		Directional Gain (dBi)	Output Power (E.I.R.P.)		Limit
			Chain 0 (AUX)	Chain 1 (Main)	(dBm)	(W)		(dBm)	(W)	
802.11ax-HE20	26/0	2412	23.02	22.26	25.67	0.369	3.0	28.67	0.736	<30dBm (1W) (Maximum Peak Output Power) <36dBm (4W) (E.I.R.P)
	52/37		23.61	23.31	**26.47**	0.444		29.47	0.885	
	106/53		23.27	22.40	25.87	0.386		28.87	0.771	
	26/8	2472	18.50	18.43	21.48	0.141		24.48	0.281	
	52/40		19.14	19.31	22.24	0.167		25.24	0.334	
	106/54		19.16	18.75	21.97	0.157		24.97	0.314	

Mode	RU Configuration	Centre Frequency (MHz)	Peak Output Power (dBm)		Total Peak Output Power		Directional Gain (dBi)	Output Power (E.I.R.P.)		Limit
			Chain 0 (AUX)	Chain 1 (Main)	(dBm)	(W)		(dBm)	(W)	
802.11ax-HE40	242/61	2422	21.10	20.09	23.63	0.231	3.0	26.63	0.460	<30dBm (1W) (Maximum Peak Output Power) <36dBm (4W) (E.I.R.P)
	242/62	2467	20.75	20.60	23.69	0.234		26.69	0.467	

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Mode	Centre Frequency (MHz)	Peak Output Power (dBm)		Peak Output Power		AUX Max. Antenna Gain (dBi)	Output Power (E.I.R.P.)		Limit
		Chain 0 (AUX)	Chain 1 (Main)	(dBm)	(W)		(dBm)	(W)	
BLE (1Mbps)	2402	5.13	---	5.13	0.0033	1.6	6.73	0.0047	<30dBm (1W) (Maximum Peak Output Power) <36dBm (4W) (E.I.R.P)
	2440	5.77	---	5.77	0.0038		7.37	0.0055	
	2480	5.51	---	5.51	0.0036		7.11	0.0051	
BLE (2Mbps)	2402	5.87	---	5.87	0.0039		7.47	0.0056	
	2440	5.67	---	5.67	0.0037		7.27	0.0053	
	2480	6.11	---	5.91	0.0039		7.51	0.0056	
BLE (PHY Coded S2)	2402	5.66	---	5.46	0.0035		7.06	0.0051	
	2440	5.26	---	5.26	0.0034		6.86	0.0049	
	2480	5.29	---	5.29	0.0034		6.89	0.0049	
BLE (PHY Coded S8)	2402	5.23	---	5.23	0.0033		6.83	0.0048	
	2440	5.59	---	5.59	0.0036		7.19	0.0052	
	2480	5.31	---	5.31	0.0034		6.91	0.0049	

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Test SKU: SKU #2

Mode	Centre Frequency (MHz)	Peak Output Power (dBm)		Max. Peak Output Power		Max. Antenna Gain (dBi)	Output Power (E.I.R.P.)		Limit
		Chain 0 (AUX)	Chain 1 (Main)	(dBm)	(W)		(dBm)	(W)	
802.11b	2412	22.82	23.14	23.14	0.206	2.89	26.03	0.401	<30dBm (1W) (Maximum Peak Output Power) <36dBm (4W) (E.I.R.P)
	2442	23.09	23.27	**23.27**	**0.212**		**26.16**	**0.413**	
	2462	23.11	23.24	23.24	0.211		26.13	0.410	
	2467	22.67	22.86	22.86	0.193		25.75	0.376	
	2472	20.17	19.99	20.17	0.104		23.06	0.202	

Mode	Centre Frequency (MHz)	Peak Output Power (dBm)		Max. Peak Output Power		Max. Antenna Gain (dBi)	Output Power (E.I.R.P.)		Limit
		Chain 0 (AUX)	Chain 1 (Main)	(dBm)	(W)		(dBm)	(W)	
802.11g	2412	21.15	22.10	22.10	0.162	2.89	24.99	0.316	<30dBm (1W) (Maximum Peak Output Power) <36dBm (4W) (E.I.R.P)
	2417	23.42	23.02	23.42	0.220		26.31	0.428	
	2442	23.52	23.33	**23.52**	**0.225**		**26.41**	**0.438**	
	2457	22.64	23.19	23.19	0.208		26.08	0.406	
	2462	20.87	21.79	21.79	0.151		24.68	0.294	
	2467	19.14	18.96	19.14	0.082		22.03	0.160	
	2472	15.63	16.01	16.01	0.040		18.90	0.078	

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Mode	Centre Frequency (MHz)	Peak Output Power (dBm)		Total Peak Output Power		Directional Gain (dBi)	Output Power (E.I.R.P.)		Limit
		Chain 0 (AUX)	Chain 1 (Main)	(dBm)	(W)		(dBm)	(W)	
802.11n-HT20	2412	20.32	19.56	22.97	0.198	2.89	25.86	0.385	<30dBm (1W) (Maximum Peak Output Power) <36dBm (4W) (E.I.R.P)
	2417	21.38	21.51	24.46	0.279		27.35	0.543	
	2422	22.43	22.94	25.70	0.372		28.59	0.723	
	2442	23.42	24.02	**26.74**	**0.472**		**29.63**	**0.918**	
	2457	22.30	22.80	25.57	0.361		28.46	0.701	
	2462	19.96	19.67	22.83	0.192		25.72	0.373	
	2467	15.84	15.29	18.58	0.072		21.47	0.140	
	2472	12.89	13.24	16.08	0.041		18.97	0.079	

Mode	Centre Frequency (MHz)	Peak Output Power (dBm)		Total Peak Output Power		Directional Gain (dBi)	Output Power (E.I.R.P.)		Limit
		Chain 0 (AUX)	Chain 1 (Main)	(dBm)	(W)		(dBm)	(W)	
802.11n-HT40	2422	20.51	19.98	23.26	0.212	2.89	26.15	0.412	<30dBm (1W) (Maximum Peak Output Power) <36dBm (4W) (E.I.R.P)
	2442	21.20	21.70	**24.47**	**0.280**		**27.36**	**0.545**	
	2452	19.78	19.68	22.74	0.188		25.63	0.366	
	2457	18.01	17.11	20.59	0.115		23.48	0.223	
	2462	14.79	14.46	17.64	0.058		20.53	0.113	

Mode	Centre Frequency (MHz)	Peak Output Power (dBm)		Total Peak Output Power		Directional Gain (dBi)	Output Power (E.I.R.P.)		Limit
		Chain 0 (AUX)	Chain 1 (Main)	(dBm)	(W)		(dBm)	(W)	
802.11ax-HE20	2412	20.67	20.15	23.43	0.220	2.89	26.32	0.429	<30dBm (1W) (Maximum Peak Output Power) <36dBm (4W) (E.I.R.P)
	2417	21.14	21.31	24.24	0.265		27.13	0.516	
	2422	22.60	22.14	25.39	0.346		28.28	0.673	
	2442	23.45	23.76	**26.62**	**0.459**		**29.51**	**0.893**	
	2457	22.94	24.04	26.54	0.451		29.43	0.877	
	2462	19.96	20.00	22.99	0.199		25.88	0.387	
	2467	15.87	15.87	18.88	0.077		21.77	0.150	
	2472	13.76	13.38	16.58	0.045		19.47	0.089	

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Mode	Centre Frequency (MHz)	Peak Output Power (dBm)		Total Peak Output Power		Directional Gain (dBi)	Output Power (E.I.R.P.)		Limit
		Chain 0 (AUX)	Chain 1 (Main)	(dBm)	(W)		(dBm)	(W)	
802.11ax-HE40	2422	20.31	20.44	23.39	0.218	2.89	26.28	0.425	<30dBm (1W) (Maximum Peak Output Power) <36dBm (4W) (E.I.R.P)
	2442	21.47	20.98	**24.24**	**0.265**		**27.13**	**0.516**	
	2452	19.94	19.91	22.94	0.197		25.83	0.383	
	2457	17.26	17.52	20.40	0.110		23.29	0.213	
	2462	14.20	13.23	16.75	0.047		19.64	0.092	

Mode	RU Configuration	Centre Frequency (MHz)	Peak Output Power (dBm)		Total Peak Output Power		Directional Gain (dBi)	Output Power (E.I.R.P.)		Limit
			Chain 0 (AUX)	Chain 1 (Main)	(dBm)	(W)		(dBm)	(W)	
802.11ax-HE20	26/0	2412	23.02	22.26	25.67	0.369	2.89	28.56	0.718	<30dBm (1W) (Maximum Peak Output Power) <36dBm (4W) (E.I.R.P)
	52/37		23.61	23.31	**26.47**	**0.444**		**29.36**	**0.863**	
	106/53		23.27	22.40	25.87	0.386		28.76	0.752	
	26/8	2472	18.50	18.43	21.48	0.141		24.37	0.274	
	52/40		19.14	19.31	22.24	0.167		25.13	0.326	
	106/54		19.16	18.75	21.97	0.157		24.86	0.306	

Mode	RU Configuration	Centre Frequency (MHz)	Peak Output Power (dBm)		Total Peak Output Power		Directional Gain (dBi)	Output Power (E.I.R.P.)		Limit
			Chain 0 (AUX)	Chain 1 (Main)	(dBm)	(W)		(dBm)	(W)	
802.11ax-HE40	242/61	2422	21.10	20.09	23.63	0.231	2.89	26.52	0.449	<30dBm (1W) (Maximum Peak Output Power) <36dBm (4W) (E.I.R.P)
	242/62	2467	20.75	20.60	**23.69**	**0.234**		**26.58**	**0.455**	

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Mode	Centre Frequency (MHz)	Peak Output Power (dBm)		Peak Output Power		AUX Max. Antenna Gain (dBi)	Output Power (E.I.R.P.)		Limit
		Chain 0 (AUX)	Chain 1 (Main)	(dBm)	(W)		(dBm)	(W)	
BLE (1Mbps)	2402	5.13	---	5.13	0.0033	2.89	8.02	0.0063	<30dBm (1W) (Maximum Peak Output Power) <36dBm (4W) (E.I.R.P)
	2440	5.77	---	5.77	0.0038		8.66	0.0073	
	2480	5.51	---	5.51	0.0036		8.40	0.0069	
BLE (2Mbps)	2402	5.87	---	5.87	0.0039		8.76	0.0075	
	2440	5.67	---	5.67	0.0037		8.56	0.0072	
	2480	6.11	---	**5.91**	**0.0039**		**8.80**	**0.0076**	
BLE (PHY Coded S2)	2402	5.66	---	5.46	0.0035		8.35	0.0068	
	2440	5.26	---	5.26	0.0034		8.15	0.0065	
	2480	5.29	---	5.29	0.0034		8.18	0.0066	
BLE (PHY Coded S8)	2402	5.23	---	5.23	0.0033		8.12	0.0065	
	2440	5.59	---	5.59	0.0036		8.48	0.0070	
	2480	5.31	---	5.31	0.0034		8.20	0.0066	

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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		Max. Antenna Gain (dBi)	Average Output Power (E.I.R.P.)		Limit
		Chain 0 (AUX)	Chain 1 (Main)		(dBm)	(W)		(dBm)	(W)	
802.11b	2412	19.84	19.81	N/A	**19.84**	**0.096**	**3.0**	**22.84**	**0.192**	<30dBm (1W) (Maximum Peak Output Power) <36dBm (4W) (E.I.R.P)
	2442	19.34	19.64		19.64	0.092		22.64	0.184	
	2462	19.48	19.63		19.63	0.092		22.63	0.183	
	2467	18.32	18.51		18.51	0.071		21.51	0.142	
	2472	16.34	15.43		16.34	0.043		19.34	0.086	

Mode	Centre Frequency (MHz)	Average Output Power (dBm)		10log (1/X)	Max. Average Output Power		Max. Antenna Gain (dBi)	Average Output Power (E.I.R.P.)		Limit
		Chain 0 (AUX)	Chain 1 (Main)		(dBm)	(W)		(dBm)	(W)	
802.11g	2412	16.55	16.54	N/A	16.55	0.045	3.0	19.55	0.090	<30dBm (1W) (Maximum Peak Output Power) <36dBm (4W) (E.I.R.P)
	2417	18.67	18.64		18.67	0.074		21.67	0.147	
	2442	19.22	19.33		**19.33**	**0.086**		**22.33**	**0.171**	
	2457	18.44	17.93		18.44	0.070		21.44	0.139	
	2462	16.18	16.68		16.68	0.047		19.68	0.093	
	2467	14.03	14.48		14.48	0.028		17.48	0.056	
	2472	11.32	11.05		11.32	0.014		14.32	0.027	

Mode	Centre Frequency (MHz)	Average Output Power (dBm)		10log (1/X)	Total Average Output Power		Directional Gain (dBi)	Average Output Power (E.I.R.P.)		Limit
		Chain 0 (AUX)	Chain 1 (Main)		(dBm)	(W)		(dBm)	(W)	
802.11n-HT20	2412	15.03	14.99	N/A	18.02	0.063	3.0	21.02	0.126	<30dBm (1W) (Maximum Peak Output Power) <36dBm (4W) (E.I.R.P)
	2417	16.59	16.54		19.58	0.091		22.58	0.181	
	2422	17.63	17.49		20.57	0.114		23.57	0.228	
	2442	19.28	18.96		**22.13**	**0.163**		**25.13**	**0.326**	
	2457	17.48	17.53		20.52	0.113		23.52	0.225	
	2462	14.50	14.00		17.27	0.053		20.27	0.106	
	2467	10.59	10.41		13.51	0.022		16.51	0.045	
	2472	7.96	7.30		10.65	0.012		13.65	0.023	

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Mode	Centre Frequency (MHz)	Average Output Power (dBm)		10log (1/X)	Total Average Output Power		Directional Gain (dBi)	Average Output Power (E.I.R.P.)		Limit
		Chain 0 (AUX)	Chain 1 (Main)		(dBm)	(W)		(dBm)	(W)	
802.11n-HT40	2422	14.06	14.37	N/A	17.23	0.053	3.0	20.23	0.105	<30dBm (1W) (Maximum Peak Output Power) <36dBm (4W) (E.I.R.P)
	2442	14.83	14.91		**17.88**	0.061		**20.88**	**0.122**	
	2452	13.93	13.67		16.81	0.048		19.81	0.096	
	2457	10.95	11.28		14.13	0.026		17.13	0.052	
	2462	6.44	6.37		9.42	0.009		12.42	0.017	

Mode	Centre Frequency (MHz)	Average Output Power (dBm)		10log (1/X)	Total Average Output Power		Directional Gain (dBi)	Average Output Power (E.I.R.P.)		Limit
		Chain 0 (AUX)	Chain 1 (Main)		(dBm)	(W)		(dBm)	(W)	
802.11ax-HE20	2412	16.21	16.29	N/A	19.26	0.084	3.0	22.26	0.168	<30dBm (1W) (Maximum Peak Output Power) <36dBm (4W) (E.I.R.P)
	2417	17.36	17.57		20.48	0.112		23.48	0.223	
	2422	17.86	17.31		20.60	0.115		23.60	0.229	
	2442	18.97	18.97		**21.98**	**0.158**		**24.98**	**0.315**	
	2457	18.06	17.99		21.04	0.127		24.04	0.254	
	2462	14.67	14.47		17.58	0.057		20.58	0.114	
	2467	11.00	10.71		13.87	0.024		16.87	0.049	
	2472	8.10	7.80		10.96	0.012		13.96	0.025	

Mode	Centre Frequency (MHz)	Average Output Power (dBm)		10log (1/X)	Total Average Output Power		Directional Gain (dBi)	Average Output Power (E.I.R.P.)		Limit
		Chain 0 (AUX)	Chain 1 (Main)		(dBm)	(W)		(dBm)	(W)	
802.11ax-HE40	2422	13.98	13.75	N/A	16.88	0.049	3.0	19.88	0.097	<30dBm (1W) (Maximum Peak Output Power) <36dBm (4W) (E.I.R.P)
	2442	14.91	14.97		**17.95**	**0.062**		**20.95**	**0.124**	
	2452	13.35	13.24		16.31	0.043		19.31	0.085	
	2457	11.30	10.77		14.05	0.025		17.05	0.051	
	2462	6.37	6.58		9.49	0.009		12.49	0.018	

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Mode	RU Config	Centre Frequency (MHz)	Average Output Power (dBm)		10log (1/X)	Total Average Output Power		Directional Gain (dBi)	Average Output Power (E.I.R.P.)		Limit
			Chain 0 (AUX)	Chain 1 (Main)		(dBm)	(W)		(dBm)	(W)	
802.11ax-HE20	26/0	2412	18.43	17.66	N/A	21.07	0.128	3.0	24.07	0.255	<30dBm (1W) (Maximum Peak Output Power) <36dBm (4W) (E.I.R.P)
	52/37		18.13	18.25		21.20	0.132		24.20	0.263	
	106/53		18.41	18.53		**21.48**	**0.141**		**24.48**	**0.281**	
	26/8	2472	5.14	4.80		7.98	0.006		10.98	0.013	
	52/40		5.66	6.35		9.03	0.008		12.03	0.016	
	106/54		6.35	5.89		9.14	0.008		12.14	0.016	

Mode	RU Config	Centre Frequency (MHz)	Average Output Power (dBm)		10log (1/X)	Total Average Output Power		Directional Gain (dBi)	Average Output Power (E.I.R.P.)		Limit
			Chain 0 (AUX)	Chain 1 (Main)		(dBm)	(W)		(dBm)	(W)	
802.11ax-HE40	242/61	2422	16.06	15.03	N/A	**18.59**	**0.072**	3.0	**21.59**	**0.144**	<30dBm (1W) (Maximum Peak Output Power) <36dBm (4W) (E.I.R.P)
	242/62	2462	8.32	8.16		11.25	0.013		14.25	0.027	

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Test SKU: SKU #2

Mode	Centre Frequency (MHz)	Average Output Power (dBm)		10log (1/X)	Max. Average Output Power		Max. Antenna Gain (dBi)	Average Output Power (E.I.R.P.)		Limit
		Chain 0 (AUX)	Chain 1 (Main)		(dBm)	(W)		(dBm)	(W)	
802.11b	2412	19.84	19.81	N/A	**19.84**	**0.096**	2.89	**22.73**	**0.187**	<30dBm (1W) (Maximum Peak Output Power) <36dBm (4W) (E.I.R.P)
	2442	19.34	19.64		19.64	0.092		22.53	0.179	
	2462	19.48	19.63		19.63	0.092		22.52	0.179	
	2467	18.32	18.51		18.51	0.071		21.40	0.138	
	2472	16.34	15.43		16.34	0.043		19.23	0.084	

Mode	Centre Frequency (MHz)	Average Output Power (dBm)		10log (1/X)	Max. Average Output Power		Max. Antenna Gain (dBi)	Average Output Power (E.I.R.P.)		Limit
		Chain 0 (AUX)	Chain 1 (Main)		(dBm)	(W)		(dBm)	(W)	
802.11g	2412	16.55	16.54	N/A	16.55	0.045	2.89	19.44	0.088	<30dBm (1W) (Maximum Peak Output Power) <36dBm (4W) (E.I.R.P)
	2417	18.67	18.64		18.67	0.074		21.56	0.143	
	2442	19.22	19.33		**19.33**	**0.086**		**22.22**	**0.167**	
	2457	18.44	17.93		18.44	0.070		21.33	0.136	
	2462	16.18	16.68		16.68	0.047		19.57	0.091	
	2467	14.03	14.48		14.48	0.028		17.37	0.055	
	2472	11.32	11.05		11.32	0.014		14.21	0.026	

Mode	Centre Frequency (MHz)	Average Output Power (dBm)		10log (1/X)	Total Average Output Power		Directional Gain (dBi)	Average Output Power (E.I.R.P.)		Limit
		Chain 0 (AUX)	Chain 1 (Main)		(dBm)	(W)		(dBm)	(W)	
802.11n-HT20	2412	15.03	14.99	N/A	18.02	0.063	2.89	20.91	0.123	<30dBm (1W) (Maximum Peak Output Power) <36dBm (4W) (E.I.R.P)
	2417	16.59	16.54		19.58	0.091		22.47	0.177	
	2422	17.63	17.49		20.57	0.114		23.46	0.222	
	2442	19.28	18.96		**22.13**	**0.163**		**25.02**	**0.318**	
	2457	17.48	17.53		20.52	0.113		23.41	0.219	
	2462	14.50	14.00		17.27	0.053		20.16	0.104	
	2467	10.59	10.41		13.51	0.022		16.40	0.044	
	2472	7.96	7.30		10.65	0.012		13.54	0.023	

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Mode	Centre Frequency (MHz)	Average Output Power (dBm)		10log (1/X)	Total Average Output Power		Directional Gain (dBi)	Average Output Power (E.I.R.P.)		Limit
		Chain 0 (AUX)	Chain 1 (Main)		(dBm)	(W)		(dBm)	(W)	
802.11n-HT40	2422	14.06	14.37	N/A	17.23	0.053	2.89	20.12	0.103	<30dBm (1W) (Maximum Peak Output Power) <36dBm (4W) (E.I.R.P)
	2442	14.83	14.91		**17.88**	0.061		**20.77**	**0.119**	
	2452	13.93	13.67		16.81	0.048		19.70	0.093	
	2457	10.95	11.28		14.13	0.026		17.02	0.050	
	2462	6.44	6.37		9.42	0.009		12.31	0.017	

Mode	Centre Frequency (MHz)	Average Output Power (dBm)		10log (1/X)	Total Average Output Power		Directional Gain (dBi)	Average Output Power (E.I.R.P.)		Limit
		Chain 0 (AUX)	Chain 1 (Main)		(dBm)	(W)		(dBm)	(W)	
802.11ax-HE20	2412	16.21	16.29	N/A	19.26	0.084	2.89	22.15	0.164	<30dBm (1W) (Maximum Peak Output Power) <36dBm (4W) (E.I.R.P)
	2417	17.36	17.57		20.48	0.112		23.37	0.217	
	2422	17.86	17.31		20.60	0.115		23.49	0.223	
	2442	18.97	18.97		**21.98**	**0.158**		**24.87**	**0.307**	
	2457	18.06	17.99		21.04	0.127		23.93	0.247	
	2462	14.67	14.47		17.58	0.057		20.47	0.111	
	2467	11.00	10.71		13.87	0.024		16.76	0.047	
	2472	8.10	7.80		10.96	0.012		13.85	0.024	

Mode	Centre Frequency (MHz)	Average Output Power (dBm)		10log (1/X)	Total Average Output Power		Directional Gain (dBi)	Average Output Power (E.I.R.P.)		Limit
		Chain 0 (AUX)	Chain 1 (Main)		(dBm)	(W)		(dBm)	(W)	
802.11ax-HE40	2422	13.98	13.75	N/A	16.88	0.049	2.89	19.77	0.095	<30dBm (1W) (Maximum Peak Output Power) <36dBm (4W) (E.I.R.P)
	2442	14.91	14.97		**17.95**	**0.062**		**20.84**	**0.121**	
	2452	13.35	13.24		16.31	0.043		19.20	0.083	
	2457	11.30	10.77		14.05	0.025		16.94	0.049	
	2462	6.37	6.58		9.49	0.009		12.38	0.017	

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Mode	RU Config	Centre Frequency (MHz)	Average Output Power (dBm)		10log (1/X)	Total Average Output Power		Directional Gain (dBi)	Average Output Power (E.I.R.P.)		Limit
			Chain 0 (AUX)	Chain 1 (Main)		(dBm)	(W)		(dBm)	(W)	
802.11ax-HE20	26/0	2412	18.43	17.66	N/A	21.07	0.128	2.89	23.96	0.249	<30dBm (1W) (Maximum Peak Output Power) <36dBm (4W) (E.I.R.P)
	52/37		18.13	18.25		21.20	0.132		24.09	0.256	
	106/53		18.41	18.53		**21.48**	**0.141**		**24.37**	**0.274**	
	26/8	2472	5.14	4.80		7.98	0.006		10.87	0.012	
	52/40		5.66	6.35		9.03	0.008		11.92	0.016	
	106/54		6.35	5.89		9.14	0.008		12.03	0.016	

Mode	RU Config	Centre Frequency (MHz)	Average Output Power (dBm)		10log (1/X)	Total Average Output Power		Directional Gain (dBi)	Average Output Power (E.I.R.P.)		Limit
			Chain 0 (AUX)	Chain 1 (Main)		(dBm)	(W)		(dBm)	(W)	
802.11ax-HE40	242/61	2422	16.06	15.03	N/A	**18.59**	**0.072**	2.89	**21.48**	**0.141**	<30dBm (1W) (Maximum Peak Output Power) <36dBm (4W) (E.I.R.P)
	242/62	2462	8.32	8.16		11.25	0.013		14.14	0.026	

Note: The results have been included cable loss.

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APPDNDIX B

TEST PHOTOGRAPHS

(Model: 17Z90Q)

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