*Audix Technology Corp.*
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# FCC 15.247 & RSS-247
# 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)16U75R (2)16UD75R (3)16UB75R (4)16UG75R** |
| **Brand** | | **LG** |
| **FCC ID** | : | **BEJNT-16U75R** |
| **IC** | : | **2703H-16U75R** |

| | | |
|---|---|---|
| **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

| | | |
|---|---|---|
| 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)16U75R (2)16UD75R (3)16UB75R (4)16UG75R |
| (3) Brand | : | LG |
| (4) Power Supply | : | DC 19V, 3.42A |

Applicable Standards:

Title 47 CFR FCC Part 15 Subpart C
RSS-Gen (Issue 5), Amendment 2, February 2021
RSS-247 (Issue 2), February 2017
ANSI C63.10:2013

***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: 2023. 03. 17

Reviewed by: Annie Yu (Annie Yu/Administrator)

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



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# 1. REVISION RECORD OF TEST REPORT

| Edition No | Issued Data | Revision Summary | Report Number |
|---|---|---|---|
| 0 | 2023. 03. 17 | Original Report | EM-F230156 |



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# 2. SUMMARY OF TEST RESULTS

| Rule | | Description | Results |
|---|---|---|---|
| FCC | IC | | |
| 15.207 | RSS-Gen §8.8 | Conducted Emission | **PASS** |
| 15.247(d)/<br>15.205 | RSS-Gen §8.9<br>RSS-247 §5.5 | Radiated Band Edge and<br>Radiated Spurious Emission | **PASS** |
| 15.247(a)(2) | RSS-247 §5.2(1) | DTS/Occupied Bandwidth | **PASS** |
| 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<br>Conducted Spurious Emission | **PASS** |
| 15.247 (e) | RSS-247 §5.2(2) | Peak Power Spectral Density | **PASS** |
| 15.203 | --- | Antenna Requirement | **Compliance** |
| Note: The uncertainties value is not used in determining the result. | | | |



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# 3. GENERAL INFORMATION

## 3.1. Description of Application

| | |
|---|---|
| Applicant | LG Electronics Inc.<br>222, LG-ro, Jinwi-myeon Pyeongtaek-Si, Gyeonggi-Do, 17709 Republic of Korea |
| Manufacturer | LG Electronics Inc.<br>222, LG-ro, Jinwi-myeon Pyeongtaek-Si, Gyeonggi-Do, 17709 Republic of Korea |
| Factory | LG Electronics Nanjing New Technology Co., Ltd.<br>No.346,Yaoxin Road, Economic & Technical Development Zone, Nanjing, China. |
| Product | Notebook Computer |
| Model | (1)16U75R (2)16UD75R (3)16UB75R (4)16UG75R<br>The difference between all models is different in the sales customers and color difference. |
| Brand | LG |


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## 3.2. Description of EUT

<table>
<tr><td>Test Model</td><td>16U75R</td></tr>
<tr><td>Serial Number</td><td>N/A</td></tr>
<tr><td>Power Rating</td><td>DC 19V, 3.42A</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<br>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(Spatial Division Multiplexing) mode only. This radio device doesn't support beamforming and Cyclic Delay Diversity (CDD).
</td></tr>
<tr><td>Sample Status</td><td>Trial sample</td></tr>
<tr><td>Test Sample</td><td>
<table>
<tr><th>Sample No.</th><th>Test Item</th><th>Firmware</th></tr>
<tr><td>01</td><td>AC Conduction, RSE, Output Power</td><td>N/A</td></tr>
</table>
</td></tr>
<tr><td>Date of Receipt</td><td>2023. 03. 03</td></tr>
<tr><td>Date of Test</td><td>2023. 03. 07 ~ 13</td></tr>
<tr><td>Interface Ports of EUT</td><td>• One USB Type C Port<br>• One Earphone Port<br>• One HDMI Port<br>• One DC In Port<br>• One Memory Card Slot<br>• Two USB 3.0 Ports</td></tr>
<tr><td>Accessories Supplied</td><td>• AC Adapter<br>• LAN Gender</td></tr>
</table>



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## 3.3. Reference Test Guidance

KDB 662911 D01 Multiple Transmitter Output v02r01
ANSI C63.10:2013

## 3.4. Antenna Information

| No. | Antenna Part Number | Manufacture | Antenna Type | Frequency (MHz) | Gain(dBi) | |
|---|---|---|---|---|---|---|
| | | | | | Main | AUX |
| 1. | WA-P-LE-02-080 | INPAQ | Mono-Pole | 2400 | 2.6 | 2.7 |
| | | | | 2450 | 2.7 | 2.2 |
| | | | | 2500 | 2.4 | 1.5 |
| | | | | 5150 | 2.6 | 2.3 |
| | | | | 5400 | 2.7 | 2.4 |
| | | | | 5850 | 2.8 | 2.2 |
| | | | | 5925 | 2.6 | 1.6 |
| | | | | 6525 | 2.2 | 2.0 |
| | | | | 7125 | 2.1 | 2.6 |

According to KDB 662911 D01 d) ii), transmit signals are completely uncorrelated, then
Directional gain = $10 \log[(10^{G1/10} + 10^{G2/10} + \ldots + 10^{GN/10})/N_{ANT}]$ dBi
Note : WLAN 2.4GHz: Directional gain =
2400MHz: Directional gain = $10 \log[(10^{2.6/10} + 10^{2.7/10})/2] = 2.65$dBi
2450MHz: Directional gain = $10 \log[(10^{2.7/10} + 10^{2.2/10})/2] = 2.46$dBi
We chose the antenna gain corresponding to the frequency listed on the table which is closer to center frequency of WLAN/BT.


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## 3.5. 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 (1Mbps, 2Mbps, 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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## 3.6. Descriptions of Key Components

### 3.6.1. For the All Component Lists

| Item | Supplier | Model / Type | Character |
|---|---|---|---|
| System | Microsoft | Win11 Home | --- |
| | | Win11 Pro | |
| Main Board | LG | 16U75R MAIN B/D | Manufacturer:<br>#1 Hannstar Board Tech (Jiang Yin) Corp.,Ltd.<br>#2 Elec&Eltek Company (MCO) Limited. |
| WLAN SUB Board | LG | 16U75R SUB B/D | Manufacturer:<br>#1 HannstarBoardTech(Jiang Yin)Corp.,Ltd.<br>#2Elec&Eltek Company (MCO) Limited. |
| CPU<br>(Socket: BGA1744) | Intel | i7-1365U | 1.8GHz |
| | Intel | i5-1345U | 1.6GHz |
| 16” LCD Panel | LG Display | LP160WU1 | WUXGA (1920*1200) IPS LCD |
| | LG Display | LP160WQ1 | WQXGA (2560*1600) IPS LCD, 60Hz |
| Storage (SSD) | SK hynix | --- | 256GB |
| | | --- | 512GB |
| | | --- | 1TB |
| | Samsung | --- | 256GB |
| | | --- | 512GB |
| | | --- | 1TB |
| Memory (RAM) | Samsung | --- | 16GB LPDDR5x(On Board) |
| | | --- | 8GB LPDDR5x(On Board) |
| | SK Hynix | --- | 16GB LPDDR5x(On Board) |
| | | --- | 8GB LPDDR5x(On Board) |
| Battery Pack | LG | LBZ722DM | 72Wh, DC7.76V, Typ9279mAh |
| WLAN Combo Card | Intel | AX211D2W | WLAN and BT, 2x2 PCle M.2 1216 SD adapter card<br>FCC ID: PD9AX211D2<br>IC: 1000M-AX211D2 |
| WLAN Combo Antenna | LG (INPAQ) | WA-P-LE-02-080 | PCB, Mono-pole Type<br>Main: Black, Aux: Gray |
| Keyboard | TIC | KT0120B8 | --- |
| | LITE-ON | SN8B01 | --- |
| Touch Pad | Lite-On | EBD63285207 | --- |
| | Elan | EBD62827905 | --- |
| Web Camera | Luxvisions Innovation Limited | 1BF115N3 | HD Webcam with Mic |



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| Item | Supplier | Model / Type | Character |
|---|---|---|---|
| LAN Gender (Type C to LAN) | SUZHOU MEC ELECTRONICS | 80-5946-111 | (White) 10/100Megabit Ethernet |
| | | 80-5946-101 | (Black) 10/100 Megabit Ethernet |
| | ARIN TECH CO. LTD | GD-08MF-36-WH-LP10 | (White) 10/100Megabit Ethernet |
| | | GD-08MF-36-BK-LP11 | (Black) 10/100 Megabit Ethernet |
| | HUIZHOU DEHONG TECHNOLOGY CO.,LTD | 370-50713 | (White) 10/100Megabit Ethernet |
| | | 370-50714 | (Black) 10/100 Megabit Ethernet |
| | Type C to LAN: Shielded, Undetached, 0.12m | | |
| AC Adapter | LG (HONOR) | ADS-65AI-19-3 19065E | Manufacturer: HONOR<br>I/P: AC 100-240V, 1.5A, 50/60Hz<br>O/P: DC 19V, 3.42A |
| | DC Power Cord: Non-Shielded, Undetached, 1.5m, With one ferrite core<br>AC Power Cord: Non-Shielded, Detached, 1.8m (3C) | | |

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



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3.6.2. The EUT collocates with following worst components, which are used to establish a basic configuration of system during test:

| **SKU (Mode) 1** | | |
|---|---|---|
| Main Board | | LG, 16U75R MAIN B/D |
| SUB Board | | LG, 16U75R SUB B/D |
| CPU | | Intel, i7-1365U |
| 16” LCD Panel | | LG Display, LP160WU1 |
| Storage (SSD) | | Samsung, 1TB |
| Memory (RAM) | | SK hynix, 16GB |
| Battery Pack | | LG, 72Wh |
| Keyboard | | TIC, KT0120B8 |
| Touch Pad | | LITE-ON, EBD63285207 |
| Web Camera | | Luxvisions, 1BF115N3 |
| WLAN Combo Card | | Intel, AX211D2W |
| WLAN Combo Antenna | | LG (INPAQ), WA-P-LE-02-080 |
| AC Adapter | | LG (HONOR), ADS-65AI-19-3 19065E |
| Type C | Link to LAN Gender | MEC (Black) |



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## 3.7. Test Configuration

| Mode | $TX_{on}$ (ms) | $TX_{on+off}$ (ms) | Duty Cycle (x) | Duty Cycle Factor [10log(1/x)] (dB) |
|---|---|---|---|---|
| 802.11b | 8.360 | 8.380 | 0.998 | N/A |
| 802.11g | 2.080 | 2.120 | 0.981 | N/A |
| 802.11n-HT20 | 3.990 | 4.020 | 0.993 | N/A |
| 802.11n-HT40 | 3.960 | 4.000 | 0.990 | N/A |
| 802.11ax-HE20 | 3.980 | 4.020 | 0.990 | N/A |
| 802.11ax-HE40 | 3.950 | 3.990 | 0.990 | N/A |
| 802.11ax-HE20 (RU Config 26) | 0.720 | 0.765 | 0.941 | 0.264 |
| 802.11ax-HE20 (RU Config 52) | 1.425 | 1.470 | 0.969 | 0.137 |
| 802.11ax-HE20 (RU Config 106) | 3.036 | 3.081 | 0.985 | N/A |
| 802.11ax-HE40 (RU Config 242) | 1.416 | 1.454 | 0.974 | 0.114 |

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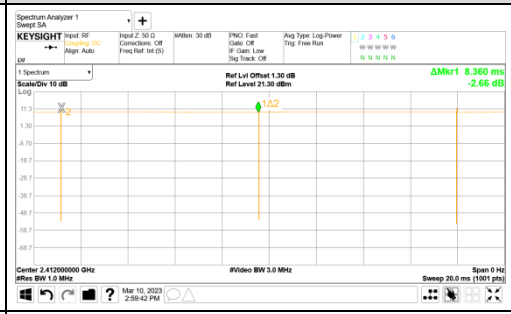
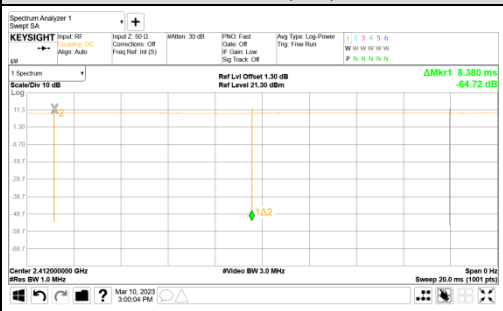
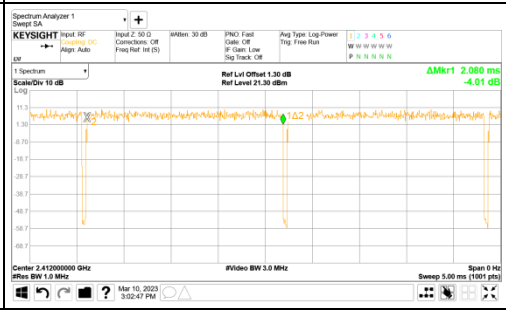
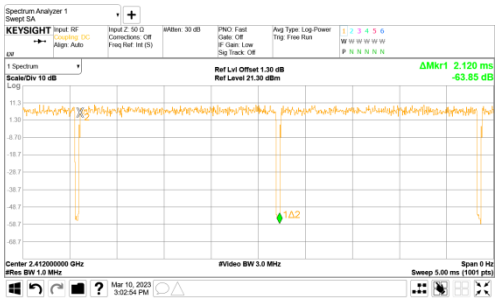
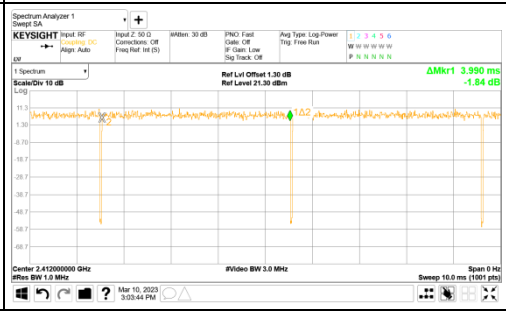
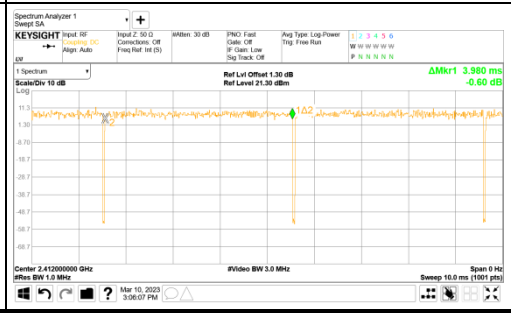
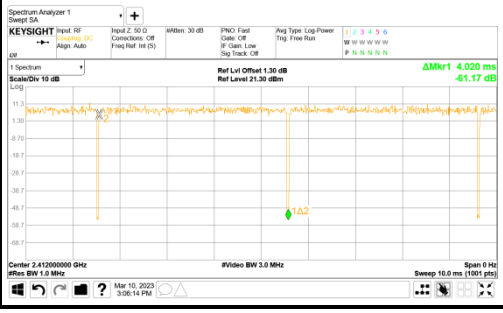
| Mode | $TX_{on}$ (ms) | $T_{on}+T_{off}$(ms) |
|---|---|---|
| 802.11b |   |   |
| 802.11g |   |   |
| 802.11n-HT20 |   | |
| 802.11n-HT40 | | |
| 802.11ax-HE20 |   |   |



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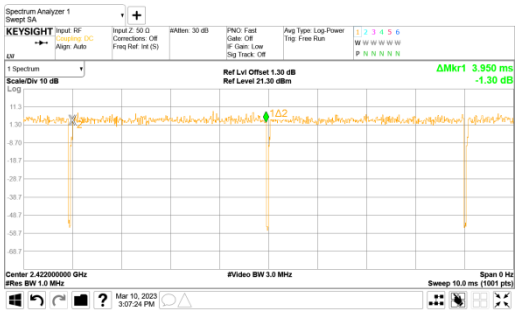
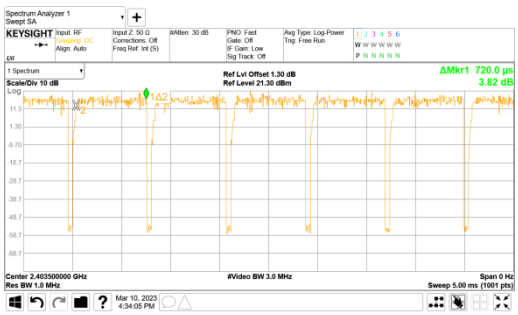
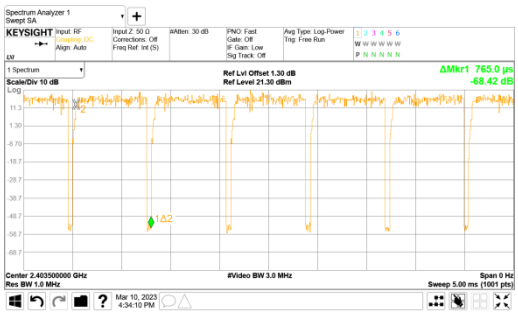
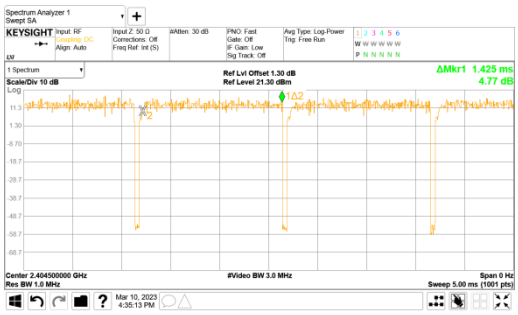
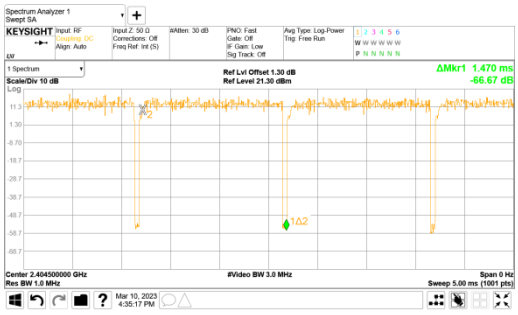
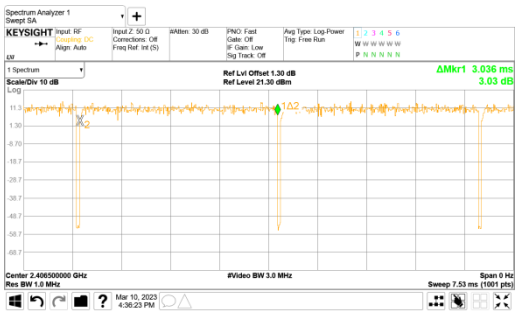
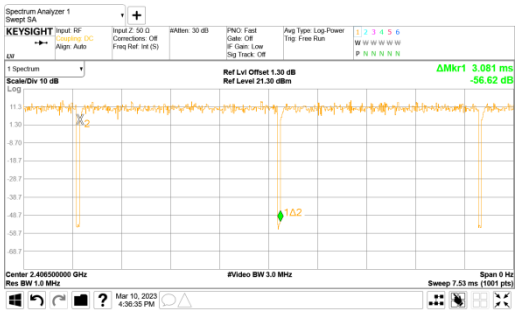
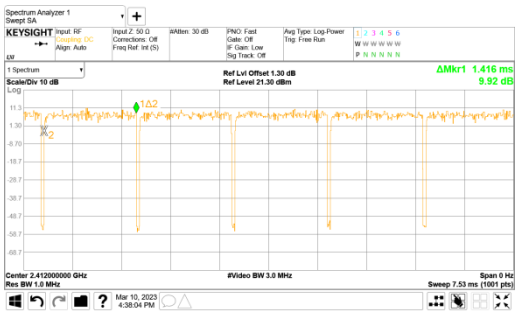
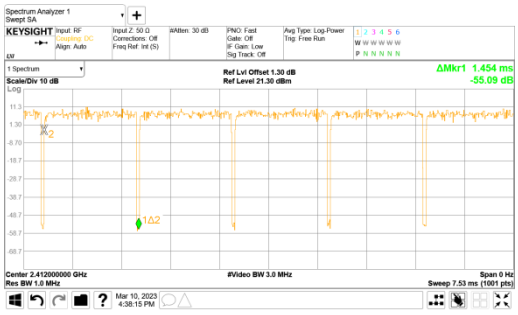
| Mode | $TX_{on}$ (ms) | $T_{on}+T_{off}$(ms) |
|---|---|---|
| 802.11ax-HE40 |   | |
| 802.11ax-HE20 (RU Config 26) |   |   |
| 802.11ax-HE20 (RU Config 52) |   |   |
| 802.11ax-HE20 (RU Config 106) |   |   |
| 802.11ax-HE40 (RU Config 242) |   |   |



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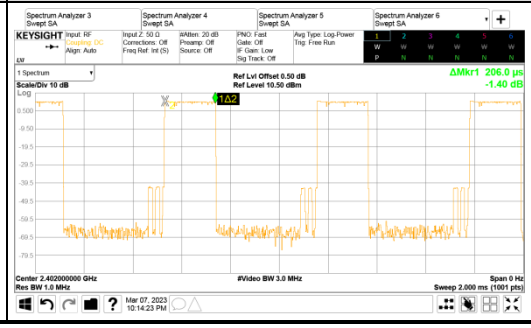
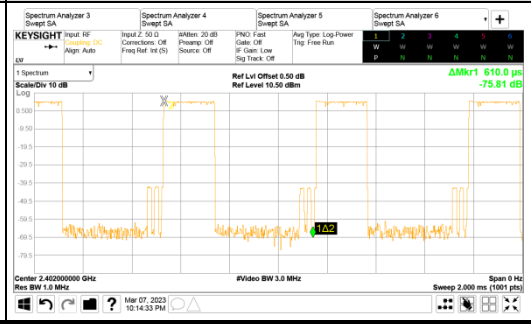
| Mode | $TX_{on}$ (ms) | $TX_{on+off}$ (ms) | Duty Cycle (x) | Duty Cycle Factor [10log(1/x)] (dB) |
|---|---|---|---|---|
| BLE (2Mbps) | 0.206 | 0.610 | 0.338 | 4.711 |

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.

| Mode | $TX_{on}$ (ms) | $T_{on}+T_{off}$(ms) |
|---|---|---|
| BLE (2Mbps) |  |  |



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| AC Conduction |
|---|
| Normal operation |

| Item | | Mode | Data Rate | Test Channel |
|---|---|---|---|---|
| Radiated Test Case | Radiated Spurious Emission (30MHz~1GHz) | 802.11ax-HE20 | HE0 | 7 |
| | | BLE | 2Mbps | 37 |

| Item | | Mode | Data Rate | Test Channel |
|---|---|---|---|---|
| Radiated Test Case | Radiated Band Edge Note1 | 802.11b | 1Mbps | 1/11/12/13 |
| | | 802.11g | 6Mbps | 1/2/10/11/12/13 |
| | | 802.11n-HT20 | MCS8 | 1/2/3/10/11/12/13 |
| | | 802.11n-HT40 | MCS8 | 3/9/10/11 |
| | | 802.11ax-HE20 | HE0 | 1/2/10/11/12/13 |
| | | 802.11ax-HE40 | HE0 | 3/9/10/11 |
| | | BLE | 2Mbps | 37/39 |
| | Radiated Spurious Emission Note1 & 2 | 802.11b | 1Mbps | 7 |
| | | 802.11g | 6Mbps | 7 |
| | | 802.11n-HT20 | MCS8 | 7 |
| | | 802.11n-HT40 | MCS8 | 7 |
| | | 802.11ax-HE20 | HE0 | 7 |
| | | 802.11ax-HE40 | HE0 | 7 |
| | | BLE | 2Mbps | 37/17/39 |

| Item | | Mode | RU Config | Test Channel |
|---|---|---|---|---|
| Radiated Test Case | Radiated Band Edge Note 1 | 802.11ax-HE20 | 26/0 | 1 |
| | | | 52/37 | |
| | | | 106/53 | |
| | | | 26/8 | 13 |
| | | | 52/40 | |
| | | | 106/54 | |
| | | 802.11ax-HE40 | 242/61 | 3 |
| | | | 242/62 | 11 |



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| Item | | Mode | Data Rate | Test Channel |
|---|---|---|---|---|
| Conducted Test Case | DTS/Occupied Bandwidth | 802.11b | 1Mbps | 1/7/11/13 |
| | | 802.11g | 6Mbps | 1/7/11/13 |
| | | 802.11n-HT20 | MCS8 | 1/7/11/13 |
| | | 802.11n-HT40 | MCS8 | 3/7/9/11 |
| | | 802.11ax-HE20 | HE0 | 1/7/11/13 |
| | | 802.11ax-HE40 | HE0 | 3/7/9/11 |
| | | BLE | 2Mbps | 37/17/39 |
| | 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 |
| | Band Edge | 802.11b | 1Mbps | 1/11/13 |
| | | 802.11g | 6Mbps | 1/11/13 |
| | | 802.11n-HT20 | MCS8 | 1/11/13 |
| | | 802.11n-HT40 | MCS8 | 3/9/11 |
| | | 802.11ax-HE20 | HE0 | 1/11/13 |
| | | 802.11ax-HE40 | HE0 | 3/9/11 |
| | | BLE | 2Mbps | 37/39 |
| | Spurious Emission | 802.11b | 1Mbps | 1/7/11/13 |
| | | 802.11g | 6Mbps | 1/7/11/13 |
| | | 802.11n-HT20 | MCS8 | 1/7/11/13 |
| | | 802.11n-HT40 | MCS8 | 3/7/9/11 |
| | | 802.11ax-HE20 | HE0 | 1/7/11/13 |
| | | 802.11ax-HE40 | HE0 | 3/7/9/11 |
| | | BLE | 2Mbps | 37/17/39 |
| | Peak Power Spectral Density | 802.11b | 1Mbps | 1/7/11/13 |
| | | 802.11g | 6Mbps | 1/7/11/13 |
| | | 802.11n-HT20 | MCS8 | 1/7/11/13 |
| | | 802.11n-HT40 | MCS8 | 3/7/9/11 |
| | | 802.11ax-HE20 | HE0 | 1/7/11/13 |
| | | 802.11ax-HE40 | HE0 | 3/7/9/11 |
| | | BLE | 2Mbps | 37/17/39 |



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| 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 | |
| | | | HE0 | 26/8 | 13 |
| | | | | 52/40 | |
| | | | | 106/5 | |
| | | 802.11ax-HE40 | HE0 | 242/61 | 3 |
| | | | HE0 | 242/62 | 11 |
| | Peak Power Spectral Density | 802.11ax-HE20 | HE0 | 26/0 | 1 |
| | | | | 52/37 | |
| | | | | 106/53 | |
| | | | HE0 | 26/8 | 13 |
| | | | | 52/40 | |
| | | | | 106/54 | |
| | | 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: The modulation and bandwidth are similar for 802.11n mode for HT20/HT40 and 802.11ac mode for VHT20/VHT40, therefore investigated worst case to representative mode in the test report.

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



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## 3.8. Output Power Setting

| Mode | Centre Frequency (MHz) | Power Setting | | Mode | Centre Frequency (MHz) | Power Setting | |
|---|---|---|---|---|---|---|---|
| | | AUX | Main | | | AUX | Main |
| 802.11b | 2412 | 19.000 | 19.000 | 802.11g | 2412 | 17.000 | 17.000 |
| | 2442 | 19.000 | 19.000 | | 2417 | 19.000 | 19.000 |
| | 2462 | 19.000 | 19.000 | | 2442 | 19.000 | 19.000 |
| | 2467 | 15.500 | 15.500 | | 2457 | 18.750 | 18.500 |
| | 2472 | 14.000 | 14.000 | | 2462 | 16.750 | 16.750 |
| | | | | | 2467 | 14.500 | 14.250 |
| | | | | | 2472 | 11.500 | 11.500 |

| Mode | Centre Frequency (MHz) | Power Setting | | Mode | Centre Frequency (MHz) | Power Setting | |
|---|---|---|---|---|---|---|---|
| | | AUX | Main | | | AUX | Main |
| 802.11n-HT20 | 2412 | 14.750 | 14.750 | 802. 11n-HT40 | 2422 | 13.750 | 13.750 |
| | 2417 | 17.250 | 17.250 | | 2442 | 14.750 | 14.750 |
| | 2422 | 18.250 | 18.250 | | 2452 | 13.750 | 13.750 |
| | 2442 | 19.000 | 19.000 | | 2457 | 7.250 | 7.250 |
| | 2457 | 18.250 | 18.250 | | 2462 | 5.500 | 5.500 |
| | 2462 | 15.000 | 15.000 | | | | |
| | 2467 | 11.000 | 11.000 | | | | |
| | 2472 | 6.000 | 6.000 | | | | |

| Mode | Centre Frequency (MHz) | Power Setting | | Mode | Centre Frequency (MHz) | Power Setting | |
|---|---|---|---|---|---|---|---|
| | | AUX | Main | | | AUX | Main |
| 802.11ax-HE20 | 2412 | 14.750 | 14.750 | 802.11ax-HE40 | 2422 | 13.750 | 13.750 |
| | 2417 | 17.250 | 17.250 | | 2442 | 14.750 | 14.750 |
| | 2422 | 18.250 | 18.250 | | 2452 | 13.750 | 13.750 |
| | 2442 | 19.000 | 19.000 | | 2457 | 7.250 | 7.250 |
| | 2457 | 18.250 | 18.250 | | 2462 | 5.500 | 5.500 |
| | 2462 | 15.000 | 15.000 | | | | |
| | 2467 | 11.000 | 11.000 | | | | |
| | 2472 | 6.000 | 6.000 | | | | |



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| Mode | RU Configuration | Centre Frequency (MHz) | Power Setting | |
|---|---|---|---|---|
| | | | AUX | Main |
| 802.11ax-HE20 | 26/0 | 2412 | 18.250 | 18.250 |
| | 52/37 | | 18.500 | 18.500 |
| | 106/53 | | 18.250 | 18.250 |
| | 26/0 | 2472 | 5.500 | 5.500 |
| | 52/37 | | 6.000 | 6.000 |
| | 106/53 | | 6.000 | 6.000 |
| 802.11ax-HE40 | 242/61 | 2422 | 15.000 | 15.000 |
| | 242/62 | 2462 | 6.000 | 6.000 |

| Mode | Centre Frequency (MHz) | Power Setting | | | |
|---|---|---|---|---|---|
| | | 1M | 2M | PHY Coded S2 | PHY Coded S8 |
| BLE | 2402 | 7.00 | 7.00 | 7.00 | 7.00 |
| | 2440 | 7.00 | 7.00 | 7.00 | 7.00 |
| | 2480 | 7.00 | 7.00 | 7.00 | 7.00 |



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## 3.9. Tested Supporting System List

### 3.9.1. Support Peripheral Unit

| No. | Product | Brand | Model No. | Serial No. | Approval |
|---|---|---|---|---|---|
| 1. | LCD Monitor | DELL | U2718Qb | CN-0M5R5F-QDC00-8BK-04CL | N/A |
| | | Fujitsu | B24-9 WE | N/A | N/A |
| 2. | USB Mouse | Lenovo | MOJUUO | 008ZZCZ | N/A |
| | | ASUS | ROG STRIX IMPACT II | 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<br>IC: 3568A-RTAXHP00 |

### 3.9.2. Cable Lists

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


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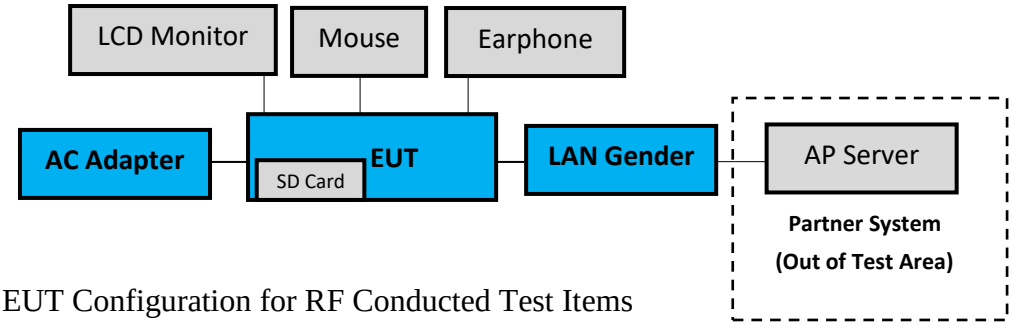
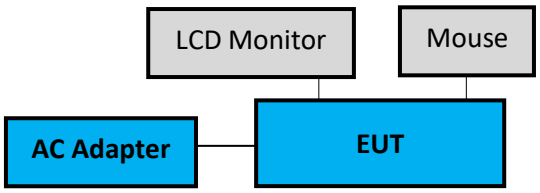
## 3.10.Setup Configuration

### 3.10.1. EUT Configuration for Power Line & Radiated Emission




### 3.10.2. EUT Configuration for RF Conducted Test Items




## 3.11.Operating Condition of EUT

Test program "DRTU" is used for enabling EUT BT or WLAN function under continues transmitting and choosing data rate/ channel.
[ANT AUX port (A Button in DRTU), ANT Main port (B Button in DRTU)].



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## 3.12.Description of Test Facility

| | |
|---|---|
| Name of Test Firm | Audix Technology Corporation / EMC Department<br>No. 491, Zhongfu Rd., Linkou Dist., New Taipei City 244, Taiwan<br>Tel: +886-2-26092133<br>Fax: +886-2-26099303<br>Website : www.audixtech.com<br>Contact e-mail: attemc_report@audixtech.com |
| Accreditations | The laboratory is accredited by following organizations under ISO/IEC 17025:2017<br>(1) NVLAP(USA)<br>NVLAP Lab Code 200077-0<br>(2) TAF(Taiwan)<br>No. 1724 |
| Test Facilities | FCC OET Designation Number under APEC MRA by NCC is : TW1724<br>ISED CAB Identifier Number under APEC TEL MRA by NCC is TW1724<br>(1) No.8 Shielded Room<br>(2) No.1 3m Semi Anechoic Chamber |



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## 3.13.Measurement Uncertainty

| Test Items/Facilities | | | Frequency Range | Uncertainty |
|---|---|---|---|---|
| Conduction Test | ☐ | No. 7 Shielded Room | 9kHz-150kHz | ±3.7dB |
| | | | 150kHz-30MHz | ±3.4dB |
| | ☒ | No. 8 Shielded Room | 9kHz-150kHz | ±3.7dB |
| | | | 150kHz-30MHz | ±3.5dB |
| Radiation Test | ☒ | No.1 3m Semi Anechoic Chamber | 30MHz-200MHz, 3m, Horizontal | ±3.6dB |
| | | | 200MHz-1000MHz, 3m, Horizontal | ±4.3dB |
| | | | 30MHz-200MHz, 3m, Vertical | ±4.4dB |
| | | | 200MHz-1000MHz, 3m, Vertical | ±4.8dB |
| | | | 1GHz-6GHz, 3m | ±4.8dB |
| | | | 6GHz-18GHz, 3m | ±4.5dB |
| | ☐ | No.3 3m Semi Anechoic Chamber | 30MHz-200MHz, 3m, Horizontal | ±4.0dB |
| | | | 200MHz-1000MHz, 3m, Horizontal | ±4.4dB |
| | | | 30MHz-200MHz, 3m, Vertical | ±4.7dB |
| | | | 200MHz-1000MHz, 3m, Vertical | ±4.5dB |
| | | | 1GHz-6GHz, 3m | ±4.8dB |
| | | | 6GHz-18GHz, 3m | ±4.5dB |
| | ☐ | No.4 3m Semi Anechoic Chamber | 30MHz-200MHz, 3m, Horizontal | ±4.3dB |
| | | | 200MHz-1000MHz, 3m, Horizontal | ±4.2dB |
| | | | 30MHz-200MHz, 3m, Vertical | ±4.8dB |
| | | | 200MHz-1000MHz, 3m, Vertical | ±4.7dB |
| | | | 1GHz-6GHz, 3m | ±4.6dB |
| | | | 6GHz-18GHz, 3m | ±4.4dB |
| | ☐ | No.5 3m Semi Anechoic Chamber | 30MHz-200MHz, 3m, Horizontal | ±4.6dB |
| | | | 200MHz-1000MHz, 3m, Horizontal | ±4.4dB |
| | | | 30MHz-200MHz, 3m, Vertical | ±4.5dB |
| | | | 200MHz-1000MHz, 3m, Vertical | ±4.9dB |
| | | | 1GHz-6GHz, 3m | ±4.9dB |
| | | | 6GHz-18GHz, 3m | ±4.6dB |
| | Radiated emissions (18GHz-40GHz) | | 18GHz-40GHz, 3m | ±3.4dB |

Remark：Uncertainty = $ku_c(y)$



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| 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 | 2023. 01. 11 | 1 Year |
| 2. | A.M.N. | R&S | ENV432 | 101567 | 2022. 05. 26 | 1 Year |
| 3. | L.I.S.N. | Kyoritsu | KNW-407 | 8-855-9 | 2022. 12. 19 | 1 Year |
| 4. | Pulse Limiter | R&S | ESH3-Z2 | 100354 | 2022. 12. 14 | 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 | 2022. 09. 07 | 1 Year |
| 7. | Test Software | Audix | e3 | V9 18621a | 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 | 2022. 08. 24 | 1 Year |
| 2. | Test Receiver | R&S | ESCS30 | 100039 | 2022. 06. 01 | 1 Year |
| 3. | Amplifier | HP | 8447D | 2944A06305 | 2022. 12. 29 | 1 Year |
| 4. | Microwave Amplifier | Keysight | 83051A | MY56480113 | 2022. 09. 07 | 1 Year |
| 5. | Microwave Amplifier | Agilent | 8449B | 3008A02678 | 2023. 02. 17 | 1 Year |
| 6. | Loop Antenna | TESEQ | HLA 6121 | 60478 | 2023. 02. 21 | 1 Year |
| 7. | Bilog Antenna | TESEQ | CBL6112D | 33821 | 2022. 07. 01 | 1 Year |
| 8. | Double-Ridged Waveguide Horn | ETS-Lindgren | 3117 | 00135902 | 2022. 03. 21 | 1 Year |
| 9. | Horn Antenna | COM-POWER | AH-840 | 101092 | 2022. 12. 30 | 1 Year |
| 10. | 2.4GHz Notch Filter | K&L Microwave | 7NSL10-2441.5/E130.5-O/O | 2 | 2022 .07. 23 | 1 Year |
| 11. | 3GHz Notch Filter | Microwave | H3G018G1 | 484796 | 2022 .07. 23 | 1 Year |
| 12. | Coaxial Cable | MIYAZAKI | 5D2W | RE-11 | 2023. 01. 07 | 1 Year |
| 13. | Coaxial Cable | HUBER+SUHNER | SUCOFLEX 106 | RE-14 | 2023. 01. 07 | 1 Year |
| 14. | Coaxial Cable | HUBER+SUHNER | SUCOFLEX 102 | RE-30 | 2022. 08. 22 | 1 Year |
| 15. | Digital Thermo-Hygro Meter | iMax | HTC-1 | No.1 3m A/C | 2022. 04. 14 | 1 Year |
| 16. | Test Software | Audix | e3 | V9 18621a | 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 | N9020B-544 | MY57120357 | 2023. 02. 22 | 1 Year |
| 2. | Power Meter | Anritsu | ML2495A | 2127005 | 2022. 12. 01 | 1 Year |
| 3. | Power Meter | Anritsu | ML2495A | 2127004 | 2022. 12. 07 | 1 Year |
| 4. | Power Sensor | Anritsu | MA2411B | 1911360 | 2022. 12. 07 | 1 Year |
| 5. | Power Sensor | Anritsu | MA2411B | 1911356 | 2022. 12. 01 | 1 Year |
| 6. | Digital Thermo-Hygro Meter | iMax | HTC-1 | RF-03 | 2022. 04. 14 | 1 Year |


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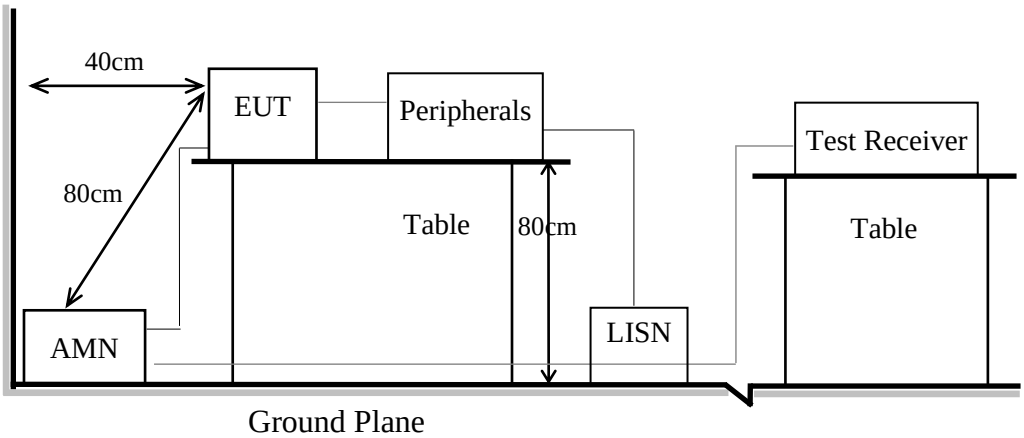
# 5. CONDUCTED EMISSION

## 5.1. Block Diagram of Test Setup

5.1.1. Block Diagram of EUT

Indicated as section 3.10

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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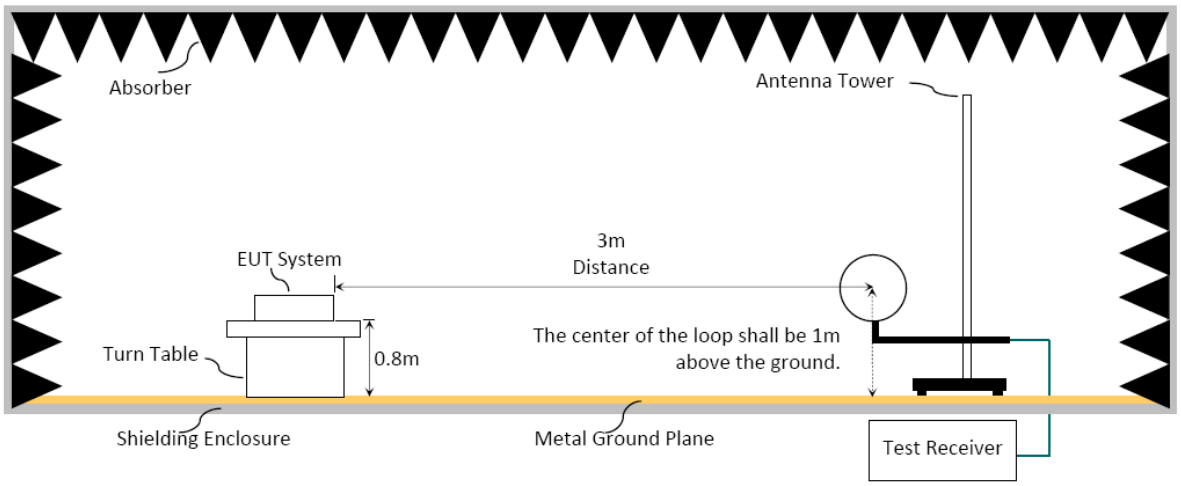
# 6. RADIATED EMISSION

## 6.1. Block Diagram of Test Setup

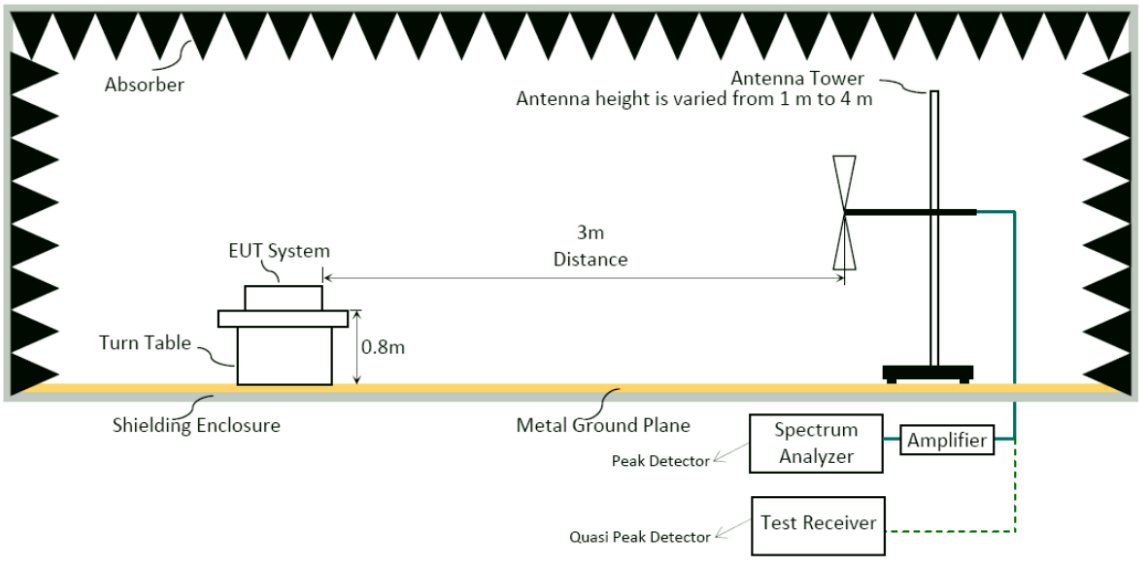
### 6.1.1. Block Diagram of EUT

Indicated as section 3.10

### 6.1.2. Setup Diagram for 9kHz-30MHz




### 6.1.3. Setup Diagram for 30-1000MHz



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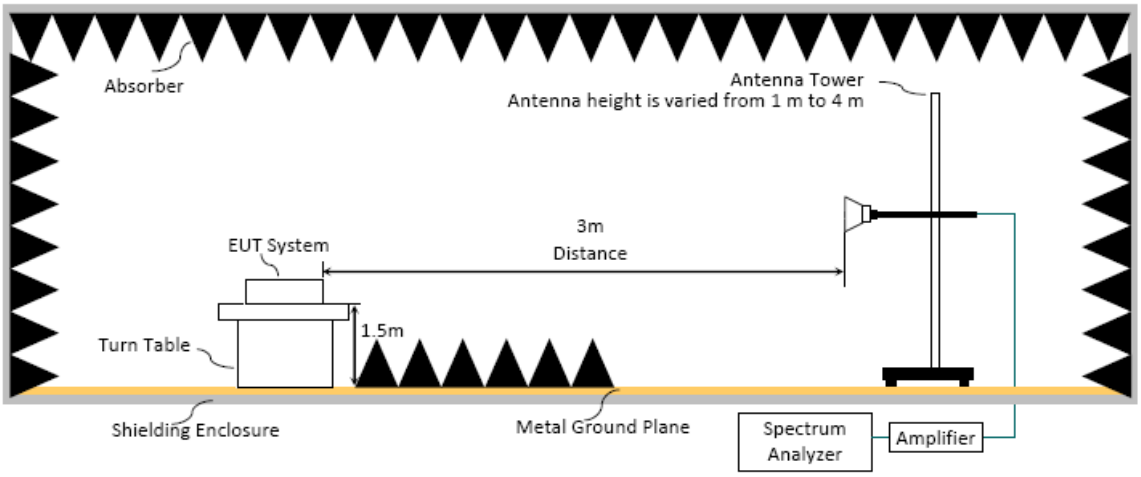
6.1.4. Setup Diagram for above 1GHz




## 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 | |
|---|---|---|---|
| | | 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)<br>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 3.7)

| Modulation Type | VBW Setting (VBW ≥ 1/ T) |
|---|---|
| 802.11ax-HE20 (RU Config 26) | 1.5kHz |
| 802.11ax-HE20 (RU Config 52) | 750Hz |
| 802.11ax-HE40 (RU Config 242) | 750Hz |
| BLE (2Mbps) | 5.1kHz |

(3)VBW = 10Hz (Duty Cycle ≥ 98%, when duty cycle presented in section 3.7)

| Modulation Type | VBW Setting |
|---|---|
| 802.11b | 10Hz |
| 802.11g | 10Hz |
| 802.11n-HT20 | 10Hz |
| 802.11n-HT40 | 10Hz |
| 802.11ax-HE20 | 10Hz |
| 802.11ax-HE40 | 10Hz |
| 802.11ax-HE20 (RU Config 106) | 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= Peak Emission Level+ D.C.C.F.

## 6.4. Measurement Result Explanation

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

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

□Average Emission Level(dBμV/m)= Peak Emission Level(dBμV/m)+ DCCF(dB)
Duty Cycle Correction Factor (DCCF)(dB)= 20log($TX_{on}/TX_{on+off}$) presented in section 3.7.

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

## 6.5. Test Results

Please refer to Appendix A.



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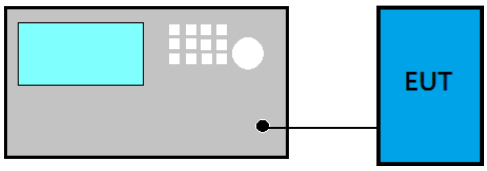
# 7. DTS/OCCUPIED BANDWIDTH

## 7.1. Block Diagram of Test Setup




## 7.2. Specification Limits

The minimum 6dB bandwidth shall be at least 500kHz.

## 7.3. Test Procedure

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

**For DTS Bandwidth**

(1) Set RBW = 100 kHz.
(2) Set the video bandwidth (VBW) ≥ 3 × RBW.
(3) Detector = Peak.
(4) Trace mode = max hold.
(5) Sweep = auto couple.
(6) Allow the trace to stabilize.
(7) Setting channel bandwidth function x to -6dB power to record the final bandwidth..

**For 99% Occupied Bandwidth**

(1) Set Span range 1.5~5 times the OBW
(2) Set RBW close to1% to 5% of OBW.
(3) Set VBW≥3xRBW.
(4) Detector = Peak.
(5) Trace mode = Max hold
(6) Sweep = Auto couple.
(7) Allow the trace to stabilize.

## 7.4. Test Results

Please refer to Appendix A



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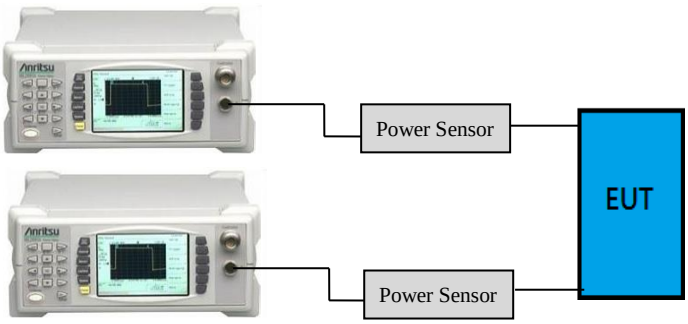
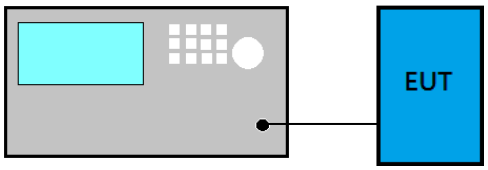
# 8. MAXIMUM PEAK OUTPUT POWER

## 8.1. Block Diagram of Test Setup

- For WLAN Function




- For BLE Function




## 8.2. 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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## 8.3. 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%.

## 8.4. Test Results

Please refer to Appendix A



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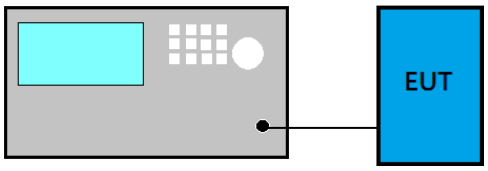
# 9. EMISSION LIMITATIONS

## 9.1. Block Diagram of Test Setup




## 9.2. Specification Limits

In any 100kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the100kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, that the required attenuation shall be 30 dB instead of 20 dB.

Attenuation below the general limits specified in Section 15.209(a)/RSS-Gen Section 8.9 table 4is not required. In addition, radiated emissions which fall in restricted bands, as defined in Section 15.205(a)/RSS-Gen Section 8.10 table 6, must also comply with the radiated emission limits specified in Section 15.209(a)/RSS-Gen Section 8.9 table 4 (See Section 15.205(c)).

## 9.3. Test Procedure

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

**■Reference Level**

(1) Set analyzer center frequency to DTS channel center frequency.
(2) Set the span to 1.5 times the DTS bandwidth.
(3) Set the RBW to: 100 kHz.
(4) Set the VBW ≥ 3 × RBW.
(5) Detector = peak.
(6) Sweep time = auto couple.
(7) Trace mode = max hold.
(8) Allow trace to fully stabilize to find the max PSD as reference level.



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**■Emission Level Measurement**

(1) Set analyzer center frequency to DTS channel center frequency.
(2) Set the span to 1.5 times the DTS bandwidth.
(3) Set the RBW to: 100 kHz.
(4) Set the VBW ≥ 3 × RBW.
(5) Detector = peak.
(6) Sweep time = auto couple.
(7) Trace mode = max hold.
(8) Allow trace to fully stabilize to find the max level.

## 9.4. Test Results

Please refer to Appendix A



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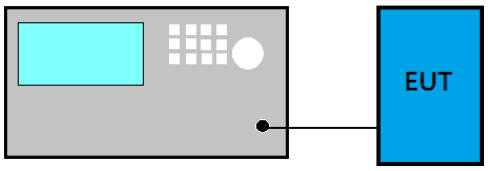
# 10. POWER SPECTRAL DENSITY

## 10.1. Block Diagram of Test Setup




## 10.2. Specification Limits

The peak power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8dBm in any 3kHz band.

## 10.3. Test Procedure

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

**■Method PKPSD (peak PSD)**

(1) Set analyzer center frequency to DTS channel center frequency.
(2) Set the span to 1.5 times the DTS bandwidth.
(3) Set the RBW to: 3 kHz ≤ RBW ≤ 100 kHz.
(4) Set the VBW ≥ 3 × RBW.
(5) Detector = peak.
(6) Sweep time = auto couple.
(7) Trace mode = max hold.
(8) Allow trace to fully stabilize.
(9) Use the peak marker function to determine the maximum amplitude level.
(10) If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

**□Method AVGPSD-2**

(1) Using peak PSD procedure step 1 to step 4.
(2) Detector= RMS detector
(3) Sweep time = auto couple
(4) Trace mode = trace averaging over a minimum of 100 traces
(5) Use the peak marker function to determine the maximum amplitude level.
(6) Duty cycle factor is added when duty cycle presented in section 3.7< 98%.
(7) If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

## 10.4. Test Results

Please refer to Appendix A



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# 11. DEVIATION TO TEST SPECIFICATIONS

【NONE】



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# APPENDIX A

## TEST DATA AND PLOTS

(Model: 16U75R)



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# APPENDIX B

## TEST PHOTOGRAPHS

(Model: 16U75R)



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