# FCC TEST REPORT

For

ALOYS INC.

Formuler Z12 Ultra

Test Model: Z12 Ultra

| | | |
|---|---|---|
| Prepared for | : | ALOYS INC. |
| Address | : | 6F, 4-5, Yanghyeon-ro 405beon-gil, Jungwon-gu, Seongnam-si, Gyeonggi-do, Republic of Korea |
| Prepared by | : | Shenzhen LCS Compliance Testing Laboratory Ltd. |
| Address | : | 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China |
| Tel | : | (+86)755-82591330 |
| Fax | : | (+86)755-82591332 |
| Web | : | www.LCS-cert.com |
| Mail | : | webmaster@LCS-cert.com |
| Date of receipt of test sample | : | May 16, 2025 |
| Number of tested samples | : | 2 |
| Sample No. | : | A250509055-1, A250509055-2 |
| Serial number | : | Prototype |
| Date of Test | : | May 16, 2025 ~ July 14, 2025 |
| Date of Report | : | July 14, 2025 |

# FCC TEST REPORT
# FCC CFR 47 PART 15 E (15.407)

| | | |
|---|---|---|
| **Report Reference No. .....** | **:** | **LCSA05155084EH** |
| Date of Issue..... | : | July 14, 2025 |
| **Testing Laboratory Name .....** | **:** | **Shenzhen LCS Compliance Testing Laboratory Ltd.** |
| Address..... | : | 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China |
| Testing Location/ Procedure..... | : | Full application of Harmonised standards ■<br>Partial application of Harmonised standards □<br>Other standard testing method □ |
| **Applicant's Name.....** | **:** | **ALOYS INC.** |
| Address..... | : | 6F, 4-5, Yanghyeon-ro 405beon-gil, Jungwon-gu, Seongnam-si, Gyeonggi-do, Republic of Korea |
| **Test Specification** | | |
| Standard ..... | : | FCC CFR 47 PART 15 E (15.407) |
| **Test Report Form No. .....** | **:** | TRF-4-E-221 A/0 |
| TRF Originator ..... | : | Shenzhen LCS Compliance Testing Laboratory Ltd. |
| Master TRF..... | : | Dated 2011-03 |



| | | |
|---|---|---|
| **EUT Description. .....** | **:** | **Formuler Z12 Ultra** |
| Trade Mark..... | : | Formuler |
| Test Model ..... | : | Z12 Ultra |
| Ratings..... | : | Please Refer to Page 6 |
| **Result ..... ** | **:** | **PASS** |

| **Compiled by:** | **Supervised by:** | **Approved by:** |
|---|---|---|
| Vera Deng | Jack Liu | Gavin Liang |
| Vera Deng/ Administrator | Jack Liu / Technique principal | Gavin Liang/ Manager |

# FCC -- TEST REPORT

| | |
|---|---|
| **Test Report No. :** **LCSA05155084EH** | July 14, 2025<br>Date of issue |

| | | |
|---|---|---|
| EUT..... | : | Formuler Z12 Ultra |
| Test Model..... | : | Z12 Ultra |
| **Applicant.....** | **:** | **ALOYS INC.** |
| Address..... | : | 6F, 4-5, Yanghyeon-ro 405beon-gil, Jungwon-gu, Seongnam-si, Gyeonggi-do, Republic of Korea |
| Telephone..... | : | / |
| Fax..... | : | / |
| **Manufacturer.....** | **:** | **ALOYS INC.** |
| Address..... | : | 6F, 4-5, Yanghyeon-ro 405beon-gil, Jungwon-gu, Seongnam-si, Gyeonggi-do, Republic of Korea |
| Telephone..... | : | / |
| Fax..... | : | / |
| **Factory.....** | **:** | **Sichuan Changhong Neonet Technologies Co.,Ltd.** |
| Address..... | : | G05 Factory Premises, Changhong Intelligent Display Terminal Industrial Park, 38, Xinping Avenue,High-tech District, Mianyang 621000, P. R. China |
| Telephone..... | : | / |
| Fax..... | : | / |

| | |
|---|---|
| **Test Result:** | **PASS** |

The test report merely corresponds to the test sample.

It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

# Revision History

| Report Version | Issue Date | Revision Content | Revised By |
|---|---|---|---|
| 000 | July 14, 2025 | Initial Issue | -- |
| | | | |
| | | | |

# TABLE OF CONTENTS

# 1. GENERAL INFORMATION

## 1.1. Description of Device (EUT)

| | | |
|---|---|---|
| EUT | : | Formuler Z12 Ultra |
| Description of product as it is marketed | : | Android Media Player |
| Test Model | : | Z12 Ultra |
| Ratings | : | Input: 12.0V⎓1.0A<br>For AC Adapter: Input:100-240V~, 50/60Hz, 0.35A Max<br>Output: 12.0V⎓1.0A |
| Hardware Version | : | JZ105 |
| Software Version | : | 12.1.1-r86005289239 |
| Bluetooth | : | |
| Frequency Range | : | 2402MHz~2480MHz |
| Channel Number | : | 79 channels for Bluetooth V5.2 (DSS)<br>40 channels for Bluetooth V5.2 (DTS) |
| Channel Spacing | : | 1MHz for Bluetooth V5.2 (DSS)<br>2MHz for Bluetooth V5.2 (DTS) |
| Modulation Type | : | GFSK, π/4-DQPSK, 8-DPSK for Bluetooth V5.2 (DSS)<br>GFSK for Bluetooth V5.2 (DTS) |
| Bluetooth Version | : | V5.2 |
| Antenna Description | : | Ant0: Internal Antenna, 1.54dBi (max.) |
| WIFI(2.4G Band) | : | |
| Frequency Range | : | 2412MHz~2462MHz |
| Channel Spacing | : | 5MHz |
| Channel Number | : | 11 Channels for 20MHz bandwidth (2412~2462MHz)<br>7 Channels for 40MHz bandwidth (2422~2452MHz) |
| Modulation Type | : | IEEE 802.11b: DSSS (CCK, DQPSK, DBPSK)<br>IEEE 802.11g: OFDM (64QAM, 16QAM, QPSK, BPSK)<br>IEEE 802.11n: OFDM (64QAM, 16QAM, QPSK, BPSK)<br>IEEE 802.11ax: OFDMA (1024QAM, 256QAM, 64QAM, 16QAM, QPSK, BPSK) |
| Antenna Description | : | Ant1: Internal Antenna, 1.8dBi(Max.)<br>Ant2: Internal Antenna, 1.7dBi(Max.) |
| WIFI(5.2G Band) | : | |
| Frequency Range | : | 5180MHz~5240MHz |
| Channel Number | : | 4 Channels for 20MHz bandwidth(5180MHz~5240MHz)<br>2 channels for 40MHz bandwidth(5190MHz~5230MHz)<br>1 channels for 80MHz bandwidth(5210MHz) |
| Modulation Type | : | IEEE 802.11a: OFDM (64QAM, 16QAM, QPSK, BPSK)<br>IEEE 802.11n: OFDM (64QAM, 16QAM, QPSK, BPSK)<br>IEEE 802.11ac: OFDM (256QAM, 64QAM, 16QAM, QPSK, BPSK)<br>IEEE 802.11ax: OFDMA (1024QAM, 256QAM, 64QAM, 16QAM, QPSK, BPSK) |
| Antenna Description | : | Ant1: Internal Antenna, 2.2dBi(Max.)<br>Ant2: Internal Antenna, 2.0dBi(Max.) |
| WIFI(5.3G Band) | | |
| Frequency Range | : | 5260MHz~5320MHz |
| Channel Number | : | 4 Channels for 20MHz bandwidth(5260MHz~5320MHz)<br>2 channels for 40MHz bandwidth(5270MHz~5310MHz)<br>1 channels for 80MHz bandwidth(5290MHz) |
| Modulation Type | : | IEEE 802.11a: OFDM (64QAM, 16QAM, QPSK, BPSK)<br>IEEE 802.11n: OFDM (64QAM, 16QAM, QPSK, BPSK) |

| | | |
|---|---|---|
| | | IEEE 802.11ac: OFDM (256QAM, 64QAM, 16QAM, QPSK, BPSK)<br>IEEE 802.11ax: OFDMA (1024QAM, 256QAM, 64QAM, 16QAM, QPSK, BPSK) |
| Antenna Description | : | Ant1: Internal Antenna, 2.2dBi(Max.)<br>Ant2: Internal Antenna, 2.0dBi(Max.) |
| WIFI(5.5G Band) | : | |
| Frequency Range | : | 5500MHz~5700MHz |
| Channel Number | : | 11 Channels for 20MHz bandwidth(5500MHz~5700MHz)<br>5 Channels for 40MHz bandwidth(5510MHz~5670MHz)<br>2 Channels for 80MHz bandwidth(5530MHz, 5610MHz) |
| Modulation Type | : | IEEE 802.11a: OFDM (64QAM, 16QAM, QPSK, BPSK)<br>IEEE 802.11n: OFDM (64QAM, 16QAM, QPSK, BPSK)<br>IEEE 802.11ac: OFDM (256QAM, 64QAM, 16QAM, QPSK, BPSK)<br>IEEE 802.11ax: OFDMA (1024QAM, 256QAM, 64QAM, 16QAM, QPSK, BPSK) |
| Antenna Description | : | Ant1: Internal Antenna, 2.2dBi(Max.)<br>Ant2: Internal Antenna, 2.0dBi(Max.) |
| WIFI(5.8G Band) | : | |
| Frequency Range | : | 5745MHz~5825MHz |
| Channel Number | : | 5 channels for 20MHz bandwidth(5745MHz~5825MHz)<br>2 channels for 40MHz bandwidth(5755MHz~5795MHz)<br>1 channels for 80MHz bandwidth(5775MHz) |
| Modulation Type | : | IEEE 802.11a: OFDM (64QAM, 16QAM, QPSK, BPSK)<br>IEEE 802.11n: OFDM (64QAM, 16QAM, QPSK, BPSK)<br>IEEE 802.11ac: OFDM (256QAM, 64QAM, 16QAM, QPSK, BPSK)<br>IEEE 802.11ax: OFDMA (1024QAM, 256QAM, 64QAM, 16QAM, QPSK, BPSK) |
| Antenna Description | : | Ant1: Internal Antenna, 2.2dBi(Max.)<br>Ant2: Internal Antenna, 2.0dBi(Max.) |
| UNII Band 5 | : | |
| Frequency Range | : | 5955MHz~6415MHz |
| Channel Number | : | 24channels for 20MHz bandwidth(5955MHz~6415MHz)<br>12 channels for 40MHz bandwidth(5965MHz~6405MHz)<br>6 channels for 80MHz bandwidth(5985-6385MHz) |
| Modulation Type | : | 802.11a:OFDM (64QAM, 16QAM, QPSK, BPSK)<br>802.11n: OFDM (BPSK, QPSK, 16QAM, 64QAM)<br>802.11ac: OFDM (BPSK, QPSK, 16QAM, 64QAM, 256QAM)<br>802.11ax: OFDMA (BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024-QAM) |
| Antenna Description | : | Ant1: Internal Antenna,2.2dBi(Max.)<br>Ant2: Internal Antenna, 2.0dBi(Max.) |
| UNII Band 6 | : | |
| Frequency Range | : | 6435MHz~6515MHz |
| Channel Number | : | 5 channels for 20MHz bandwidth(6435MHz~6515MHz)<br>2 channels for 40MHz bandwidth(6465MHz~6545MHz)<br>2 channels for 80MHz bandwidth(6465-6545MHz) |
| Modulation Type | : | 802.11a:OFDM (64QAM, 16QAM, QPSK, BPSK)<br>802.11n: OFDM (BPSK, QPSK, 16QAM, 64QAM)<br>802.11ac: OFDM (BPSK, QPSK, 16QAM, 64QAM, 256QAM)<br>802.11ax: OFDMA (BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024-QAM) |
| Antenna Description | : | Ant1: Internal Antenna, 2.2dBi(Max.)<br>Ant2: Internal Antenna, 2.0dBi(Max.) |
| UNII Band 7 | : | |
| Frequency Range | : | 6535MHz~6855MHz |

| | | |
|---|---|---|
| Channel Number | : | 17 channels for 20MHz bandwidth(6535MHz~6855MHz)<br>9 channels for 40MHz bandwidth(6525MHz~6845MHz)<br>3 channels for 80MHz bandwidth(6625MHz-6785MHz) |
| Modulation Type | : | 802.11a:OFDM (64QAM, 16QAM, QPSK, BPSK)<br>802.11n: OFDM (BPSK, QPSK, 16QAM, 64QAM)<br>802.11ac: OFDM (BPSK, QPSK, 16QAM, 64QAM, 256QAM)<br>802.11ax: OFDMA (BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024-QAM) |
| Antenna Description | : | Ant1: Internal Antenna, 2.2dBi(Max.)<br>Ant2: Internal Antenna, 2.0dBi(Max.) |
| UNII Band 8 | : | |
| Frequency Range | : | 6895MHz~7115MHz |
| Channel Number | : | 13 channels for 20MHz bandwidth(6895MHz~7115MHz)<br>6 channels for 40MHz bandwidth(6925MHz~7085MHz)<br>3 channels for 80MHz bandwidth(6945MHz~7025MHz) |
| Modulation Type | : | 802.11a:OFDM (64QAM, 16QAM, QPSK, BPSK)<br>802.11n: OFDM (BPSK, QPSK, 16QAM, 64QAM)<br>802.11ac: OFDM (BPSK, QPSK, 16QAM, 64QAM, 256QAM)<br>802.11ax: OFDMA (BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024-QAM) |
| Antenna Description | : | Ant1: Internal Antenna, 2.2dBi(Max.)<br>Ant2: Internal Antenna, 2.0dBi(Max.) |

Note: For a more detailed antenna description, please refer to the antenna specifications or the antenna report provided by the customer.

## 1.2. Support equipment List

| Manufacturer | Description | Model | Serial Number | Certificate |
|---|---|---|---|---|
| SHENZHEN TEKA TECHNOLOGY CO., LTD. | AC ADAPTER | TEKA-TB120100 US | --- | FCC |

## 1.3 External I/O Cable

| I/O Port Description | Quantity | Cable |
|---|---|---|
| DC IN Port | 1 | N/A |
| HDMI Port | 1 | 1.0m, unshielded |
| TF Card Port | 1 | N/A |
| USB Port | 2 | N/A |
| LAN Port | 1 | N/A |
| S/PDIF Port | 1 | N/A |

## 1.4. Description of Test Facility

NVLAP Accreditation Code is 600167-0.
FCC Designation Number is CN5024.
CAB identifier is CN0071.
CNAS Registration Number is L4595.
Test Firm Registration Number: 254912.

The 3m-Semi anechoic test site fulfils CISPR 16-1-4 according to ANSI C63.4:2014 and CISPR 16-1-4:2010 SVSWR requirement for radiated emission above 1GHz.

## 1.5. Statement of the Measurement Uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. To CISPR 16 – 4 “Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements” and is documented in the LCS quality system acc. To DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

## 1.6. Measurement Uncertainty

| Test Item | | Frequency Range | Uncertainty | Note |
|---|---|---|---|---|
| Radiation Uncertainty | : | 9KHz~30MHz | ±3.10dB | (1) |
| | | 30MHz~200MHz | ±2.96dB | (1) |
| | | 200MHz~1000MHz | ±3.10dB | (1) |
| | | 1GHz~26.5GHz | ±3.80dB | (1) |
| | | 26.5GHz~40GHz | ±3.90dB | (1) |
| Conduction Uncertainty | : | 150kHz~30MHz | ±1.63dB | (1) |
| Power disturbance | : | 30MHz~300MHz | ±1.60dB | (1) |
| Output power | : | 1GHz-40GHz | ±0.57dB | (1) |
| Power Spectral Density | : | 1GHz-40GHz | ±1.2dB | (1) |
| Occupied Channel Bandwidth | : | 1GHz-40GHz | ±5% | (1) |
| Conducted RF Spurious Emission | : | 9kHz-40GHz | ±1.80dB | (1) |
| Emissions in Restricted Bands | : | 1GHz-40GHz | ±2.47dB | (1) |
| Frequency Stability | : | 1GHz-40GHz | ±25Hz | (1) |

(1). This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

## 1.7. Description of Test Modes

The EUT has been tested under operating condition.

This test was performed with EUT in X, Y, Z position and the worst case was found when EUT in X position.

AC conducted emission pre-test at both at AC 120V/60Hz and AC 240V/60Hz modes, recorded worst case.

AC conducted emission pre-test at both at power adapter modes, recorded worst case.

Worst-case mode and channel used for 150 KHz-30 MHz power line conducted emissions was determined to be IEEE 802.11n HT20 MIMO mode (Low Channel).

Worst-case mode and channel used for 9 KHz-1000 MHz radiated emissions was determined to be IEEE 802.11n HT20 MIMO mode (Low Channel).

Pre-test AC conducted emission at both voltage AC 120V/60Hz and AC 240V/50Hz, recorded worst case.

Worst-Case data rates were utilized from preliminary testing of the Chipset, worst-case data rates used during the testing are as follows: MIMO mode
IEEE 802.11a Mode: 6 Mbps, OFDM.
IEEE 802.11n HT20 Mode: MCS0, OFDM.
IEEE 802.11n HT40 Mode: MCS0, OFDM.
IEEE 802.11ac VHT20 Mode: MCS0.
IEEE 802.11ac VHT40 Mode: MCS0, OFDM.
IEEE 802.11ac VHT80 Mode: MCS0, OFDM.
IEEE 802.11ax HEW20 Mode: HE1MCS0, RU242, OFDMA.
IEEE 802.11ax HEW40 Mode: HE1MCS0, RU484, OFDMA.
IEEE 802.11ax HEW80 Mode: HE1MCS0, RU996, OFDMA.
Note: 1. for 802.11ax mode, all RU are tested, and only the worst RU(full RU)are recorded in the report.
2. All data rates for each modulation type have been tested and found the data rate @ MCS0 is the worst case of IEEE 802.11ax 20/40/80, Only the data of worst case is recorded in the report.
3. UNI-5/-6/-7/-8 can't transmit simultaneously.

Antenna & Bandwidth

| Antenna | Chain1 (Ant1) | | | Chain2 (Ant2) | | |
|---|---|---|---|---|---|---|
| Bandwidth Mode | 20MHz | 40MHz | 80MHz | 20MHz | 40MHz | 80MHz |
| IEEE 802.11a | ☑ | ☐ | ☐ | ☑ | ☐ | ☐ |
| IEEE 802.11n | ☑ | ☑ | ☐ | ☑ | ☑ | ☐ |
| IEEE 802.11ac | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ |
| IEEE 802.11ax | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ |

## 1.8. Channel List and Frequency

| IEEE 802.11ax (HE20) | | IEEE 802.11ax (HE40) | | IEEE 802.11ax (HE80) | |
|---|---|---|---|---|---|
| CH | Freq. (MHz) | CH | Freq. (MHz) | CH | Freq. (MHz) |
| UNII Band 5 | | | | | |
| 1 | 5955 | 3 | 5965 | 7 | 5985 |
| 5 | 5975 | 11 | 6005 | 23 | 6065 |
| 9 | 5995 | 19 | 6045 | 39 | 6145 |
| 13 | 6015 | 27 | 6085 | 55 | 6225 |
| 17 | 6035 | 35 | 6125 | 71 | 6305 |
| 21 | 6055 | 43 | 6165 | 87 | 6385 |
| 25 | 6075 | 51 | 6205 | / | / |
| 29 | 6095 | 59 | 6245 | / | / |
| 33 | 6115 | 67 | 6285 | / | / |
| 37 | 6135 | 75 | 6325 | / | / |
| 41 | 6155 | 83 | 6365 | / | / |
| 45 | 6175 | 91 | 6405 | / | / |
| 49 | 6195 | / | / | / | / |
| 53 | 6215 | / | / | / | / |
| 57 | 6235 | / | / | / | / |
| 61 | 6255 | / | / | / | / |
| 65 | 6275 | / | / | / | / |
| 69 | 6295 | / | / | / | / |
| 73 | 6315 | / | / | / | / |
| 77 | 6335 | / | / | / | / |
| 81 | 6355 | / | / | / | / |
| 85 | 6375 | / | / | / | / |
| 89 | 6395 | / | / | / | / |
| 93 | 6415 | / | / | / | / |
| UNII Band 6 | | | | | |
| 97 | 6435 | 99 | 6445 | 103 | 6465 |
| 101 | 6455 | 107 | 6485 | 119 | 6545（Straddle） |
| 105 | 6475 | 115 | 6525（Straddle） | / | / |
| 109 | 6495 | / | / | / | / |
| 113 | 6515 | / | / | / | / |
| UNII Band 7 | | | | | |
| 117 | 6535 | 123 | 6565 | 135 | 6625 |
| 121 | 6555 | 131 | 6605 | 151 | 6705 |
| 125 | 6575 | 139 | 6645 | 167 | 6785 |
| 129 | 6595 | 147 | 6685 | 183 | 6865（Straddle） |
| 133 | 6615 | 155 | 6725 | / | / |
| 137 | 6635 | 163 | 6765 | / | / |
| 141 | 6655 | 171 | 6805 | / | / |
| 145 | 6675 | 179 | 6845 | / | / |
| 149 | 6695 | 187 | 6885（Straddle） | / | / |

| | | | | | |
|---|---|---|---|---|---|
| 153 | 6715 | / | / | / | / |
| 157 | 6735 | / | / | / | / |
| 161 | 6755 | / | / | / | / |
| 165 | 6775 | / | / | / | / |
| 169 | 6795 | / | / | / | / |
| 173 | 6815 | / | / | / | / |
| 177 | 6835 | / | / | / | / |
| 181 | 6855 | / | / | / | / |
| 185 | 6875（Straddle） | / | / | / | / |
| UNII Band 8 | | | | | |
| 189 | 6895 | 195 | 6925 | 199 | 6945 |
| 193 | 6915 | 203 | 6965 | 215 | 7025 |
| 197 | 6935 | 211 | 7005 | / | / |
| 201 | 6955 | 219 | 7045 | / | / |
| 205 | 6975 | 227 | 7085 | / | / |
| 209 | 6995 | / | / | / | / |
| 213 | 7015 | / | / | / | / |
| 217 | 7035 | / | / | / | / |
| 221 | 7055 | / | / | / | / |
| 225 | 7075 | / | / | / | / |
| 229 | 7095 | / | / | / | / |
| 233 | 7115 | / | / | / | / |

# 2. TEST METHODOLOGY

All measurements contained in this report were conducted with ANSI C63.10-2013, American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices.

The radiated testing was performed at an antenna-to-EUT distance of 3 meters. All radiated and conducted emissions measurement was performed at Shenzhen LCS Compliance Testing Laboratory Ltd.

## 2.1. EUT Configuration

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner that intends to maximize its emission characteristics in a continuous normal application.

## 2.2. EUT Exercise

The EUT was operated in the engineering mode to fix the TX frequency that was for the purpose of the measurements.

According to FCC's request, Test Procedure 987594 D02 U-NII 6 GHz EMC Measurement v01v01 and KDB 662911 D01 Multiple Transmitter Output v02r01 is required to be used for this kind of FCC 15.407 UII device.

According to its specifications, the EUT must comply with the requirements of the Section 15.203, 15.205, 15.207, 15.209 and 15.407 under the FCC Rules Part 15 Subpart E

## 2.3. General Test Procedures

### 2.3.1 Conducted Emissions

The EUT is placed on the turntable, which is 0.8 m above ground plane. According to the requirements in Section 6.2.1 of ANSI C63.10-2013 Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using Quasi-peak and average detector modes.

### 2.3.2 Radiated Emissions

The EUT is placed on a turn table, which is 0.8 m above ground plane below 1GHz and 1.5 m above ground plane above 1GHz. The turntable shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna, which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the maximum emissions, exploratory radiated emission measurements were made according to the requirements in Section 6.3 of ANSI C63.10-2013.

## 2.4. Test Sample

The application provides 2 samples to meet requirement;

| Sample Number | Description |
|---|---|
| Sample 1(A250509055 -1) | Engineer sample – continuous transmit |
| Sample 2(A250509055 -2) | Normal sample – Intermittent transmit |

# 3. SYSTEM TEST CONFIGURATION

## 3.1. Justification

The system was configured for testing in a continuous transmits condition.

## 3.2. EUT Exercise Software

The system was configured for testing in a continuous transmits condition and change test channels by software provided by application.

## 3.3. Special Accessories

| No. | Equipment | Manufacturer | Model No. | Serial No. | Length | shielded/ unshielded | Notes |
|---|---|---|---|---|---|---|---|
| / | / | / | / | / | / | / | / |

## 3.4. Block Diagram/Schematics

Please refer to the related document

## 3.5. Equipment Modifications

Shenzhen LCS Compliance Testing Laboratory Ltd. has not done any modification on the EUT.

## 3.6. Test Setup

Please refer to the test setup photo.

# 4. SUMMARY OF TEST RESULTS

| Applied Standard: FCC Part 15 Subpart E | | | |
|---|---|---|---|
| FCC Rules | Description of Test | Result | Remark |
| 15.407(a)(10) | 26dB Bandwidth | Compliant | Appendix H.1 |
| §15.407(a) | Maximum Conducted Output Power | Compliant | Appendix H.2 |
| §15.407(a) | Power Spectral Density | Compliant | Appendix H.3 |
| §15.209, §15.407(b.7) | In-band Emission | Compliant | Appendix H.4 |
| §15.407(g) | Frequency Stability | Compliant | Appendix H.5 |
| / | On Time and Duty Cycle | / | Only reported; Appendix H.6 |
| 15.407(d)(6) | Contention Based Protocol | Compliant | Appendix H.7 |
| §15.407(b.6) | Conducted Spurious Emissions | Compliant | Appendix H.8 |
| §15.209, §15.407(b) | Radiated Emissions | Compliant | Note 1 |
| §15.207(a) | AC Conducted Emissions | Compliant | Note 1 |
| §15.203 | Antenna Requirements | Compliant | Note 1 |
| §15.407 §2.1091 | RF Exposure | Compliant | Note 2 |

*Remark:*
*1. Note 1 – Test results inside test report;*
*2. Note 2 – Test results in other test report (RF Exposure Evaluation);*

# 5. TEST RESULT

## 5.1. 26dB Occupied Bandwidth Measurement

### 5.1.1. Standard Applicable

| FCC Part15, Subpart E | | |
|---|---|---|
| Test Item | Limit | Frequency Range (MHz) |
| 26 dB Bandwidth | --- | 5955- 6415 |
| | --- | 6435- 6515 |
| | --- | 6535- 6875 |
| | --- | 6895- 7115 |

### 5.1.2. Measuring Instruments and Setting

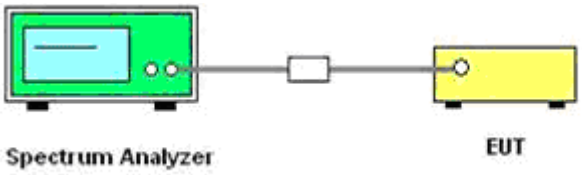
Please refer to equipment list in this report. The following table is the setting of the Spectrum Analyzer.

| Spectrum Parameter | Setting |
|---|---|
| Attenuation | Auto |
| Span | > 26dB Bandwidth |
| RBW | approximately 1% of the emission bandwidth. |
| VBW | > RBW |
| Detector | Peak |
| Trace | Max Hold |
| Sweep Time | Auto |

### 5.1.3. Test Procedures

Allow the trace to stabilize, measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 26 dB relative to the maximum level measured in the fundamental emission.

### 5.1.4. Test Setup Layout




### 5.1.5. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

### 5.1.6. Test Result of 6dB Occupied Bandwidth

*PASS.*

*Please refer to Appendix H.1*

*Remark:*

1. *Measured 26dB bandwidth at difference data rate for each mode and recorded worst case for each mode.*
2. *Test results including cable loss;*
3. *All data rates for each modulation type have been tested and found the data rate @ MCS0 is the worst case of IEEE 802.11ax 20/40/80, Only the data of worst case is recorded in the report.*

## 5.2. Maximum Conducted Output Power Measurement

### 5.2.1. Standard Applicable

| FCC Part15, Subpart E | | |
|---|---|---|
| Devices type | Limit | Frequency Range (MHz) |
| RLAN devices other than client devices | For FCC: standard power access point and fixed client device: 36 dBm<br>outdoor devices: any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm). | 5925-6425 and 6525-6875 |
| | For FCC: indoor access point: 30 dBm | 5925-7125 |
| | For FCC: a subordinate device operating under the control of an indoor access point: 30 dBm | 5925-7125 |
| | For RSS: 30 dBm/occupied bandwidth. | 5925-7125 |
| Client devices | For FCC: client devices under the control of a standard power access point: 30 dBm, and the device must limit its power to no more than 6 dB below its associated standard power access point's authorized transmit power. | 5925-6425 and 6525-6875 |
| | For FCC: For client devices operating under the control of an indoor access point: 24 dBm | 5925-7125 |
| | For RSS: 24 dBm/occupied bandwidth | 5925-7125 |

### 5.2.2. Measuring Instruments and Setting

Please refer to equipment list in this report. The following table is the setting of the power meter.

### 5.2.3. Test Procedures

The transmitter output (antenna port) was connected to the power meter.

According to 987594 D02 U-NII 6 GHz EMC Measurement v01v01 Section E. Maximum Conducted Output Power

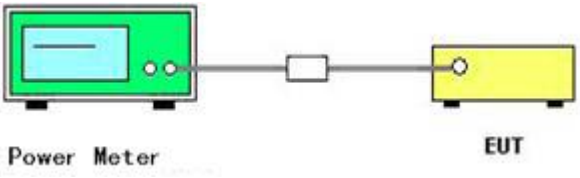
(i) Measurements may be performed using a wideband RF power meter with a thermocouple detector or equivalent if all of the conditions listed below are satisfied.

- The EUT is configured to transmit continuously or to transmit with a constant duty cycle.
- At all times when the EUT is transmitting, it must be transmitting at its maximum power control level.
- The integration period of the power meter exceeds the repetition period of the transmitted signal by at least a factor of five.

(ii) If the transmitter does not transmit continuously, measure the duty cycle, x, of the transmitter output signal as described in section II.B.

(iii) Measure the average power of the transmitter. This measurement is an average over both the on and off periods of the transmitter.

### 5.2.4. Test Setup Layout




5.2.5. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

5.2.6. Test Result of Maximum Conducted Output Power

Limits

| Mode | Antenna 1 Gain (dBi) | Antenna 2 Gain (dBi) | Directional Gain (dBi) | Power Limit (dBm) |
|---|---|---|---|---|
| IEEE 802.11 axMIMO | 2.2 | 2.0 | 5.11 | 24 |

*PASS*

*Please refer to Appendix H.2*

*Remark:*

1. *Measured output power at difference data rate for each mode and recorded worst case for each mode.*
2. *Test results including cable loss;*
3. *All data rates for each modulation type have been tested and found the data rate @ MCS0 is the worst case of IEEE 802.11ax 20/40/80, Only the data of worst case is recorded in the report.*
4. *Report conducted power = Measured conducted average power + Duty Cycle factor;*
5. *For power measurements on IEEE 802.11 devices;*
   *Array Gain = 0 dB (i.e., no array gain) for NANT ≤ 4;*
   *Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any NANT;*
   *Array Gain = 5 log (NANT/NSS) dB or 3 dB, whichever is less, for 20-MHz channel widths with NANT ≥ 5.*

## 5.4. Power Spectral Density Measurement

### 5.4.1. Standard Applicable

| FCC Part15, Subpart E | | |
|---|---|---|
| Devices type | Limit | Frequency Range (MHz) |
| RLAN devices other than client devices | For FCC: standard power access point and fixed client device: 23 dBm e.i.r.p in any 1-megahertz band<br>outdoor devices: any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm). | 5925-6425 and 6525-6875 |
| | For FCC: indoor access point: 5 dBm e.i.r.p. in any 1-megahertz band | 5925-7125 |
| | For FCC: a subordinate device operating under the control of an indoor access point: 5 dBm e.i.r.p. in any 1-megahertz band | 5925-7125 |
| | For RSS: 5 dBm/MHz | 5925-7125 |
| Client devices | For FCC: client devices under the control of a standard power access point: 17 dBm e.i.r.p. in any 1-megahertz band | 5925-6425 and 6525-6875 |
| | For FCC: For client devices operating under the control of an indoor access point: −1 dBm e.i.r.p. in any 1-megahertz band | 5925-7125 |
| | For RSS: -1 dBm/MHz | 5925-7125 |

### 5.4.2. Measuring Instruments and Setting

Please refer to equipment list in this report. The following table is the setting of Spectrum Analyzer.

### 5.4.3. Test Procedures

1). The transmitter was connected directly to a Spectrum Analyzer through a directional couple.

2). The power was monitored at the coupler port with a Spectrum Analyzer. The power level was set to the maximum level.

3). Set the RBW = 1MHz

4). Set the VBW ≥ 3*RBW

5). Span=Encompass the entire emissions bandwidth (EBW) of the signal

6). Detector = RMS.

7). Sweep time = auto couple.

8). Trace mode = max hold.

9). Allow trace to fully stabilize.

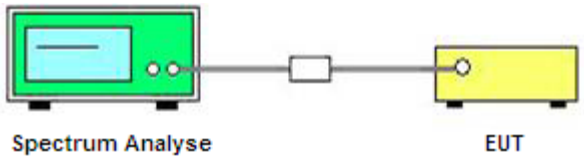
10). If measurement bandwidth of Maximum PSD is specified in 500 kHz, add 10 log (500 kHz/RBW) to the measured result, whereas RBW (<500 kHz) is the reduced resolution bandwidth of the spectrum analyzer set during measurement.

11). If measurement bandwidth of Maximum PSD is specified in 1 MHz, add 10 log (1MHz/RBW) to the

measured result, whereas RBW (< 1 MHz) is the reduced resolution bandwidth of spectrum analyzer set during measurement.

12). Care must be taken to ensure that the measurements are performed during a period of continuous transmission or are corrected upward for duty cycle.

5.4.4. Test Setup Layout




5.4.5. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

5.4.6. Test Result of Power Spectral Density

Limits

| Mode | Antenna 1 Gain (dBi) | Antenna 2 Gain (dBi) | Directional Gain (dBi) | Power Limit (dBm) |
|---|---|---|---|---|
| IEEE 802.11 ax MIMO | 2.2 | 2.0 | 5.11 | -1 |

Note:Directional Gain=Antenna 2(max)+3.01

*PASS.*

*Please refer to Appendix H.3.*

*Remark:*

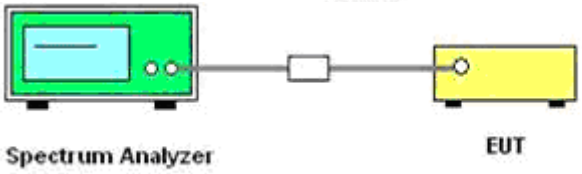
1. *Measured power spectrum density at difference data rate for each mode and recorded worst case for each mode.*
2. *Test results including cable loss;*
3. *All data rates for each modulation type have been tested and found the data rate @ MCS0 is the worst case of IEEE 802.11ax 20/40/80, Only the data of worst case is recorded in the report.*
4. *Report conducted PSD = measured conducted PSD + Duty Cycle factor + RBW factor;*
5. *For MIMO with CCD technology device, The Directional Gain= Gain of individual transmit antennas (dBi) + Array gain;*
   *Array gain = 10 log (Nant), where Nant is the number of transmit antennas*

## 5.5. In-band Emission

5.5.1 Limit

In-band Emission :For transmitters operating within the 5.925-7.125 GHz bands: Power spectral density must be suppressed by 20 dB at 1 MHz outside of channel edge, by 28 dB at one channel bandwidth from the channel center, and by 40 dB at one- and one-half times the channel bandwidth away from channel center. At frequencies between one megahertz outside an unlicensed device's channel edge and one channel bandwidth from the center of the channel, the limits must be linearly interpolated between 20 dB and 28 dB suppression, and at frequencies between one and one- and one-half times an unlicensed device's channel bandwidth, the limits must be linearly interpolated between 28 dB and 40 dB suppression. Emissions removed from the channel center by more than one- and one-half times the channel bandwidth must be suppressed by at least 40 dB.

5.5.2 Test Configuration




5.5.3 Test Procedure

1. The power was monitored at the coupler port with a Spectrum Analyzer. The power level was set to the maximum level.
2. Set the RBW = Same RBW used for 26 db EBW measurement
3. Set the VBW ≥ 3* RBW
4. Number of points in sweep ≥ 2 × span / RBW. (This ensures that bin-to-bin spacing is ≤ RBW/2, so that narrowband signals are not lost between frequency bins.)
5. Manually set sweep time ≥ 10 × (number of points in sweep) × (total on/off period of the transmitted signal).
6. Set detector = power averaging (rms).
7. Sweep time = auto couple.
8. Trace mode = max hold.
9. Allow trace to fully stabilize.

5.5.4 Test Results

*PASS*

*Please refer to Appendix H.4.*

*Remark:*

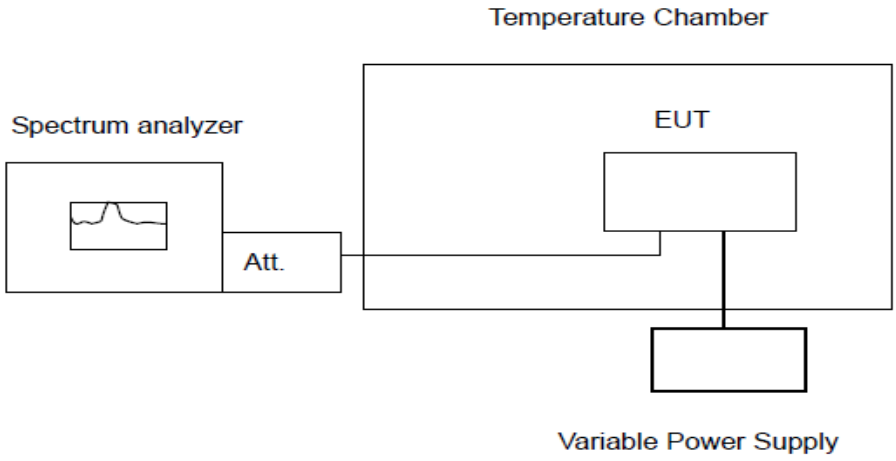
1. *Measured unwanted emission at difference data rate for each mode and recorded worst case for each mode;*
2. *Test results including cable loss;*
3. *All data rates for each modulation type have been tested and found the data rate @ MCS0 is the worst case of IEEE 802.11ax 20/40/80, Only the data of worst case is recorded in the report.*

## 5.6. Frequency Stability

### 5.6.1 Standard Applicable

Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

### 5.6.2 Test Configuration




### 5.6.3 Test Procedure

(1) To ensure emission at the band edge is maintained within the authorized band, those values shall be measured by radiation emissions at upper and lower frequency points, and finally compensated by frequency deviation as procedures below.

(2) The EUT was operated at the maximum output power, and connected to the spectrum analyzer, which is set to maximum hold function and peak detector. The peak value of the power envelope was measured and noted. The upper and lower frequency points were respectively measured relatively 10 dB lower than the measured peak value.

(3) The frequency deviation was calculated by adding the upper frequency point and the lower frequency point divided by two. Those detailed values of frequency deviation are provided in table below.

### 5.6.4 Test Results

PASS

*Please refer to Appendix H.5*

## 5.7. On Time and Duty Cycle

### 5.7.1. Standard Applicable

None; for reporting purpose only.

### 5.7.2. Measuring Instruments and Setting

Please refer to equipment list in this report. The following table is the setting of the spectrum analyzer.

### 5.7.3. Test Procedures

Connected the EUT's antenna port to the Spectrum Analyzer by suitable attenuator, The cable loss and attenuator loss have been put into spectrum analyzer as amplitude offset.

set the Spectrum Analyzer as below:

Centre Frequency: The centre frequency of the middle hopping channel.

Resolution BW: 10 MHz.

Video BW: 10 MHz.

Span: Zero span.

Detector: Peak.

Sweep: Video Trigger

(2) When the trace is complete, measure the sending time of 1 burst and the duty cycle of 1 burst cycle.

(3) Calculate dwell time follow below formula:

Duty cycle= Pulse's on time / Burst cycle

### 5.7.4. Test Setup Layout


### 5.7.5. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

### 5.7.6. Test result

*For reporting purpose only.*

*Please refer to Appendix H.6*

## 5.8. Radiated Emissions Measurement

### 5.8.1. Standard Applicable

15.205 (a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

| MHz | MHz | MHz | GHz |
|---|---|---|---|
| 0.090-0.110 | 16.42-16.423 | 399.9-410 | 4.5-5.15 |
| \1\ 0.495-0.505 | 16.69475-16.69525 | 608-614 | 5.35-5.46 |
| 2.1735-2.1905 | 16.80425-16.80475 | 960-1240 | 7.25-7.75 |
| 4.125-4.128 | 25.5-25.67 | 1300-1427 | 8.025-8.5 |
| 4.17725-4.17775 | 37.5-38.25 | 1435-1626.5 | 9.0-9.2 |
| 4.20725-4.20775 | 73-74.6 | 1645.5-1646.5 | 9.3-9.5 |
| 6.215-6.218 | 74.8-75.2 | 1660-1710 | 10.6-12.7 |
| 6.26775-6.26825 | 108-121.94 | 1718.8-1722.2 | 13.25-13.4 |
| 6.31175-6.31225 | 123-138 | 2200-2300 | 14.47-14.5 |
| 8.291-8.294 | 149.9-150.05 | 2310-2390 | 15.35-16.2 |
| 8.362-8.366 | 156.52475-156.52525 | 2483.5-2500 | 17.7-21.4 |
| 8.37625-8.38675 | 156.7-156.9 | 2690-2900 | 22.01-23.12 |
| 8.41425-8.41475 | 162.0125-167.17 | 3260-3267 | 23.6-24.0 |
| 12.29-12.293. | 167.72-173.2 | 3332-3339 | 31.2-31.8 |
| 12.51975-12.52025 | 240-285 | 3345.8-3358 | 36.43-36.5 |
| 12.57675-12.57725 | 322-335.4 | 3600-4400 | (\2\) |
| 13.36-13.41 | | | |

\1\ Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.
\2\ Above 38.6

In addition, In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

| Frequencies (MHz) | Field Strength (microvolts/meter) | Measurement Distance (meters) |
|---|---|---|
| 0.009~0.490 | 2400/F(KHz) | 300 |
| 0.490~1.705 | 24000/F(KHz) | 30 |
| 1.705~30.0 | 30 | 30 |
| 30~88 | 100 | 3 |
| 88~216 | 150 | 3 |
| 216~960 | 200 | 3 |
| Above 960 | 500 | 3 |

### 5.8.2. Measuring Instruments and Setting

Please refer to equipment list in this report. The following table is the setting of spectrum analyzer and receiver.

| Spectrum Parameter | Setting |
|---|---|
| Attenuation | Auto |
| Start Frequency | 1000 MHz |
| Stop Frequency | 10$^{th}$ carrier harmonic |
| RB / VB (Emission in restricted band) | 1MHz / 1MHz for Peak, 1 MHz / 1/B kHz for Average |
| RB / VB (Emission in non-restricted band) | 1MHz / 1MHz for Peak, 1 MHz / 1/B kHz for Average |

| Receiver Parameter | Setting |
|---|---|
| Attenuation | Auto |
| Start ~ Stop Frequency | 9kHz~150kHz / RB/VB 200Hz/1KHz for QP/AVG |
| Start ~ Stop Frequency | 150kHz~30MHz / RB/VB 9kHz/30KHz for QP/AVG |
| Start ~ Stop Frequency | 30MHz~1000MHz / RB/VB 120kHz/1MHz for QP |

5.8.3. Test Procedures

**1) Sequence of testing 9 kHz to 30 MHz**

**Setup:**

--- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.

--- If the EUT is a tabletop system, a rotatable table with 0.8 m height is used.

--- If the EUT is a floor standing device, it is placed on the ground.

--- Auxiliary equipment and cables were positioned to simulate normal operation conditions.

--- The AC power port of the EUT (if available) is connected to a power outlet below the turntable.

--- The measurement distance is 3 meter.

--- The EUT was set into operation.

**Premeasurement:**

--- The turntable rotates from 0° to 315° using 45° steps.

--- The antenna height is 1.0 meter.

--- At each turntable position the analyzer sweeps with peak detection to find the maximum of all emissions

**Final measurement:**

--- Identified emissions during the premeasurement the software maximizes by rotating the turntable position (0° to 360°) and by rotating the elevation axes (0° to 360°).

--- The final measurement will be done in the position (turntable and elevation) causing the highest emissions with QPK detector.

--- The final levels, frequency, measuring time, bandwidth, turntable position, correction factor, margin to the limit and limit will be recorded. Also a plot with the graph of the premeasurement and the limit will be stored.

**2) Sequence of testing 30 MHz to 1 GHz**

**Setup:**

--- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.

--- If the EUT is a tabletop system, a table with 0.8 m height is used, which is placed on the ground plane.

--- If the EUT is a floor standing device, it is placed on the ground plane with insulation between both.

--- Auxiliary equipment and cables were positioned to simulate normal operation conditions

--- The AC power port of the EUT (if available) is connected to a power outlet below the turntable.

--- The measurement distance is 3 meter.

--- The EUT was set into operation.

**Premeasurement:**

--- The turntable rotates from 0° to 315° using 45° steps.

--- The antenna is polarized vertical and horizontal.

--- The antenna height changes from 1 to 3 meter.

--- At each turntable position, antenna polarization and height the analyzer sweeps three times in peak to find the maximum of all emissions.

**Final measurement:**

--- The final measurement will be performed with minimum the six highest peaks.

--- According to the maximum antenna and turntable positions of premeasurement the software maximize the peaks by changing turntable position (± 45°) and antenna movement between 1 and 4 meter.

--- The final measurement will be done with QP detector with an EMI receiver.

--- The final levels, frequency, measuring time, bandwidth, antenna height, antenna polarization, turntable angle, correction factor, margin to the limit and limit will be recorded. Also a plot with the graph of the premeasurement with marked maximum final measurements and the limit will be stored.

**3) Sequence of testing 1 GHz to 18 GHz**

**Setup:**

--- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.

--- If the EUT is a tabletop system, a rotatable table with 1.5 m height is used.

--- If the EUT is a floor standing device, it is placed on the ground plane with insulation between both.

--- Auxiliary equipment and cables were positioned to simulate normal operation conditions

--- The AC power port of the EUT (if available) is connected to a power outlet below the turntable.

--- The measurement distance is 3 meter.

--- The EUT was set into operation.

**Premeasurement:**

--- The turntable rotates from 0° to 315° using 45° steps.

--- The antenna is polarized vertical and horizontal.

--- The antenna height scan range is 1 meter to 2.5 meter.

--- At each turntable position and antenna polarization the analyzer sweeps with peak detection to find the maximum of all emissions.

**Final measurement:**

--- The final measurement will be performed with minimum the six highest peaks.

--- According to the maximum antenna and turntable positions of premeasurement the software maximize the peaks by changing turntable position (± 45°) and antenna movement between 1 and 4 meter. This procedure is repeated for both antenna polarizations.

--- The final measurement will be done in the position (turntable, EUT-table and antenna polarization) causing the highest emissions with Peak and Average detector.

--- The final levels, frequency, measuring time, bandwidth, turntable position, EUT-table position, antenna polarization, correction factor, margin to the limit and limit will be recorded. Also a plot with the graph of the premeasurement with marked maximum final measurements and the limit will be stored.

**4) Sequence of testing above 18 GHz**

**Setup:**

--- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.

--- If the EUT is a tabletop system, a rotatable table with 1.5 m height is used.

--- If the EUT is a floor standing device, it is placed on the ground plane with insulation between both.

--- Auxiliary equipment and cables were positioned to simulate normal operation conditions

--- The AC power port of the EUT (if available) is connected to a power outlet below the turntable.

--- The measurement distance is 1 meter.

--- The EUT was set into operation.

**Premeasurement:**

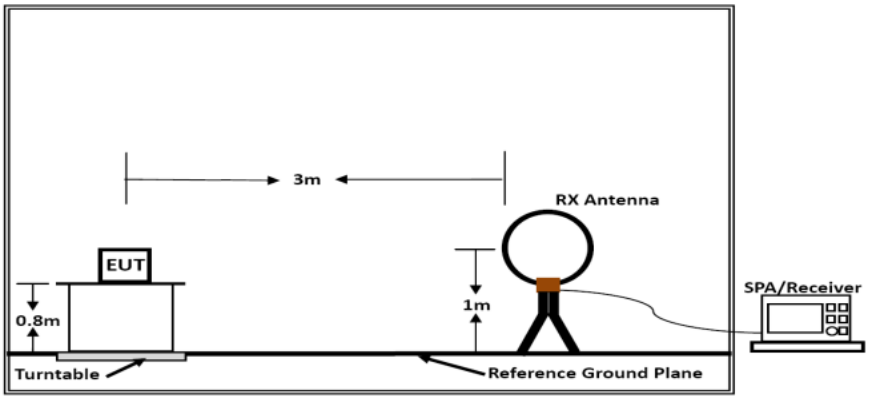
--- The antenna is moved spherical over the EUT in different polarizations of the antenna.

**Final measurement:**

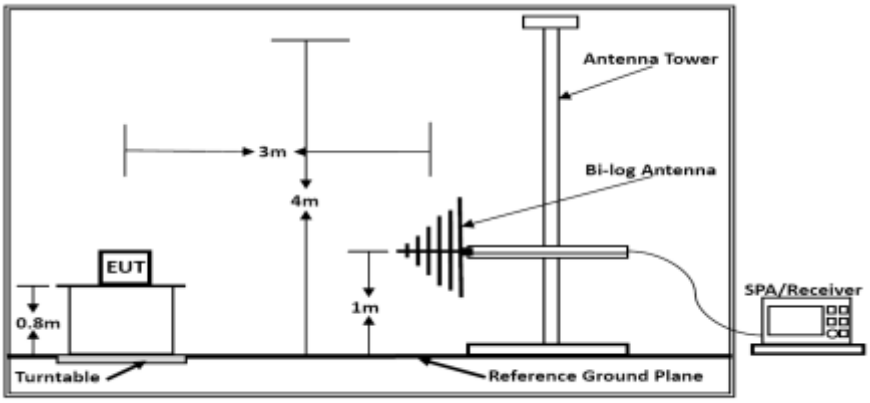
--- The final measurement will be performed at the position and antenna orientation for all detected emissions that were found during the premeasurements with Peak and Average detector.

--- The final levels, frequency, measuring time, bandwidth, correction factor, margin to the limit and limit will be recorded. Also a plot with the graph of the premeasurement and the limit will be stored.

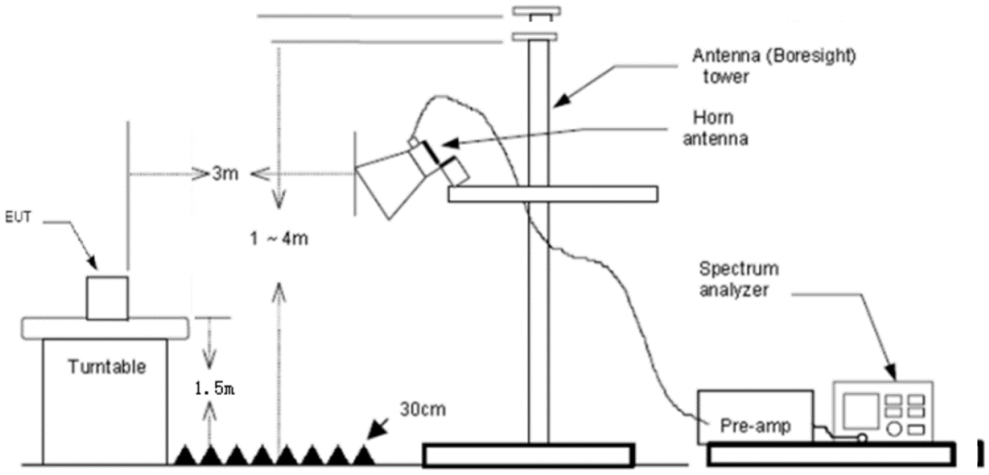
5.8.4. Test Setup Layout




Below 30MHz




Below 1GHz




Above 18 GHz shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade form 3m to 1m.

5.8.5. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

5.8.6. Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor and subtracting the Amplifier Gain and Duty Cycle Correction Factor (if any) from the measured reading. The basic equation with a sample calculation is as follows:

**FS (dBuV/m) = RA (dBuV) + AF (dB/m) + CL (dB) – AG (dB)**

| | |
|---|---|
| Where FS = Field Strength | CL = Cable Attenuation Factor (Cable Loss) |
| RA = Reading Amplitude | AG = Amplifier Gain |
| AF = Antenna Factor | |

5.8.7. Results of Radiated Emissions (9 KHz~30 MHz)

| | | | |
|---|---|---|---|
| Temperature | 23.8℃ | Humidity | 52.1% |
| Test Engineer | Paddi Chen | Configurations | IEEE 802.11a/n/ac/ax |

| Freq. (MHz) | Level (dBuV) | Over Limit (dB) | Over Limit (dB) | Remark |
|---|---|---|---|---|
| - | - | - | - | See Note |

Note:

The amplitude of spurious emissions which are attenuated by more than 20 dB below the permissible value has no need to be reported.

Distance extrapolation factor = 40 log (specific distance / test distance) (dB);
Limit line = specific limits (dBuV) + distance extrapolation factor.

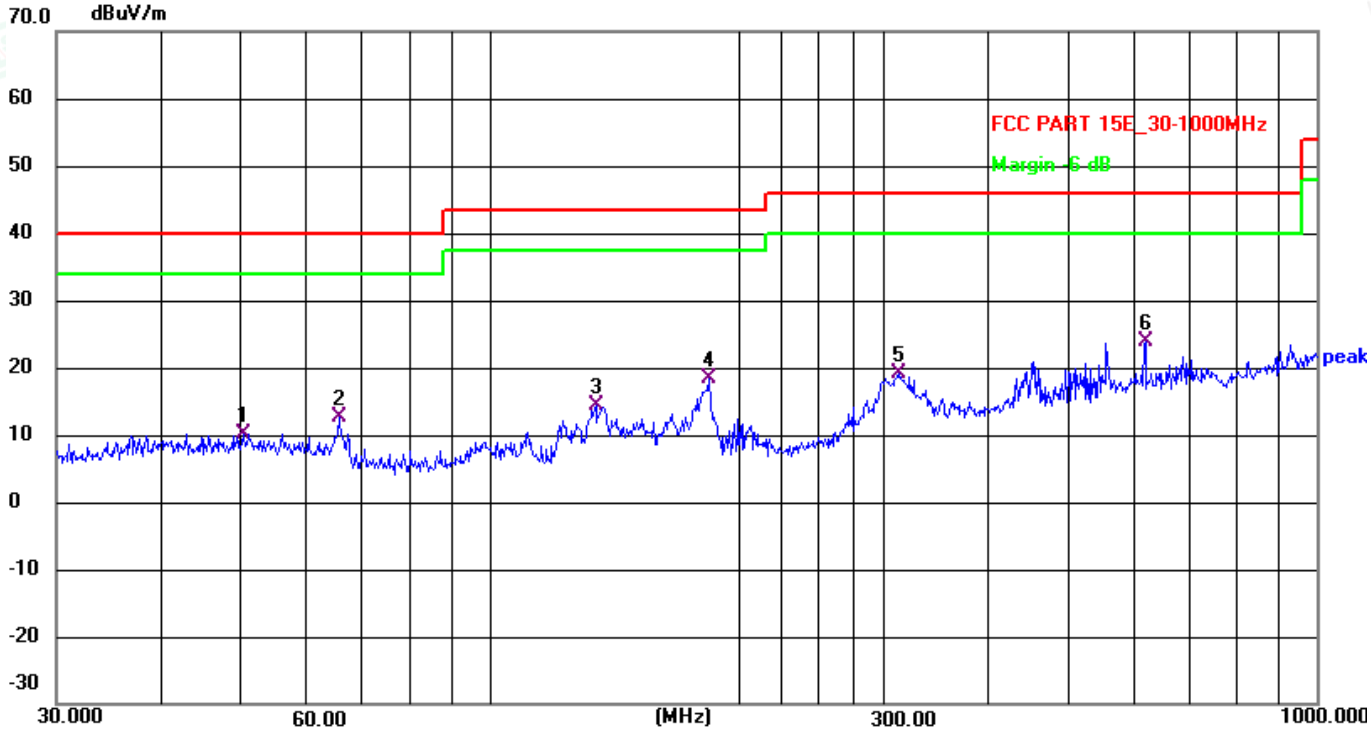
5.8.8. Results of Radiated Emissions (30 MHz~1 GHz)

| | | | |
|---|---|---|---|
| Temperature | 23.8℃ | Humidity | 52.1% |
| Test Engineer | Paddi Chen | Configurations | IEEE 802.11a/n/ac/ax |

**PASS.**

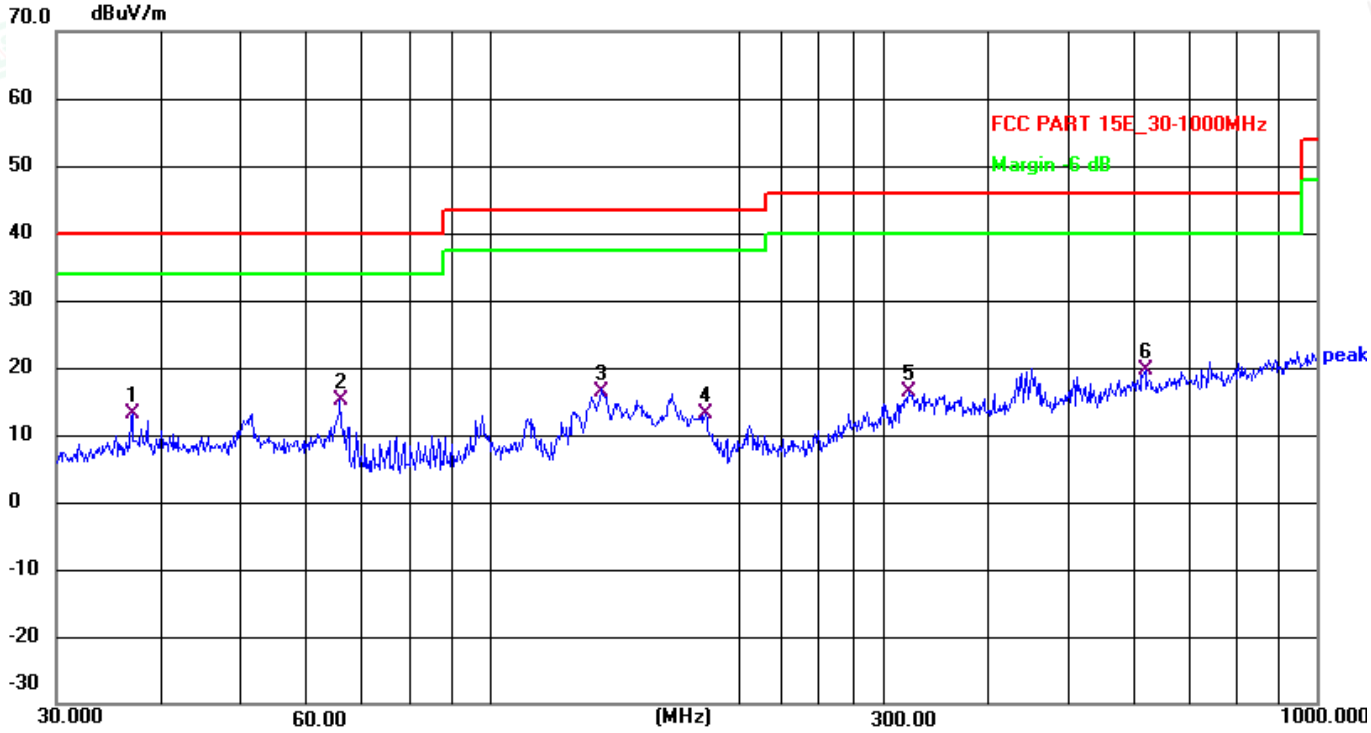
The test data please refer to following page.

*Horizontal*




| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector |
|---|---|---|---|---|---|---|---|
| 1 | 50.4089 | 26.30 | -16.06 | 10.24 | 40.00 | -29.76 | QP |
| 2 | 65.8030 | 30.57 | -17.97 | 12.60 | 40.00 | -27.40 | QP |
| 3 | 134.5591 | 34.30 | -19.88 | 14.42 | 43.50 | -29.08 | QP |
| 4 | 184.4898 | 38.37 | -20.05 | 18.32 | 43.50 | -25.18 | QP |
| 5 | 312.1794 | 34.58 | -15.46 | 19.12 | 46.00 | -26.88 | QP |
| 6 | 620.7096 | 34.15 | -10.30 | 23.85 | 46.00 | -22.15 | QP |

*Vertical*




| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector |
|---|---|---|---|---|---|---|---|
| 1 | 37.0248 | 30.92 | -17.69 | 13.23 | 40.00 | -26.77 | QP |
| 2 | 66.0342 | 34.41 | -19.22 | 15.19 | 40.00 | -24.81 | QP |
| 3 | 136.4598 | 37.26 | -20.77 | 16.49 | 43.50 | -27.01 | QP |
| 4 | 182.5592 | 31.75 | -18.59 | 13.16 | 43.50 | -30.34 | QP |
| 5 | 321.0608 | 30.77 | -14.42 | 16.35 | 46.00 | -29.65 | QP |
| 6 | 620.7096 | 30.65 | -10.97 | 19.68 | 46.00 | -26.32 | QP |

*Note:*

*1). Pre-scan all modes and recorded the worst case results in this report IEEE 802.11 AX20MIMO mode (Low Channel).*
*2). Emission level (dBuV/m) = 20 log Emission level (uV/m).*
*3). Level = Reading + Factor, Margin = Level–Limit, Factor = Antenna Factor + Cable Loss - Preamp Factor.*

5.8.9. Results for Radiated Emissions (1 – 40 GHz)

*Note: All the modes have been tested and recorded worst mode in the report.*

*IEEE 802.11AX20MIMO MIMO*

*Channel 1/5955MHz*

| Freq GHz | Read Level dBuV | Ant. Fac dB/m | Pre. Fac dB | Cab.Los dB | Measured Level dBuV | Limit Line dBuV/m | Over limit dB | Remark | Pol/Phase |
|---|---|---|---|---|---|---|---|---|---|
| 17.235 | 62.58 | 33.23 | 35.04 | 3.91 | 64.68 | 68.20 | -3.52 | Peak | Horizontal |
| 17.235 | 43.38 | 33.23 | 35.04 | 3.91 | 45.48 | 54.00 | -8.52 | Average | Horizontal |
| 17.235 | 56.63 | 33.23 | 35.04 | 3.91 | 58.73 | 68.20 | -9.47 | Peak | Vertical |
| 17.235 | 42.48 | 33.23 | 35.04 | 3.91 | 44.58 | 54.00 | -9.42 | Average | Vertical |

*Channel 25 / 6175MHz*

| Freq GHz | Read Level dBuV | Ant. Fac dB/m | Pre. Fac dB | Cab.Los dB | Measured Level dBuV | Limit Line dBuV/m | Over limit dB | Remark | Pol/Phase |
|---|---|---|---|---|---|---|---|---|---|
| 17.355 | 61.21 | 33.27 | 35.15 | 3.93 | 63.26 | 68.20 | -4.94 | Peak | Horizontal |
| 17.355 | 43.10 | 33.27 | 35.15 | 3.93 | 45.15 | 54.00 | -8.85 | Average | Horizontal |
| 17.355 | 59.15 | 33.27 | 35.15 | 3.93 | 61.20 | 68.20 | -7.00 | Peak | Vertical |
| 17.355 | 40.56 | 33.27 | 35.15 | 3.93 | 42.61 | 54.00 | -11.39 | Average | Vertical |

*Channel 93/ 6415MHz*

| Freq GHz | Read Level dBuV | Ant. Fac dB/m | Pre. Fac dB | Cab.Los dB | Measured Level dBuV | Limit Line dBuV/m | Over limit dB | Remark | Pol/Phase |
|---|---|---|---|---|---|---|---|---|---|
| 17.475 | 62.82 | 33.32 | 35.14 | 3.97 | 64.97 | 68.20 | -3.23 | Peak | Horizontal |
| 17.475 | 46.17 | 33.32 | 35.14 | 3.97 | 48.32 | 54.00 | -5.68 | Average | Horizontal |
| 17.475 | 58.21 | 33.32 | 35.14 | 3.97 | 60.36 | 68.20 | -7.84 | Peak | Vertical |
| 17.475 | 42.94 | 33.32 | 35.14 | 3.97 | 45.09 | 54.00 | -8.91 | Average | Vertical |

*Channel 97 / 6435 MHz*

| Freq GHz | Read Level dBuV | Ant. Fac dB/m | Pre. Fac dB | Cab.Los dB | Measured Level dBuV | Limit Line dBuV/m | Over limit dB | Remark | Pol/Phase |
|---|---|---|---|---|---|---|---|---|---|
| 17.235 | 60.36 | 33.23 | 35.04 | 3.91 | 62.46 | 68.20 | -5.74 | Peak | Horizontal |
| 17.235 | 42.83 | 33.23 | 35.04 | 3.91 | 44.93 | 54.00 | -9.07 | Average | Horizontal |
| 17.235 | 58.98 | 33.23 | 35.04 | 3.91 | 61.08 | 68.20 | -7.12 | Peak | Vertical |
| 17.235 | 43.37 | 33.23 | 35.04 | 3.91 | 45.47 | 54.00 | -8.53 | Average | Vertical |

*Channel 105 / 6475 MHz*

| Freq GHz | Read Level dBuV | Ant. Fac dB/m | Pre. Fac dB | Cab.Los dB | Measured Level dBuV | Limit Line dBuV/m | Over limit dB | Remark | Pol/Phase |
|---|---|---|---|---|---|---|---|---|---|
| 17.355 | 59.53 | 33.27 | 35.15 | 3.93 | 61.58 | 68.20 | -6.62 | Peak | Horizontal |
| 17.355 | 40.31 | 33.27 | 35.15 | 3.93 | 42.36 | 54.00 | -11.64 | Average | Horizontal |
| 17.355 | 58.44 | 33.27 | 35.15 | 3.93 | 60.49 | 68.20 | -7.71 | Peak | Vertical |
| 17.355 | 40.92 | 33.27 | 35.15 | 3.93 | 42.97 | 54.00 | -11.03 | Average | Vertical |

*Channel 113 / 6515MHz*

| Freq GHz | Read Level dBuV | Ant. Fac dB/m | Pre. Fac dB | Cab.Los dB | Measured Level dBuV | Limit Line dBuV/m | Over limit dB | Remark | Pol/Phase |
|---|---|---|---|---|---|---|---|---|---|
| 17.475 | 62.07 | 33.32 | 35.14 | 3.97 | 64.22 | 68.20 | -3.98 | Peak | Horizontal |
| 17.475 | 45.62 | 33.32 | 35.14 | 3.97 | 47.77 | 54.00 | -6.23 | Average | Horizontal |
| 17.475 | 59.87 | 33.32 | 35.14 | 3.97 | 62.02 | 68.20 | -6.18 | Peak | Vertical |
| 17.475 | 42.05 | 33.32 | 35.14 | 3.97 | 44.20 | 54.00 | -9.80 | Average | Vertical |

*Channel 117 / 6535 MHz*

| Freq GHz | Read Level dBuV | Ant. Fac dB/m | Pre. Fac dB | Cab.Los dB | Measured Level dBuV | Limit Line dBuV/m | Over limit dB | Remark | Pol/Phase |
|---|---|---|---|---|---|---|---|---|---|
| 17.235 | 62.96 | 33.23 | 35.04 | 3.91 | 65.06 | 68.20 | -3.14 | Peak | Horizontal |
| 17.235 | 44.44 | 33.23 | 35.04 | 3.91 | 46.54 | 54.00 | -7.46 | Average | Horizontal |
| 17.235 | 57.20 | 33.23 | 35.04 | 3.91 | 59.30 | 68.20 | -8.90 | Peak | Vertical |
| 17.235 | 41.69 | 33.23 | 35.04 | 3.91 | 43.79 | 54.00 | -10.21 | Average | Vertical |

*Channel 149 / 6695 MHz*

| Freq GHz | Read Level dBuV | Ant. Fac dB/m | Pre. Fac dB | Cab.Los dB | Measured Level dBuV | Limit Line dBuV/m | Over limit dB | Remark | Pol/Phase |
|---|---|---|---|---|---|---|---|---|---|
| 17.355 | 61.99 | 33.27 | 35.15 | 3.93 | 64.04 | 68.20 | -4.16 | Peak | Horizontal |
| 17.355 | 42.09 | 33.27 | 35.15 | 3.93 | 44.14 | 54.00 | -9.86 | Average | Horizontal |
| 17.355 | 59.57 | 33.27 | 35.15 | 3.93 | 61.62 | 68.20 | -6.58 | Peak | Vertical |
| 17.355 | 41.52 | 33.27 | 35.15 | 3.93 | 43.57 | 54.00 | -10.43 | Average | Vertical |

*Channel 181 / 6855MHz*

| Freq GHz | Read Level dBuV | Ant. Fac dB/m | Pre. Fac dB | Cab.Los dB | Measured Level dBuV | Limit Line dBuV/m | Over limit dB | Remark | Pol/Phase |
|---|---|---|---|---|---|---|---|---|---|
| 17.475 | 62.08 | 33.32 | 35.14 | 3.97 | 64.23 | 68.20 | -3.97 | Peak | Horizontal |
| 17.475 | 45.37 | 33.32 | 35.14 | 3.97 | 47.52 | 54.00 | -6.48 | Average | Horizontal |
| 17.475 | 58.11 | 33.32 | 35.14 | 3.97 | 60.26 | 68.20 | -7.94 | Peak | Vertical |
| 17.475 | 41.40 | 33.32 | 35.14 | 3.97 | 43.55 | 54.00 | -10.45 | Average | Vertical |

*Channel 185 / 6875MHz*

| Freq GHz | Read Level dBuV | Ant. Fac dB/m | Pre. Fac dB | Cab.Los dB | Measured Level dBuV | Limit Line dBuV/m | Over limit dB | Remark | Pol/Phase |
|---|---|---|---|---|---|---|---|---|---|
| 17.235 | 61.04 | 33.23 | 35.04 | 3.91 | 63.14 | 68.20 | -5.06 | Peak | Horizontal |
| 17.235 | 44.95 | 33.23 | 35.04 | 3.91 | 47.05 | 54.00 | -6.95 | Average | Horizontal |
| 17.235 | 56.82 | 33.23 | 35.04 | 3.91 | 58.92 | 68.20 | -9.28 | Peak | Vertical |
| 17.235 | 43.85 | 33.23 | 35.04 | 3.91 | 45.95 | 54.00 | -8.05 | Average | Vertical |

*Channel 189 / 6895MHz*

| Freq GHz | Read Level dBuV | Ant. Fac dB/m | Pre. Fac dB | Cab.Los dB | Measured Level dBuV | Limit Line dBuV/m | Over limit dB | Remark | Pol/Phase |
|---|---|---|---|---|---|---|---|---|---|
| 17.355 | 59.12 | 33.27 | 35.15 | 3.93 | 61.17 | 68.20 | -7.03 | Peak | Horizontal |
| 17.355 | 41.51 | 33.27 | 35.15 | 3.93 | 43.56 | 54.00 | -10.44 | Average | Horizontal |
| 17.355 | 59.57 | 33.27 | 35.15 | 3.93 | 61.62 | 68.20 | -6.58 | Peak | Vertical |
| 17.355 | 41.53 | 33.27 | 35.15 | 3.93 | 43.58 | 54.00 | -10.42 | Average | Vertical |

*Channel 209/ 6995 MHz*

| Freq GHz | Read Level dBuV | Ant. Fac dB/m | Pre. Fac dB | Cab.Los dB | Measured Level dBuV | Limit Line dBuV/m | Over limit dB | Remark | Pol/Phase |
|---|---|---|---|---|---|---|---|---|---|
| 17.475 | 62.95 | 33.32 | 35.14 | 3.97 | 65.10 | 68.20 | -3.10 | Peak | Horizontal |
| 17.475 | 44.49 | 33.32 | 35.14 | 3.97 | 46.64 | 54.00 | -7.36 | Average | Horizontal |
| 17.475 | 57.80 | 33.32 | 35.14 | 3.97 | 59.95 | 68.20 | -8.25 | Peak | Vertical |
| 17.475 | 42.04 | 33.32 | 35.14 | 3.97 | 44.19 | 54.00 | -9.81 | Average | Vertical |

*Channel 233 / 7115 MHz*

| Freq GHz | Read Level dBuV | Ant. Fac dB/m | Pre. Fac dB | Cab.Los dB | Measured Level dBuV | Limit Line dBuV/m | Over limit dB | Remark | Pol/Phase |
|---|---|---|---|---|---|---|---|---|---|
| 17.235 | 62.34 | 33.23 | 35.04 | 3.91 | 64.44 | 68.20 | -3.76 | Peak | Horizontal |
| 17.235 | 42.23 | 33.23 | 35.04 | 3.91 | 44.33 | 54.00 | -9.67 | Average | Horizontal |
| 17.235 | 58.29 | 33.23 | 35.04 | 3.91 | 60.39 | 68.20 | -7.81 | Peak | Vertical |
| 17.235 | 43.24 | 33.23 | 35.04 | 3.91 | 45.34 | 54.00 | -8.66 | Average | Vertical |

*IEEE 802.11AX40MIMO MIMO*

*Channel 3 / 5965MHz*

| Freq GHz | Read Level dBuV | Ant. Fac dB/m | Pre. Fac dB | Cab.Los dB | Measured Level dBuV | Limit Line dBuV/m | Over limit dB | Remark | Pol/Phase |
|---|---|---|---|---|---|---|---|---|---|
| 17.355 | 60.41 | 33.27 | 35.15 | 3.93 | 62.46 | 68.20 | -5.74 | Peak | Horizontal |
| 17.355 | 41.20 | 33.27 | 35.15 | 3.93 | 43.25 | 54.00 | -10.75 | Average | Horizontal |
| 17.355 | 60.29 | 33.27 | 35.15 | 3.93 | 62.34 | 68.20 | -5.86 | Peak | Vertical |
| 17.355 | 40.76 | 33.27 | 35.15 | 3.93 | 42.81 | 54.00 | -11.19 | Average | Vertical |

*Channel 43 / 6165 MHz*

| Freq GHz | Read Level dBuV | Ant. Fac dB/m | Pre. Fac dB | Cab.Los dB | Measured Level dBuV | Limit Line dBuV/m | Over limit dB | Remark | Pol/Phase |
|---|---|---|---|---|---|---|---|---|---|
| 17.475 | 61.83 | 33.32 | 35.14 | 3.97 | 63.98 | 68.20 | -4.22 | Peak | Horizontal |
| 17.475 | 44.35 | 33.32 | 35.14 | 3.97 | 46.50 | 54.00 | -7.50 | Average | Horizontal |
| 17.475 | 58.14 | 33.32 | 35.14 | 3.97 | 60.29 | 68.20 | -7.91 | Peak | Vertical |
| 17.475 | 41.52 | 33.32 | 35.14 | 3.97 | 43.67 | 54.00 | -10.33 | Average | Vertical |

*Channel 91 / 6405 MHz*

| Freq GHz | Read Level dBuV | Ant. Fac dB/m | Pre. Fac dB | Cab.Los dB | Measured Level dBuV | Limit Line dBuV/m | Over limit dB | Remark | Pol/Phase |
|---|---|---|---|---|---|---|---|---|---|
| 17.235 | 61.64 | 33.23 | 35.04 | 3.91 | 63.74 | 68.20 | -4.46 | Peak | Horizontal |
| 17.235 | 42.47 | 33.23 | 35.04 | 3.91 | 44.57 | 54.00 | -9.43 | Average | Horizontal |
| 17.235 | 58.85 | 33.23 | 35.04 | 3.91 | 60.95 | 68.20 | -7.25 | Peak | Vertical |
| 17.235 | 42.40 | 33.23 | 35.04 | 3.91 | 44.50 | 54.00 | -9.50 | Average | Vertical |

*Channel 99 / 6445 MHz*

| Freq GHz | Read Level dBuV | Ant. Fac dB/m | Pre. Fac dB | Cab.Los dB | Measured Level dBuV | Limit Line dBuV/m | Over limit dB | Remark | Pol/Phase |
|---|---|---|---|---|---|---|---|---|---|
| 17.355 | 59.88 | 33.27 | 35.15 | 3.93 | 61.93 | 68.20 | -6.27 | Peak | Horizontal |
| 17.355 | 41.24 | 33.27 | 35.15 | 3.93 | 43.29 | 54.00 | -10.71 | Average | Horizontal |
| 17.355 | 58.13 | 33.27 | 35.15 | 3.93 | 60.18 | 68.20 | -8.02 | Peak | Vertical |
| 17.355 | 40.30 | 33.27 | 35.15 | 3.93 | 42.35 | 54.00 | -11.65 | Average | Vertical |

*Channel 107 / 6485 MHz*

| Freq GHz | Read Level dBuV | Ant. Fac dB/m | Pre. Fac dB | Cab.Los dB | Measured Level dBuV | Limit Line dBuV/m | Over limit dB | Remark | Pol/Phase |
|---|---|---|---|---|---|---|---|---|---|
| 17.475 | 62.73 | 33.32 | 35.14 | 3.97 | 64.88 | 68.20 | -3.32 | Peak | Horizontal |
| 17.475 | 45.21 | 33.32 | 35.14 | 3.97 | 47.36 | 54.00 | -6.64 | Average | Horizontal |
| 17.475 | 59.36 | 33.32 | 35.14 | 3.97 | 61.51 | 68.20 | -6.69 | Peak | Vertical |
| 17.475 | 42.94 | 33.32 | 35.14 | 3.97 | 45.09 | 54.00 | -8.91 | Average | Vertical |

*Channel 115/ 6525 MHz*

| Freq GHz | Read Level dBuV | Ant. Fac dB/m | Pre. Fac dB | Cab.Los dB | Measured Level dBuV | Limit Line dBuV/m | Over limit dB | Remark | Pol |
|---|---|---|---|---|---|---|---|---|---|
| 17.235 | 62.82 | 33.23 | 35.04 | 3.91 | 64.92 | 68.20 | -3.28 | Peak | Horizontal |
| 17.235 | 42.25 | 33.23 | 35.04 | 3.91 | 44.35 | 54.00 | -9.65 | Average | Horizontal |
| 17.235 | 58.14 | 33.23 | 35.04 | 3.91 | 60.24 | 68.20 | -7.96 | Peak | Vertical |
| 17.235 | 41.98 | 33.23 | 35.04 | 3.91 | 44.08 | 54.00 | -9.92 | Average | Vertical |

*Channel 123 / 6565 MHz*

| Freq GHz | Read Level dBuV | Ant. Fac dB/m | Pre. Fac dB | Cab.Los dB | Measured Level dBuV | Limit Line dBuV/m | Over limit dB | Remark | Pol |
|---|---|---|---|---|---|---|---|---|---|
| 17.355 | 59.95 | 33.27 | 35.15 | 3.93 | 62.00 | 68.20 | -6.20 | Peak | Horizontal |
| 17.355 | 40.45 | 33.27 | 35.15 | 3.93 | 42.50 | 54.00 | -11.50 | Average | Horizontal |
| 17.355 | 59.48 | 33.27 | 35.15 | 3.93 | 61.53 | 68.20 | -6.67 | Peak | Vertical |
| 17.355 | 39.51 | 33.27 | 35.15 | 3.93 | 41.56 | 54.00 | -12.44 | Average | Vertical |

*Channel 147 / 6685 MHz*

| Freq GHz | Read Level dBuV | Ant. Fac dB/m | Pre. Fac dB | Cab.Los dB | Measured Level dBuV | Limit Line dBuV/m | Over limit dB | Remark | Pol |
|---|---|---|---|---|---|---|---|---|---|
| 17.475 | 61.63 | 33.32 | 35.14 | 3.97 | 63.78 | 68.20 | -4.42 | Peak | Horizontal |
| 17.475 | 46.50 | 33.32 | 35.14 | 3.97 | 48.65 | 54.00 | -5.35 | Average | Horizontal |
| 17.475 | 58.83 | 33.32 | 35.14 | 3.97 | 60.98 | 68.20 | -7.22 | Peak | Vertical |
| 17.475 | 42.62 | 33.32 | 35.14 | 3.97 | 44.77 | 54.00 | -9.23 | Average | Vertical |

*Channel 179 / 6845 MHz*

| Freq GHz | Read Level dBuV | Ant. Fac dB/m | Pre. Fac dB | Cab.Los dB | Measured Level dBuV | Limit Line dBuV/m | Over limit dB | Remark | Pol |
|---|---|---|---|---|---|---|---|---|---|
| 17.235 | 61.99 | 33.23 | 35.04 | 3.91 | 64.09 | 68.20 | -4.11 | Peak | Horizontal |
| 17.235 | 42.81 | 33.23 | 35.04 | 3.91 | 44.91 | 54.00 | -9.09 | Average | Horizontal |
| 17.235 | 57.59 | 33.23 | 35.04 | 3.91 | 59.69 | 68.20 | -8.51 | Peak | Vertical |
| 17.235 | 42.00 | 33.23 | 35.04 | 3.91 | 44.10 | 54.00 | -9.90 | Average | Vertical |

*Channel 187/ 6885MHz*

| Freq GHz | Read Level dBuV | Ant. Fac dB/m | Pre. Fac dB | Cab.Los dB | Measured Level dBuV | Limit Line dBuV/m | Over limit dB | Remark | Pol |
|---|---|---|---|---|---|---|---|---|---|
| 17.355 | 59.49 | 33.27 | 35.15 | 3.93 | 61.54 | 68.20 | -6.66 | Peak | Horizontal |
| 17.355 | 40.49 | 33.27 | 35.15 | 3.93 | 42.54 | 54.00 | -11.46 | Average | Horizontal |
| 17.355 | 59.23 | 33.27 | 35.15 | 3.93 | 61.28 | 68.20 | -6.92 | Peak | Vertical |
| 17.355 | 41.33 | 33.27 | 35.15 | 3.93 | 43.38 | 54.00 | -10.62 | Average | Vertical |

*Channel 195 / 6925MHz*

| Freq GHz | Read Level dBuV | Ant. Fac dB/m | Pre. Fac dB | Cab.Los dB | Measured Level dBuV | Limit Line dBuV/m | Over limit dB | Remark | Pol |
|---|---|---|---|---|---|---|---|---|---|
| 17.475 | 61.96 | 33.32 | 35.14 | 3.97 | 64.11 | 68.20 | -4.09 | Peak | Horizontal |
| 17.475 | 46.79 | 33.32 | 35.14 | 3.97 | 48.94 | 54.00 | -5.06 | Average | Horizontal |
| 17.475 | 57.77 | 33.32 | 35.14 | 3.97 | 59.92 | 68.20 | -8.28 | Peak | Vertical |
| 17.475 | 42.10 | 33.32 | 35.14 | 3.97 | 44.25 | 54.00 | -9.75 | Average | Vertical |

*Channel 203 / 6965MHz*

| Freq GHz | Read Level dBuV | Ant. Fac dB/m | Pre. Fac dB | Cab.Los dB | Measured Level dBuV | Limit Line dBuV/m | Over limit dB | Remark | Pol |
|---|---|---|---|---|---|---|---|---|---|
| 17.235 | 61.31 | 33.23 | 35.04 | 3.91 | 63.41 | 68.20 | -4.79 | Peak | Horizontal |
| 17.235 | 43.02 | 33.23 | 35.04 | 3.91 | 45.12 | 54.00 | -8.88 | Average | Horizontal |
| 17.235 | 58.83 | 33.23 | 35.04 | 3.91 | 60.93 | 68.20 | -7.27 | Peak | Vertical |
| 17.235 | 41.54 | 33.23 | 35.04 | 3.91 | 43.64 | 54.00 | -10.36 | Average | Vertical |

*Channel 227 / 7085MHz*

| Freq GHz | Read Level dBuV | Ant. Fac dB/m | Pre. Fac dB | Cab.Los dB | Measured Level dBuV | Limit Line dBuV/m | Over limit dB | Remark | Pol |
|---|---|---|---|---|---|---|---|---|---|
| 17.355 | 61.34 | 33.27 | 35.15 | 3.93 | 63.39 | 68.20 | -4.81 | Peak | Horizontal |
| 17.355 | 40.36 | 33.27 | 35.15 | 3.93 | 42.41 | 54.00 | -11.59 | Average | Horizontal |
| 17.355 | 58.00 | 33.27 | 35.15 | 3.93 | 60.05 | 68.20 | -8.15 | Peak | Vertical |
| 17.355 | 41.86 | 33.27 | 35.15 | 3.93 | 43.91 | 54.00 | -10.09 | Average | Vertical |

*IEEE 802.11ax HEW80 MIMO*

*Channel 7 / 5985MHz*

| Freq GHz | Read Level dBuV | Ant. Fac dB/m | Pre. Fac dB | Cab.Los dB | Measured Level dBuV | Limit Line dBuV/m | Over limit dB | Remark | Pol |
|---|---|---|---|---|---|---|---|---|---|
| 17.265 | 60.94 | 33.23 | 35.04 | 3.91 | 63.04 | 68.20 | -5.16 | Peak | Horizontal |
| 17.265 | 42.51 | 33.23 | 35.04 | 3.91 | 44.61 | 54.00 | -9.39 | Average | Horizontal |
| 17.265 | 56.08 | 33.23 | 35.04 | 3.91 | 58.18 | 68.20 | -10.02 | Peak | Vertical |
| 17.265 | 42.92 | 33.23 | 35.04 | 3.91 | 45.02 | 54.00 | -8.98 | Average | Vertical |

*Channel 39 / 6145MHz*

| Freq GHz | Read Level dBuV | Ant. Fac dB/m | Pre. Fac dB | Cab.Los dB | Measured Level dBuV | Limit Line dBuV/m | Over limit dB | Remark | Pol |
|---|---|---|---|---|---|---|---|---|---|
| 17.385 | 57.73 | 33.23 | 35.04 | 3.91 | 59.83 | 68.20 | -8.37 | Peak | Horizontal |
| 17.385 | 42.71 | 33.23 | 35.04 | 3.91 | 44.81 | 54.00 | -9.19 | Average | Horizontal |
| 17.385 | 56.30 | 33.23 | 35.04 | 3.91 | 58.40 | 68.20 | -9.80 | Peak | Vertical |
| 17.385 | 41.29 | 33.23 | 35.04 | 3.91 | 43.39 | 54.00 | -10.61 | Average | Vertical |

*Channel 87 / 6385MHz*

| Freq GHz | Read Level dBuV | Ant. Fac dB/m | Pre. Fac dB | Cab.Los dB | Measured Level dBuV | Limit Line dBuV/m | Over limit dB | Remark | Pol |
|---|---|---|---|---|---|---|---|---|---|
| 17.325 | 58.03 | 33.27 | 35.15 | 3.93 | 60.08 | 68.20 | -8.12 | Peak | Horizontal |
| 17.325 | 41.29 | 33.27 | 35.15 | 3.93 | 43.34 | 54.00 | -10.66 | Average | Horizontal |
| 17.325 | 58.13 | 33.27 | 35.15 | 3.93 | 60.18 | 68.20 | -8.02 | Peak | Vertical |
| 17.325 | 44.43 | 33.27 | 35.15 | 3.93 | 46.48 | 54.00 | -7.52 | Average | Vertical |

*Channel 103 / 6465MHz*

| Freq GHz | Read Level dBuV | Ant. Fac dB/m | Pre. Fac dB | Cab.Los dB | Measured Level dBuV | Limit Line dBuV/m | Over limit dB | Remark | Pol |
|---|---|---|---|---|---|---|---|---|---|
| 17.265 | 58.67 | 33.23 | 35.04 | 3.91 | 60.77 | 68.20 | -7.43 | Peak | Horizontal |
| 17.265 | 41.88 | 33.23 | 35.04 | 3.91 | 43.98 | 54.00 | -10.02 | Average | Horizontal |
| 17.265 | 58.07 | 33.23 | 35.04 | 3.91 | 60.17 | 68.20 | -8.03 | Peak | Vertical |
| 17.265 | 39.86 | 33.23 | 35.04 | 3.91 | 41.96 | 54.00 | -12.04 | Average | Vertical |

*Channel 119 / 6545MHz*

| Freq GHz | Read Level dBuV | Ant. Fac dB/m | Pre. Fac dB | Cab.Los dB | Measured Level dBuV | Limit Line dBuV/m | Over limit dB | Remark | Pol |
|---|---|---|---|---|---|---|---|---|---|
| 17.385 | 58.64 | 33.23 | 35.04 | 3.91 | 60.74 | 68.20 | -7.46 | Peak | Horizontal |
| 17.385 | 42.25 | 33.23 | 35.04 | 3.91 | 44.35 | 54.00 | -9.65 | Average | Horizontal |
| 17.385 | 56.16 | 33.23 | 35.04 | 3.91 | 58.26 | 68.20 | -9.94 | Peak | Vertical |
| 17.385 | 37.60 | 33.23 | 35.04 | 3.91 | 39.70 | 54.00 | -14.30 | Average | Vertical |

*Channel 135 / 6625MHz*

| Freq GHz | Read Level dBuV | Ant. Fac dB/m | Pre. Fac dB | Cab.Los dB | Measured Level dBuV | Limit Line dBuV/m | Over limit dB | Remark | Pol |
|---|---|---|---|---|---|---|---|---|---|
| 17.325 | 60.00 | 33.27 | 35.15 | 3.93 | 62.05 | 68.20 | -6.15 | Peak | Horizontal |
| 17.325 | 41.66 | 33.27 | 35.15 | 3.93 | 43.71 | 54.00 | -10.29 | Average | Horizontal |
| 17.325 | 57.95 | 33.27 | 35.15 | 3.93 | 60.00 | 68.20 | -8.20 | Peak | Vertical |
| 17.325 | 44.55 | 33.27 | 35.15 | 3.93 | 46.60 | 54.00 | -7.40 | Average | Vertical |

*Channel 151 / 6705MHz*

| Freq GHz | Read Level dBuV | Ant. Fac dB/m | Pre. Fac dB | Cab.Los dB | Measured Level dBuV | Limit Line dBuV/m | Over limit dB | Remark | Pol |
|---|---|---|---|---|---|---|---|---|---|
| 17.265 | 59.96 | 33.23 | 35.04 | 3.91 | 62.06 | 68.20 | -6.14 | Peak | Horizontal |
| 17.265 | 41.40 | 33.23 | 35.04 | 3.91 | 43.50 | 54.00 | -10.50 | Average | Horizontal |
| 17.265 | 56.23 | 33.23 | 35.04 | 3.91 | 58.33 | 68.20 | -9.87 | Peak | Vertical |
| 17.265 | 39.83 | 33.23 | 35.04 | 3.91 | 41.93 | 54.00 | -12.07 | Average | Vertical |

*Channel 167 / 6785MHz*

| Freq GHz | Read Level dBuV | Ant. Fac dB/m | Pre. Fac dB | Cab.Los dB | Measured Level dBuV | Limit Line dBuV/m | Over limit dB | Remark | Pol |
|---|---|---|---|---|---|---|---|---|---|
| 17.385 | 57.52 | 33.23 | 35.04 | 3.91 | 59.62 | 68.20 | -8.58 | Peak | Horizontal |
| 17.385 | 41.43 | 33.23 | 35.04 | 3.91 | 43.53 | 54.00 | -10.47 | Average | Horizontal |
| 17.385 | 56.70 | 33.23 | 35.04 | 3.91 | 58.80 | 68.20 | -9.40 | Peak | Vertical |
| 17.385 | 37.37 | 33.23 | 35.04 | 3.91 | 39.47 | 54.00 | -14.53 | Average | Vertical |

*Channel 183 / 6865MHz*

| Freq GHz | Read Level dBuV | Ant. Fac dB/m | Pre. Fac dB | Cab.Los dB | Measured Level dBuV | Limit Line dBuV/m | Over limit dB | Remark | Pol |
|---|---|---|---|---|---|---|---|---|---|
| 17.325 | 59.45 | 33.27 | 35.15 | 3.93 | 61.50 | 68.20 | -6.70 | Peak | Horizontal |
| 17.325 | 42.24 | 33.27 | 35.15 | 3.93 | 44.29 | 54.00 | -9.71 | Average | Horizontal |
| 17.325 | 59.81 | 33.27 | 35.15 | 3.93 | 61.86 | 68.20 | -6.34 | Peak | Vertical |
| 17.325 | 44.52 | 33.27 | 35.15 | 3.93 | 46.57 | 54.00 | -7.43 | Average | Vertical |

*Channel 199 / 6945MHz*

| Freq GHz | Read Level dBuV | Ant. Fac dB/m | Pre. Fac dB | Cab.Los dB | Measured Level dBuV | Limit Line dBuV/m | Over limit dB | Remark | Pol |
|---|---|---|---|---|---|---|---|---|---|
| 17.265 | 58.85 | 33.23 | 35.04 | 3.91 | 60.95 | 68.20 | -7.25 | Peak | Horizontal |
| 17.265 | 42.99 | 33.23 | 35.04 | 3.91 | 45.09 | 54.00 | -8.91 | Average | Horizontal |
| 17.265 | 57.91 | 33.23 | 35.04 | 3.91 | 60.01 | 68.20 | -8.19 | Peak | Vertical |
| 17.265 | 39.67 | 33.23 | 35.04 | 3.91 | 41.77 | 54.00 | -12.23 | Average | Vertical |

*Channel 215 / 7025MHz*

| Freq GHz | Read Level dBuV | Ant. Fac dB/m | Pre. Fac dB | Cab.Los dB | Measured Level dBuV | Limit Line dBuV/m | Over limit dB | Remark | Pol |
|---|---|---|---|---|---|---|---|---|---|
| 17.385 | 57.65 | 33.23 | 35.04 | 3.91 | 59.75 | 68.20 | -8.45 | Peak | Horizontal |
| 17.385 | 41.83 | 33.23 | 35.04 | 3.91 | 43.93 | 54.00 | -10.07 | Average | Horizontal |
| 17.385 | 57.54 | 33.23 | 35.04 | 3.91 | 59.64 | 68.20 | -8.56 | Peak | Vertical |
| 17.385 | 36.66 | 33.23 | 35.04 | 3.91 | 38.76 | 54.00 | -15.24 | Average | Vertical |

*Notes:*

*1). Measuring frequencies from 9 KHz ~ 40 GHz, No emission found between lowest internal used/generated frequency to 30MHz.*
*2). Radiated emissions measured in frequency range from 9 KHz ~ 40 GHz were made with an instrument using Peak detector mode.*
*3). 18~40GHz at least have 20dB margin. No recording in the test report.*
*4). Worst case data at 6Mbps at IEEE 802.11a; MCS0 at IEEE 802.11n HT20, IEEE 802.11n HT40, IEEE 802.11ac VHT20,IEEE 802.11ax HEW20, IEEE 802.11ac VHT40, IEEE 802.11ax HEW40, IEEE 802.11ac VHT80,IEEE 802.11ax HEW80;*
*5). Data of measurement within this frequency range shown "---" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
*6). Measured Level = Reading Level + Factor, Over = Measured Level – Limit, Factor = Antenna Factor + Cable Loss - Preamp Factor.*

## 5.9. Power Line Conducted Emissions

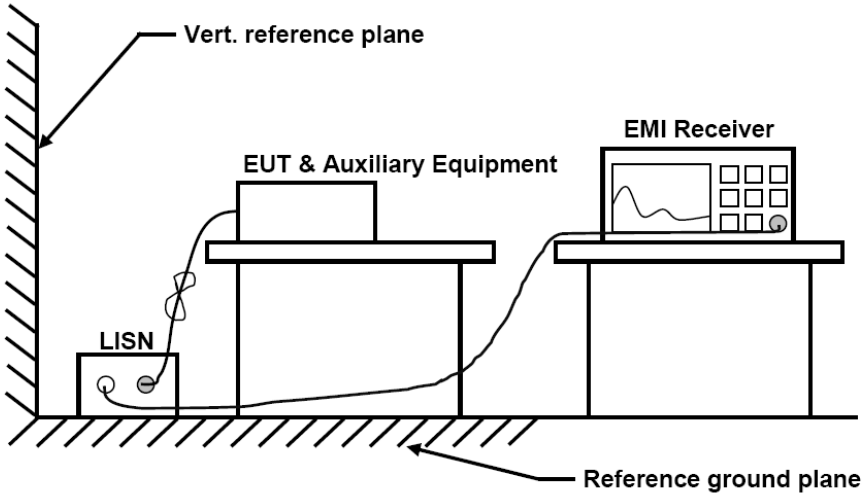
### 5.9.1 Standard Applicable

According to §15.207 (a): For an intentional radiator which is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed 250 microvolts (The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz). The limits at specific frequency range are listed as follows:

| Frequency Range (MHz) | Limits (dBμV) | |
|---|---|---|
| | Quasi-peak | Average |
| 0.15 to 0.50 | 66 to 56* | 56 to 46* |
| 0.50 to 5 | 56 | 46 |
| 5 to 30 | 60 | 50 |

* Decreasing linearly with the logarithm of the frequency

### 5.9.2 Block Diagram of Test Setup




### 5.9.3 Disturbance Calculation

The AC mains conducted disturbance is calculated by adding the 10dB Pulse Limiter and Cable Factor and Duty Cycle Correction Factor (if any) from the measured reading. The basic equation with a sample calculation is as follows:

**CD (dBuV) = RA (dBuV) + PL (dB) + CL (dB)**

| | |
|---|---|
| Where CD = Conducted Disturbance | CL = Cable Attenuation Factor (Cable Loss) |
| RA = Reading Amplitude | PL = 10 dB Pulse Limiter Factor |

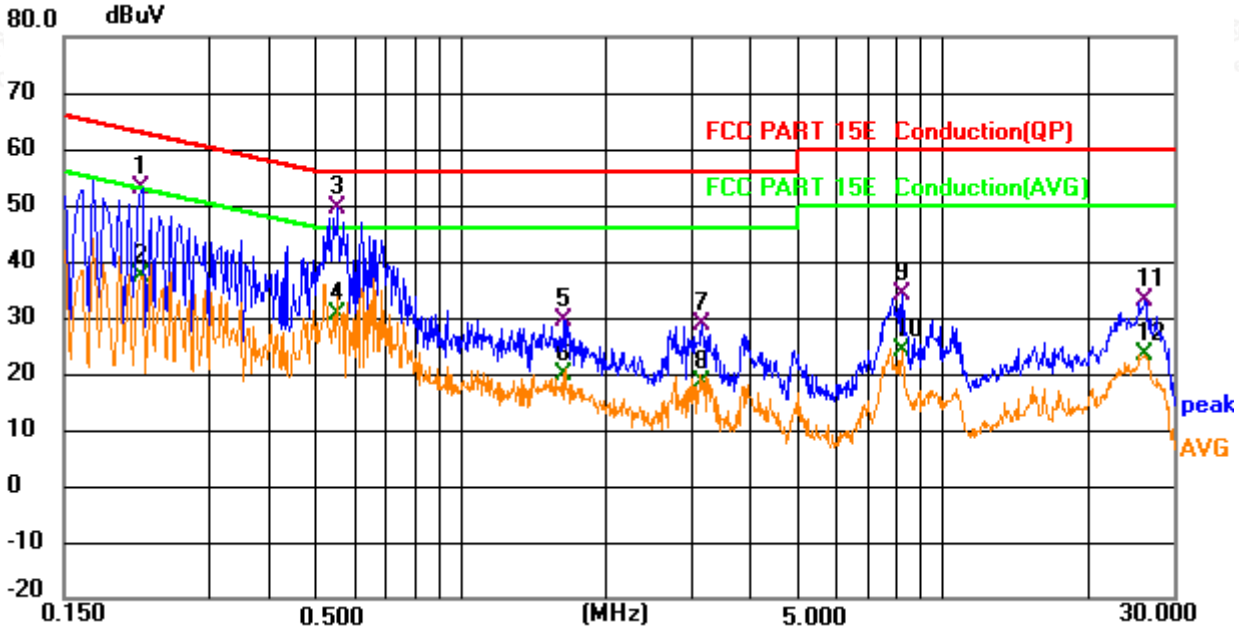
### 5.9.4 Test Results

| Temperature | 22.5℃ | Humidity | 53.7% |
|---|---|---|---|
| Test Engineer | Paddi Chen | Configurations | IEEE 802.11a/n/ac/ax |

PASS.

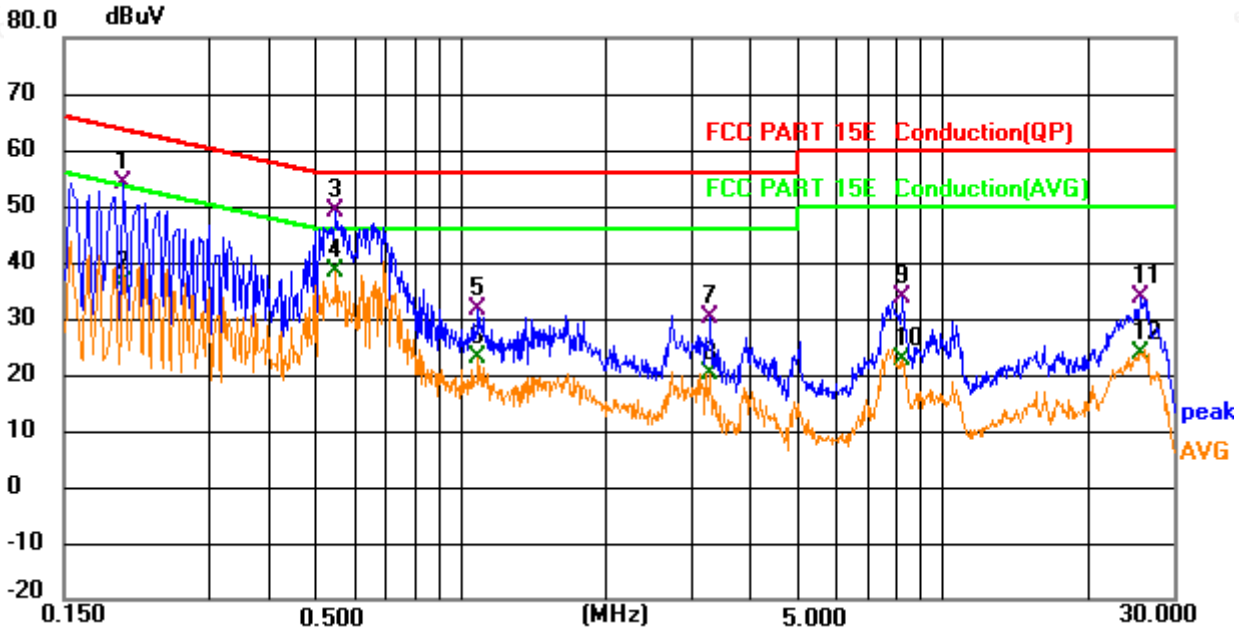
The test data please refer to following page.

*Line*




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV | dBuV | dB | Detector | Comment |
| 1 | | 0.217 | 33.21 | 19.67 | 52.88 | 62.93 | -10.05 | QP | |
| 2 | | 0.217 | 17.70 | 19.67 | 37.37 | 52.93 | -15.56 | AVG | |
| 3 | * | 0.555 | 29.71 | 19.67 | 49.38 | 56.00 | -6.62 | QP | |
| 4 | | 0.555 | 10.86 | 19.67 | 30.53 | 46.00 | -15.47 | AVG | |
| 5 | | 1.639 | 10.46 | 19.01 | 29.47 | 56.00 | -26.53 | QP | |
| 6 | | 1.639 | 0.81 | 19.01 | 19.82 | 46.00 | -26.18 | AVG | |
| 7 | | 3.170 | 9.58 | 19.23 | 28.81 | 56.00 | -27.19 | QP | |
| 8 | | 3.170 | -0.77 | 19.23 | 18.46 | 46.00 | -27.54 | AVG | |
| 9 | | 8.232 | 14.42 | 19.70 | 34.12 | 60.00 | -25.88 | QP | |
| 10 | | 8.232 | 4.33 | 19.70 | 24.03 | 50.00 | -25.97 | AVG | |
| 11 | | 26.178 | 14.35 | 18.81 | 33.16 | 60.00 | -26.84 | QP | |
| 12 | | 26.178 | 4.59 | 18.81 | 23.40 | 50.00 | -26.60 | AVG | |

*Neutral*




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV | dBuV | dB | Detector | Comment |
| 1 | | 0.200 | 34.44 | 19.78 | 54.22 | 63.61 | -9.39 | QP | |
| 2 | | 0.200 | 16.39 | 19.78 | 36.17 | 53.61 | -17.44 | AVG | |
| 3 | * | 0.550 | 29.76 | 19.42 | 49.18 | 56.00 | -6.82 | QP | |
| 4 | | 0.550 | 18.92 | 19.42 | 38.34 | 46.00 | -7.66 | AVG | |
| 5 | | 1.086 | 12.82 | 18.82 | 31.64 | 56.00 | -24.36 | QP | |
| 6 | | 1.086 | 4.32 | 18.82 | 23.14 | 46.00 | -22.86 | AVG | |
| 7 | | 3.304 | 11.05 | 18.99 | 30.04 | 56.00 | -25.96 | QP | |
| 8 | | 3.304 | 1.02 | 18.99 | 20.01 | 46.00 | -25.99 | AVG | |
| 9 | | 8.273 | 13.91 | 19.89 | 33.80 | 60.00 | -26.20 | QP | |
| 10 | | 8.273 | 2.72 | 19.89 | 22.61 | 50.00 | -27.39 | AVG | |
| 11 | | 25.805 | 14.46 | 19.24 | 33.70 | 60.00 | -26.30 | QP | |
| 12 | | 25.805 | 4.62 | 19.24 | 23.86 | 50.00 | -26.14 | AVG | |

****Note: Pre-scan all modes and recorded the worst case results in this report IEEE 802.11ax20 MIMO mode (Low Channel).*

*Measurement = Reading + Correct Factor, Margin = Measurement – Limit,*

*Correct Factor=Lisn Factor+Cable Factor+Insertion loss of Pulse Limiter.*

## 5.10. Antenna Requirements

### 5.10.1 Standard Applicable

For intentional device, according to FCC 47 CFR Section 15.203:

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited

And according to FCC 47 CFR Section 15.407 (a), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

### 5.10.2 Antenna Connected Construction

#### 5.10.2.1. Standard Applicable

According to § 15.203 & RSS-Gen, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

#### 5.10.2.2. Antenna Connector Construction

The gains of antenna used for transmitting is 2.2dBi(Max.) for Antenna 1 and 2.0dBi(Max.) for Antenna 2, and the antenna is an Internal Antenna connect to PCB board and no consideration of replacement. Please see EUT photo for details, meet FCC Part 15.203 antenna requirement.

## 5.11. Contention Based Protocol

### 5.11.1 Standard Applicable

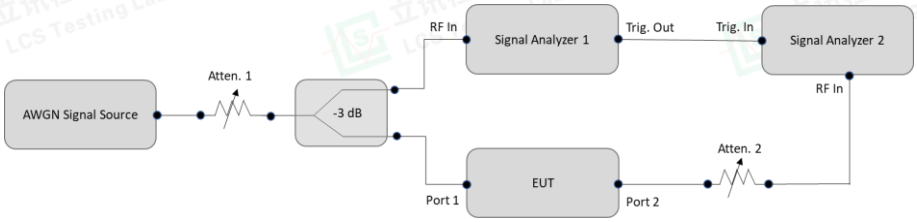
Indoor access points, subordinate devices and client devices operating in the 5.925-7.125 GHz band (herein referred to as unlicensed devices) are required to use technologies that include a contention-based protocol to avoid co-channel interference with incumbent devices sharing the band. To ensure incumbent co-channel operations are detected in a technology-agnostic manner, unlicensed devices are required to detect co-channel radio frequency energy (energy detect) and avoid simultaneous transmission.

Unlicensed low-power indoor devices must detect co-channel radio frequency power that is at least -62 dBm or lower. Upon detection of energy in the band, unlicensed low power indoor devices must vacate the channel (in which incumbent signal is transmitted) and stay off the incumbent channel as long as

detected radio frequency power is equal to or greater than the threshold (-62 dBm)1. The -62 dBm (or lower) threshold is referenced to a 0 dBi antenna gain.

To ensure incumbent operations are reliably detected in the band, low power indoor devices must detect RF energy throughout their intended operating channel. For example, an 802.11 device that plans to transmit a 40 MHz- wide signal (on a primary 20 MHz channel and a secondary 20 MHz channel) must detect energy throughout the entire 40 MHz channel. Additionally, low-power indoor devices must detect co-channel energy with 90% or greater certainty.

### 5.11.2 Test Setup




### 5.11.2.2. Test Procedure

Table 1. Criteria to determine number of times detection threshold test may be performed

| If | Number of Tests | Placement of Incumbent Transmission |
|---|---|---|
| $BW_{EUT} \leq BW_{Inc}$ | Once | Tune incumbent and EUT transmissions ($f_{c1} = f_{c2}$) |
| $BW_{Inc} < BW_{EUT} \leq 2BW_{Inc}$ | Once | Incumbent transmission is contained within $BW_{EUT}$ |
| $2BW_{Inc} < BW_{EUT} \leq 4BW_{Inc}$ | Twice. Incumbent transmission is contained within $BW_{EUT}$ | Incumbent transmission is located as closely as possible to the lower edge and upper edge, respectively, of the EUT channel |
| $BW_{EUT} > 4BW_{Inc}$ | Three times | Incumbent transmission is located as closely as possible to the lower edge of the EUT channel, in the middle of EUT channel, and as closely as possible to the upper edge of the EUT channel |

1. Configure the EUT to transmit with a constant duty cycle.

2. Set the operating parameters of the EUT including power level, operating frequency, modulation and bandwidth.

3. Set the signal analyzer center frequency to the nominal EEUT channel center frequency. The span range of the signal analyzer shall be between two times and five times the OBW of the EUT.

Connect the output port of the EUT to the signal analyzer 2, as shown in Figure 2. Ensure that the attenuator 2 provides enough attenuation to not overload the signal analyzer 2 receiver.

4. Monitoring the signal analyzer 2, verify the EUT is operating and transmitting with the parameters set at step two.

5. Using an AWGN signal source, generate (but do not transmit, i.e., RF OFF) a 10 MHz-wide AWGN signal. Use Table 1 to determine the center frequency of the 10 MHz AWGN signal relative to the EUT's channel bandwidth and center frequency.

6. Set the AWGN signal power to an extremely low level (more than 20 dB below the -62 dBm threshold). Connect the AWGN signal source, via a 3-dB splitter, to the signal analyzer 1 and the EUT as shown in Figure 2.

7. Transmit the AWGN signal (RF ON) and verify its characteristics on the signal analyzer 1.

8. Monitor the signal analyzer 2 to verify if the AWGN signal has been detected and the EUT has ceased transmission. If the EUT continues to transmit, then incrementally increase the AWGN signal power level until the EUT stops transmitting.

9. (Including all losses in the RF paths) Determine and record the AWGN signal power level (at the EUT's antenna port) at which the EUT ceased transmission. Repeat the procedure at least 10 times to verify the EUT can detect an AWGN signal with 90% (or better) level of certainty.

10. Refer to Table 1 to determine number of times the detection threshold testing needs to be repeated. If testing is required more than once, then go back to step 5, choose a different center frequency for the AWGN signal and repeat the process.

5.11.2.3. Test Result

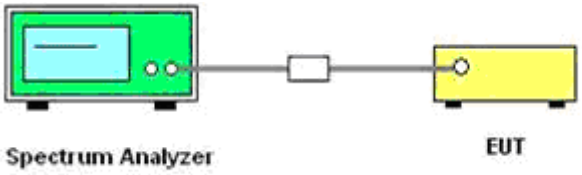
*Please refer to Appendix H.8*

## 5.12. Conducted Spurious Emissions

5.12.1 Limit

Conducted Spurious Emissions : For transmitters operating within the 5.925-7.125 GHz band: Any emissions outside of the 5.925-7.125 GHz band must not exceed an e.i.r.p. of −27 dBm/MHz.

5.12.2 Test Configuration




5.12.3 Test Procedure

1. The power was monitored at the coupler port with a Spectrum Analyzer. The power level was set to the maximum level.
2. Set the RBW = 1MHz.
3. Set the VBW ≥ 3MHz
4. Number of points in sweep ≥ 2 × span / RBW. (This ensures that bin-to-bin spacing is ≤ RBW/2, so that narrowband signals are not lost between frequency bins.)
5. Manually set sweep time ≥ 10 × (number of points in sweep) × (total on/off period of the transmitted signal).
6. Set detector = power averaging (rms).
7. Sweep time = auto couple.
8. Trace mode = max hold.
9. Allow trace to fully stabilize.

5.12.4 Test Results

Please refer to Appendix H.8

Remark:
1. Measured uwanted emission at difference data rate for each mode and recorded worst case for each mode;
2. Test results including cable loss;
3. All data rates for each modulation type have been tested and found the data rate @ MCS0 is the worst case of IEEE 802.11ax 20/40/80, Only the data of worst case is recorded in the report.

# 6. LIST OF MEASURING EQUIPMENTS

| Item | Equipment | Manufacturer | Model No. | Serial No. | Cal Date | Due Date |
|---|---|---|---|---|---|---|
| 1 | Power Meter | R&S | NRVS | 100444 | 2025-05-22 | 2026-05-21 |
| 2 | Power Sensor | R&S | NRV-Z81 | 100458 | 2025-05-22 | 2026-05-21 |
| 3 | Power Sensor | R&S | NRV-Z32 | 10057 | 2025-05-22 | 2026-05-21 |
| 4 | Test Software | Tonscend | JS1120-2 | / | N/A | N/A |
| 5 | RF Control Unit | Tonscend | JS0806-2 | N/A | 2024-11-08 | 2025-11-07 |
| 6 | MXA Signal Analyzer | Agilent | N9020A | MY50510140 | 2024-10-08 | 2025-10-07 |
| 7 | DC Power Supply | Agilent | E3642A | N/A | 2024-10-08 | 2025-10-07 |
| 8 | EMI Test Software | AUDIX | E3 | / | N/A | N/A |
| 9 | 3m Semi Anechoic Chamber | SIDT FRANKONIA | SAC-3M | 03CH03-HY | 2025-05-22 | 2026-05-21 |
| 10 | Positioning Controller | Max-Full | MF7802BS | MF780208586 | N/A | N/A |
| 11 | Active Loop Antenna | SCHWARZBECK | FMZB 1519B | 00005 | 2024-07-13 | 2027-07-12 |
| 12 | By-log Antenna | SCHWARZBECK | VULB9163 | 9163-470 | 2024-08-03 | 2027-08-02 |
| 13 | Horn Antenna | SCHWARZBECK | BBHA 9120D | 9120D-1925 | 2024-07-13 | 2027-07-12 |
| 14 | Broadband Horn Antenna | SCHWARZBECK | BBHA 9170 | 791 | 2024-07-13 | 2027-07-12 |
| 15 | Broadband Preamplifier | SCHWARZBECK | BBV9719 | 9719-025 | 2024-07-30 | 2025-07-29 |
| 16 | EMI Test Receiver | R&S | ESR 7 | 101181 | 2025-05-22 | 2026-05-21 |
| 17 | RS SPECTRUM ANALYZER | R&S | FSP40 | 100503 | 2025-05-22 | 2026-05-21 |
| 18 | Low-frequency amplifier | SchwarzZBECK | BBV9745 | 00253 | 2024-10-08 | 2025-10-07 |
| 19 | High-frequency amplifier | JS Denki Pte | PA0118-43 | JSPA21009 | 2024-10-08 | 2025-10-07 |
| 20 | 6dB Attenuator | / | 100W/6dB | 1172040 | 2025-05-22 | 2026-05-21 |
| 21 | 3dB Attenuator | / | 2N-3dB | / | 2024-10-08 | 2025-10-07 |
| 22 | EMI Test Receiver | R&S | ESPI | 101940 | 2025-05-22 | 2026-05-21 |
| 23 | Artificial Mains | R&S | ENV216 | 101288 | 2025-05-22 | 2026-05-21 |
| 24 | 10dB Attenuator | SCHWARZBECK | MTS-IMP-136 | 261115-001-0032 | 2025-05-22 | 2026-05-21 |
| 25 | EMI Test Software | Farad | EZ | / | N/A | N/A |
| 26 | Antenna Mast | Max-Full | MFA-515BSN | 1308572 | N/A | N/A |
| 27 | Pulse Limiter | R&S | ESH3-Z2 | 102750-NB | 2025-05-22 | 2026-05-21 |
| 28 | Wi-Fi 7GHz Band Extender | Tonscend | TS-WF7U2 | N/A | N/A | N/A |
| 29 | ESG Vector Signal Generator | Agilent | E4438C | MY49072627(3G) | 2024-06-06 | 2025-06-05 |
| | | | | | 2025-05-22 | 2026-05-21 |
| 30 | PSG Analog Signal Generator | Agilent | E8257D | MY4520521 | 2024-06-06 | 2025-06-05 |
| | | | | | 2025-05-22 | 2026-05-21 |

# 7. TEST SETUP PHOTOGRAPHS OF EUT

Please refer to separated files for Test Setup Photos of the EUT.

# 8. EXTERIOR PHOTOGRAPHS OF THE EUT

Please refer to separated files for External Photos of the EUT.

# 9. INTERIOR PHOTOGRAPHS OF THE EUT

Please refer to separated files for Internal Photos of the EUT.

----------THE END OF REPORT----------