



# Partial FCC RF Test Report

APPLICANT : Xiaomi Communications Co., Ltd.  
EQUIPMENT : Mobile Phone  
BRAND NAME : Xiaomi  
MODEL NAME : A301XM  
FCC ID : 2AFZZND5R  
Standard : FCC Part 15 Subpart E §15.407  
CLASSIFICATION : 15E 6 GHz Low Power Indoor Client (6XD)  
TEST DATE(S) : Jun. 12, 2023

We, Sporton International Inc. (Shenzhen), would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of Sporton International Inc. (Shenzhen), the test report shall not be reproduced except in full.

Jason Jia

Approved by: Jason Jia



**Sporton International Inc. (ShenZhen)**

**1/F, 2/F, Bldg 5, Shiling Industrial Zone, Xinwei Village, Xili, Nanshan, Shenzhen, 518055**

**People's Republic of China**



## Table of Contents

|                                      |                                                         |           |
|--------------------------------------|---------------------------------------------------------|-----------|
| <b>1</b>                             | <b>General Description .....</b>                        | <b>5</b>  |
| 1.1                                  | Applicant .....                                         | 5         |
| 1.2                                  | Manufacturer .....                                      | 5         |
| 1.3                                  | Product Feature of Equipment Under Test.....            | 5         |
| 1.4                                  | Product Specification of Equipment Under Test.....      | 5         |
| 1.5                                  | Modification of EUT .....                               | 6         |
| 1.6                                  | Testing Location .....                                  | 6         |
| 1.7                                  | Test Software.....                                      | 6         |
| 1.8                                  | Applicable Standards.....                               | 7         |
| <b>2</b>                             | <b>Test Configuration of Equipment Under Test .....</b> | <b>8</b>  |
| 2.1                                  | Carrier Frequency and Channel .....                     | 8         |
| 2.2                                  | EUT Operation Test Setup .....                          | 9         |
| <b>3</b>                             | <b>Test Result .....</b>                                | <b>10</b> |
| 3.1                                  | Contention Based Protocol .....                         | 10        |
| <b>4</b>                             | <b>List of Measuring Equipment.....</b>                 | <b>18</b> |
| <b>Appendix A. Setup Photographs</b> |                                                         |           |



## History of this test report

| Report No.   | Version | Description             | Issued Date   |
|--------------|---------|-------------------------|---------------|
| FR351205-01B | 01      | Initial issue of report | Jul. 04, 2023 |
|              |         |                         |               |
|              |         |                         |               |
|              |         |                         |               |
|              |         |                         |               |
|              |         |                         |               |
|              |         |                         |               |
|              |         |                         |               |
|              |         |                         |               |
|              |         |                         |               |
|              |         |                         |               |
|              |         |                         |               |
|              |         |                         |               |
|              |         |                         |               |
|              |         |                         |               |



## Summary of Test Result

| Report Clause | Ref Std. Clause | Test Items                | Result (PASS/FAIL) | Remark |
|---------------|-----------------|---------------------------|--------------------|--------|
| 3.1           | 15.407(d)(6)    | Contention Based Protocol | Pass               |        |

### Conformity Assessment Condition:

1. The test results (PASS/FAIL) with all measurement uncertainty excluded are presented against the regulation limits or in accordance with the requirements stipulated by the applicant/manufacture who shall bear all the risks of non-compliance that may potentially occur if measurement uncertainty is taken into account.
2. The measurement uncertainty please refer to each test result in the section "Measurement Uncertainty"

### Disclaimer:

The product specifications of the EUT presented in the test report that may affect the test assessments are declared by the manufacturer who shall take full responsibility for the authenticity.



# 1 General Description

## 1.1 Applicant

Xiaomi Communications Co., Ltd.

#019, 9th Floor, Building 6, 33 Xi'erqi Middle Road, Haidian District, Beijing, China, 100085

## 1.2 Manufacturer

Xiaomi Communications Co., Ltd.

#019, 9th Floor, Building 6, 33 Xi'erqi Middle Road, Haidian District, Beijing, China, 100085

## 1.3 Product Feature of Equipment Under Test

| Product Feature |                                      |
|-----------------|--------------------------------------|
| Equipment       | Mobile Phone                         |
| Brand Name      | Xiaomi                               |
| Model Name      | A301XM                               |
| IMEI Code       | CBP: 861585060020847/861585060020854 |
| HW Version      | P2.0                                 |
| SW Version      | MIUI 14                              |
| EUT Stage       | Identical Prototype                  |

**Remark:** The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

## 1.4 Product Specification of Equipment Under Test

| Standards-related Product Specification |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Tx/Rx Frequency Range                   | U-NII-5: 5925 MHz ~ 6425 MHz<br>U-NII-6: 6425 MHz ~ 6525 MHz<br>U-NII-7: 6525 MHz ~ 6875 MHz<br>U-NII-8: 6875 MHz ~ 7125 MHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Antenna Type / Gain                     | <b>&lt;5925 MHz ~ 6425 MHz &gt;</b><br><Ant. 5> : Fixed Internal Antenna with gain -0.43 dBi<br><Ant. 18> : Fixed Internal Antenna with gain 0 dBi<br><b>&lt;6425 MHz ~ 6525 MHz &gt;</b><br><Ant. 5> : Fixed Internal Antenna with gain -2.05 dBi<br><Ant. 18> : Fixed Internal Antenna with gain -1.54 dBi<br><b>&lt;6525 MHz ~ 6875 MHz &gt;</b><br><Ant. 5> : Fixed Internal Antenna with gain -3.01 dBi<br><Ant. 18> : Fixed Internal Antenna with gain -1.33 dBi<br><b>&lt;6875 MHz ~ 7125 MHz &gt;</b><br><Ant. 5> : Fixed Internal Antenna with gain -2.04 dBi<br><Ant. 18> : Fixed Internal Antenna with gain -1.67 dBi |
| Type of Modulation                      | 802.11a: OFDM (BPSK / QPSK / 16QAM / 64QAM)<br>802.11ax: OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM / 1024QAM)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

**Remark:**



1. For WLAN SISO & MIMO mode, the whole testing has assessed only MIMO mode by referring to the higher normal conducted power.
2. WLAN MIMO only support CDD mode.
3. U-NII-5/-6/-7/-8 can't transmit simultaneously.
4. 802.11ax support full RU tone and partial RU tone, after assessing, CBP test cases were performed with full RU with its maximum power/PSD.
5. CBP test with minimum antenna gain (Antenna 5 path for each band).
6. For 20M Bandwidth, the CH233 (Center Frequency = 7115MHz) is not supported.

## 1.5 Modification of EUT

No modifications are made to the EUT during all test items.

## 1.6 Testing Location

Sporton International Inc. (ShenZhen) is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.01.

|                           |                                                                                                                                                                         |                            |                                       |
|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|---------------------------------------|
| <b>Test Firm</b>          | Sporton International Inc. (ShenZhen)                                                                                                                                   |                            |                                       |
| <b>Test Site Location</b> | 1/F, 2/F, Bldg 5, Shiling Industrial Zone, Xinwei Village, Xili, Nanshan, Shenzhen, 518055 People's Republic of China<br>TEL: +86-755-86379589<br>FAX: +86-755-86379595 |                            |                                       |
| <b>Test Site No.</b>      | <b>Sporton Site No.</b>                                                                                                                                                 | <b>FCC Designation No.</b> | <b>FCC Test Firm Registration No.</b> |
|                           | DFS01-SZ                                                                                                                                                                | CN1256                     | 421272                                |

## 1.7 Test Software

| Item | Site     | Manufacture | Name       | Version |
|------|----------|-------------|------------|---------|
| 1.   | DFS01-SZ | Sporton     | Test Tools | 1.0     |



## **1.8 Applicable Standards**

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- ♦ FCC Part 15 Subpart E
- ♦ FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.
- ♦ FCC KDB 987594 D02 U-NII 6 GHz EMC Measurement v01r01
- ♦ FCC KDB 662911 D01 Multiple Transmitter Output v02r01.
- ♦ ANSI C63.10-2013

**Remark:** All test items were verified and recorded according to the standards and without any deviation during the test.



## 2 Test Configuration of Equipment Under Test

### 2.1 Carrier Frequency and Channel

<U-NII-5, 6, 7, 8>

|         |             |      |      |      |      |      |      |      |      |
|---------|-------------|------|------|------|------|------|------|------|------|
| BW 20M  | Channel     | 1    | 5    | 9    | 13   | 17   | 21   | 25   | 29   |
|         | Freq. (MHz) | 5955 | 5975 | 5995 | 6015 | 6035 | 6055 | 6075 | 6095 |
| BW 40M  | Channel     | 3    |      | 11   |      | 19   |      | 27   |      |
|         | Freq. (MHz) | 5965 |      | 6005 |      | 6045 |      | 6085 |      |
| BW 80M  | Channel     | 7    |      |      |      | 23   |      |      |      |
|         | Freq. (MHz) | 5985 |      |      |      | 6065 |      |      |      |
| BW 160M | Channel     | 15   |      |      |      |      |      |      |      |
|         | Freq. (MHz) | 6025 |      |      |      |      |      |      |      |

|         |             |      |      |      |      |      |      |      |      |
|---------|-------------|------|------|------|------|------|------|------|------|
| BW 20M  | Channel     | 33   | 37   | 41   | 45   | 49   | 53   | 57   | 61   |
|         | Freq. (MHz) | 6115 | 6135 | 6155 | 6175 | 6195 | 6215 | 6235 | 6255 |
| BW 40M  | Channel     | 35   |      | 43   |      | 51   |      | 59   |      |
|         | Freq. (MHz) | 6125 |      | 6165 |      | 6205 |      | 6245 |      |
| BW 80M  | Channel     | 39   |      |      |      | 55   |      |      |      |
|         | Freq. (MHz) | 6145 |      |      |      | 6225 |      |      |      |
| BW 160M | Channel     | 47   |      |      |      |      |      |      |      |
|         | Freq. (MHz) | 6185 |      |      |      |      |      |      |      |

|         |             |      |      |      |      |      |      |      |      |
|---------|-------------|------|------|------|------|------|------|------|------|
| BW 20M  | Channel     | 65   | 69   | 73   | 77   | 81   | 85   | 89   | 93   |
|         | Freq. (MHz) | 6275 | 6295 | 6315 | 6335 | 6355 | 6375 | 6395 | 6415 |
| BW 40M  | Channel     | 67   |      | 75   |      | 83   |      | 91   |      |
|         | Freq. (MHz) | 6285 |      | 6325 |      | 6365 |      | 6405 |      |
| BW 80M  | Channel     | 71   |      |      |      | 87   |      |      |      |
|         | Freq. (MHz) | 6305 |      |      |      | 6385 |      |      |      |
| BW 160M | Channel     | 79   |      |      |      |      |      |      |      |
|         | Freq. (MHz) | 6345 |      |      |      |      |      |      |      |

|         |             |      |      |      |      |      |      |      |      |
|---------|-------------|------|------|------|------|------|------|------|------|
| BW 20M  | Channel     | 97   | 101  | 105  | 109  | 113  | 117  | 121  | 125  |
|         | Freq. (MHz) | 6435 | 6455 | 6475 | 6495 | 6515 | 6535 | 6555 | 6575 |
| BW 40M  | Channel     | 99   |      | 107  |      | 115  |      | 123  |      |
|         | Freq. (MHz) | 6445 |      | 6485 |      | 6525 |      | 6565 |      |
| BW 80M  | Channel     | 103  |      |      |      | 119  |      |      |      |
|         | Freq. (MHz) | 6465 |      |      |      | 6545 |      |      |      |
| BW 160M | Channel     | 111  |      |      |      |      |      |      |      |
|         | Freq. (MHz) | 6505 |      |      |      |      |      |      |      |



|         |             |      |      |      |      |      |      |      |      |
|---------|-------------|------|------|------|------|------|------|------|------|
| BW 20M  | Channel     | 129  | 133  | 137  | 141  | 145  | 149  | 153  | 157  |
|         | Freq. (MHz) | 6595 | 6615 | 6635 | 6655 | 6675 | 6695 | 6715 | 6735 |
| BW 40M  | Channel     | 131  |      | 139  |      | 147  |      | 155  |      |
|         | Freq. (MHz) | 6605 |      | 6645 |      | 6685 |      | 6725 |      |
| BW 80M  | Channel     | 135  |      |      |      | 151  |      |      |      |
|         | Freq. (MHz) | 6625 |      |      |      | 6705 |      |      |      |
| BW 160M | Channel     | 143  |      |      |      |      |      |      |      |
|         | Freq. (MHz) | 6665 |      |      |      |      |      |      |      |

|         |             |      |      |      |      |      |      |      |      |
|---------|-------------|------|------|------|------|------|------|------|------|
| BW 20M  | Channel     | 161  | 165  | 169  | 173  | 177  | 181  | 185  | 189  |
|         | Freq. (MHz) | 6755 | 6775 | 6795 | 6815 | 6835 | 6855 | 6875 | 6895 |
| BW 40M  | Channel     | 163  |      | 171  |      | 179  |      | 187  |      |
|         | Freq. (MHz) | 6765 |      | 6805 |      | 6845 |      | 6885 |      |
| BW 80M  | Channel     | 167  |      |      |      | 183  |      |      |      |
|         | Freq. (MHz) | 6785 |      |      |      | 6865 |      |      |      |
| BW 160M | Channel     | 175  |      |      |      |      |      |      |      |
|         | Freq. (MHz) | 6825 |      |      |      |      |      |      |      |

|         |             |      |      |      |      |      |      |      |      |
|---------|-------------|------|------|------|------|------|------|------|------|
| BW 20M  | Channel     | 193  | 197  | 201  | 205  | 209  | 213  | 217  | 221  |
|         | Freq. (MHz) | 6915 | 6935 | 6955 | 6975 | 6995 | 7015 | 7035 | 7055 |
| BW 40M  | Channel     | 195  |      | 203  |      | 211  |      | 219  |      |
|         | Freq. (MHz) | 6925 |      | 6965 |      | 7005 |      | 7045 |      |
| BW 80M  | Channel     | 199  |      |      |      | 215  |      |      |      |
|         | Freq. (MHz) | 6945 |      |      |      | 7025 |      |      |      |
| BW 160M | Channel     | 207  |      |      |      |      |      |      |      |
|         | Freq. (MHz) | 6985 |      |      |      |      |      |      |      |

|        |             |      |  |  |  |      |  |  |  |
|--------|-------------|------|--|--|--|------|--|--|--|
| BW 20M | Channel     | 225  |  |  |  | 229  |  |  |  |
|        | Freq. (MHz) | 7075 |  |  |  | 7095 |  |  |  |
| BW 40M | Channel     | 227  |  |  |  |      |  |  |  |
|        | Freq. (MHz) | 7085 |  |  |  |      |  |  |  |

## 2.2 EUT Operation Test Setup

For WLAN RF test items, an engineering test program (QRCT TX Tool) was provided and enabled to make EUT continuously transmit.

### 3 Test Result

#### 3.1 Contention Based Protocol

##### 3.1.1 Limit of Contention Based Protocol

###### <FCC 14-30 CFR 15.407>

(d)(6) Indoor access points, subordinate devices and client devices operating in the 5.925-7.125 GHz band must employ a contention-based protocol.

FCC KDB 987594 D02 U-NII 6GHz EMC Measurement v01r01

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 and stay off the channel as long as detected radio frequency power is equal to or greater than the threshold (-62 dBm). 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.

**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 |

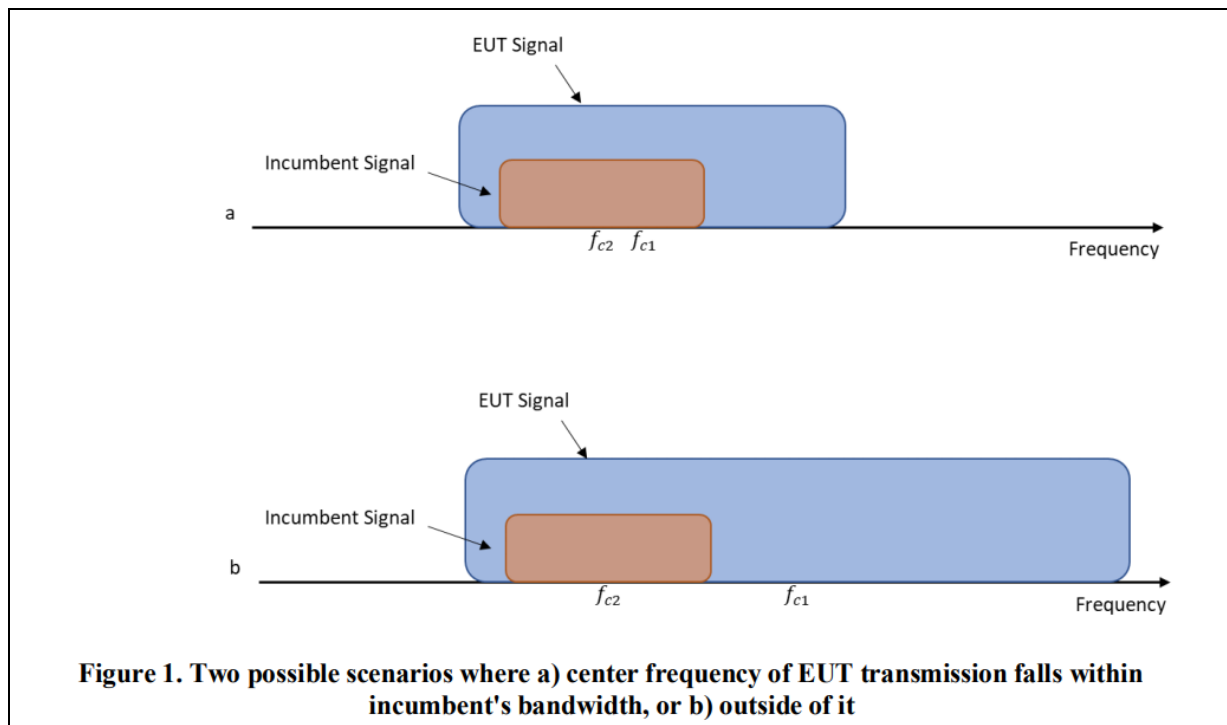
where:

$BW_{EUT}$ : Transmission bandwidth of EUT signal

$BW_{Inc}$ : Transmission bandwidth of the simulated incumbent signal (10 MHz wide AWGN signal)

$f_{c1}$ : Center frequency of EUT transmission

$f_{c2}$ : Center frequency of simulated incumbent signal



### 3.1.2 Measuring Instruments

See list of measuring equipment of this test report.

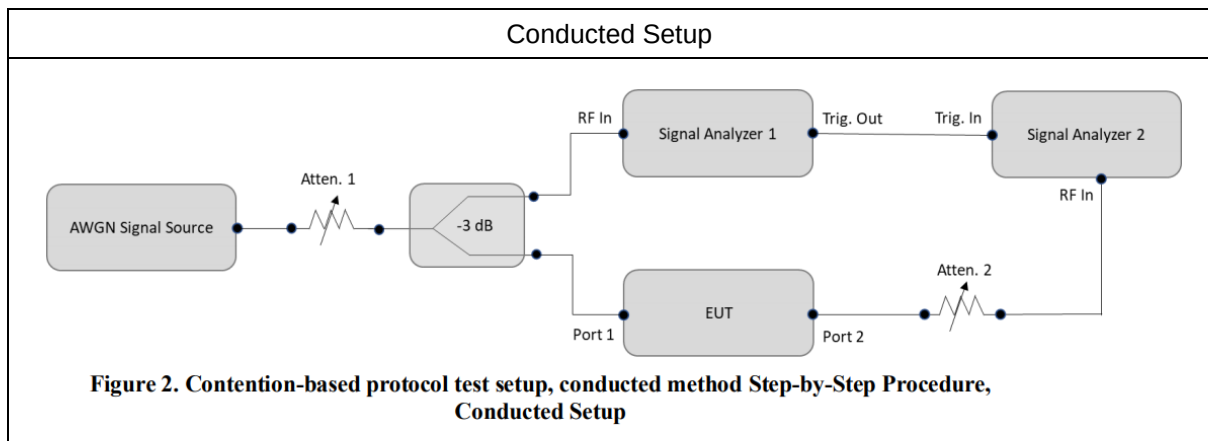
### 3.1.3 Test Procedures

Refer to KDB 987594 D02 v01r01.

1. To ensure EUT reliably detects an incumbent signal in both scenarios shown in Figure 1, the detection threshold test may be repeated more than once with the incumbent signal (having center frequency  $f_{c2}$ ) tuned to different center frequencies within the UT transmission bandwidth. The criteria specified in Table 1 determines how many times the detection threshold test must be performed
2. 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.
3. Monitor the signal analyzer 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.
4. (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.
5. 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 2, choose a different center frequency for the AWGN signal and repeat the process.
  6. EUT was driven in MIMO mode, the interferer signal was injected to both chains to monitor the performance, while the interferer level is determined according to the lowest antenna gain among both antennas.

### 3.1.4 Test Setup



### 3.1.5 Support Unit used in test configuration and system

| Instrument | Brand Name | Model No.   | Characteristics |
|------------|------------|-------------|-----------------|
| WLAN AP    | ASUS       | GT-AXE11000 | Dual Band AP    |
| Notebook   | Acer       | N15C1       | LAN             |



## 3.1.6 Test Summary of Contention Based Protocol Test

| Band        | Channel Freq. (MHz) | Channel BW (MHz) | Incumbent freq. (MHz) | Injected AWGN Level (dBm) | Detection Rate (%)        | Regulated Threshold level (dBm) | Adjusted Power (dBm) | Margin (dB) |
|-------------|---------------------|------------------|-----------------------|---------------------------|---------------------------|---------------------------------|----------------------|-------------|
| UNII Band 5 | 6135                | 20               | 6135                  | -73.52                    | 100                       | -62                             | -73.09               | 11.09       |
|             |                     |                  |                       |                           | Result: Stop Transmission |                                 |                      |             |
|             |                     |                  |                       | -74.52                    | <90                       | -62                             | -74.09               | 12.09       |
|             |                     |                  |                       |                           | Result: Minimal Operation |                                 |                      |             |
|             |                     |                  |                       | -75.52                    | =0                        | -62                             | -75.09               | 13.09       |
|             |                     |                  |                       |                           | Result: Normal Operation  |                                 |                      |             |
|             | 6185                | 160              | 6110                  | -73.28                    | 100                       | -62                             | -72.85               | 10.85       |
|             |                     |                  |                       |                           | Result: Stop Transmission |                                 |                      |             |
|             |                     |                  |                       | -74.28                    | <90                       | -62                             | -73.85               | 11.85       |
|             |                     |                  |                       |                           | Result: Minimal Operation |                                 |                      |             |
|             |                     |                  |                       | -75.28                    | =0                        | -62                             | -74.85               | 12.85       |
|             |                     |                  |                       |                           | Result: Normal Operation  |                                 |                      |             |
|             |                     |                  | 6185                  | -69.05                    | 100                       | -62                             | -68.62               | 6.62        |
|             |                     |                  |                       |                           | Result: Stop Transmission |                                 |                      |             |
|             |                     |                  |                       | -70.05                    | <90                       | -62                             | -69.62               | 7.62        |
|             |                     |                  |                       |                           | Result: Minimal Operation |                                 |                      |             |
|             |                     |                  |                       | -71.05                    | =0                        | -62                             | -70.62               | 8.62        |
|             |                     |                  |                       |                           | Result: Normal Operation  |                                 |                      |             |
|             |                     |                  | 6260                  | -72.05                    | 100                       | -62                             | -71.62               | 9.62        |
|             |                     |                  |                       |                           | Result: Stop Transmission |                                 |                      |             |
|             |                     |                  |                       | -73.05                    | <90                       | -62                             | -72.62               | 10.62       |
|             |                     |                  |                       |                           | Result: Minimal Operation |                                 |                      |             |
|             |                     |                  |                       | -74.05                    | =0                        | -62                             | -73.62               | 11.62       |
|             |                     |                  |                       |                           | Result: Normal Operation  |                                 |                      |             |

**Note 1:** Adjusted Power = Injected AWGN Level - minimum antenna gain (Antenna 5, gain = -0.43 dBi)

**Note 2:** Path Loss between antenna and RF connector is negligible. (0 dB)

**Note 3:** Margin = Regulated Threshold level - Adjusted Power



| Band           | Channel Freq. (MHz) | Channel BW (MHz) | Incumbent freq. (MHz) | Injected AWGN Level (dBm) | Detection Rate (%) | Regulated Threshold level (dBm) | Adjusted Power (dBm) | Margin (dB) |
|----------------|---------------------|------------------|-----------------------|---------------------------|--------------------|---------------------------------|----------------------|-------------|
| UNII<br>Band 6 | 6455                | 20               | 6455                  | -75.68                    | 100                | -62                             | -73.63               | 11.63       |
|                |                     |                  |                       | Result: Stop Transmission |                    |                                 |                      |             |
|                |                     |                  |                       | -76.68                    | <90                | -62                             | -74.63               | 12.63       |
|                |                     |                  |                       | Result: Minimal Operation |                    |                                 |                      |             |
|                |                     |                  |                       | -77.68                    | =0                 | -62                             | -75.63               | 13.63       |
|                |                     |                  |                       | Result: Normal Operation  |                    |                                 |                      |             |
|                | 6505                | 160              | 6430                  | -74.20                    | 100                | -62                             | -72.15               | 10.15       |
|                |                     |                  |                       | Result: Stop Transmission |                    |                                 |                      |             |
|                |                     |                  |                       | -75.20                    | <90                | -62                             | -73.15               | 11.15       |
|                |                     |                  |                       | Result: Minimal Operation |                    |                                 |                      |             |
|                |                     |                  |                       | -76.20                    | =0                 | -62                             | -74.15               | 12.15       |
|                |                     |                  |                       | Result: Normal Operation  |                    |                                 |                      |             |
|                |                     |                  | 6505                  | -69.12                    | 100                | -62                             | -67.07               | 5.07        |
|                |                     |                  |                       | Result: Stop Transmission |                    |                                 |                      |             |
|                |                     |                  |                       | -70.12                    | <90                | -62                             | -68.07               | 6.07        |
|                |                     |                  |                       | Result: Minimal Operation |                    |                                 |                      |             |
|                |                     |                  |                       | -71.12                    | =0                 | -62                             | -69.07               | 7.07        |
|                |                     |                  |                       | Result: Normal Operation  |                    |                                 |                      |             |
|                |                     |                  | 6580                  | -77.86                    | 100                | -62                             | -75.81               | 13.81       |
|                |                     |                  |                       | Result: Stop Transmission |                    |                                 |                      |             |
|                |                     |                  |                       | -78.86                    | <90                | -62                             | -76.81               | 14.81       |
|                |                     |                  |                       | Result: Minimal Operation |                    |                                 |                      |             |
|                |                     |                  |                       | -79.86                    | =0                 | -62                             | -77.81               | 15.81       |
|                |                     |                  |                       | Result: Normal Operation  |                    |                                 |                      |             |

**Note 1:** Adjusted Power = Injected AWGN Level - minimum antenna gain (Antenna 5, gain = -2.05dBi)

**Note 2:** Path Loss between antenna and RF connector is negligible. (0 dB)

**Note 3:** Margin = Regulated Threshold level - Adjusted Power



| Band           | Channel Freq. (MHz) | Channel BW (MHz) | Incumbent freq. (MHz) | Injected AWGN Level (dBm) | Detection Rate (%) | Regulated Threshold level (dBm) | Adjusted Power (dBm) | Margin (dB) |
|----------------|---------------------|------------------|-----------------------|---------------------------|--------------------|---------------------------------|----------------------|-------------|
| UNII<br>Band 7 | 6695                | 20               | 6695                  | -76.31                    | 100                | -62                             | -73.30               | 11.30       |
|                |                     |                  |                       | Result: Stop Transmission |                    |                                 |                      |             |
|                |                     |                  |                       | -77.31                    | <90                | -62                             | -74.30               | 12.30       |
|                |                     |                  |                       | Result: Minimal Operation |                    |                                 |                      |             |
|                |                     |                  |                       | -78.31                    | =0                 | -62                             | -75.30               | 13.30       |
|                |                     |                  |                       | Result: Normal Operation  |                    |                                 |                      |             |
|                | 6665                | 160              | 6590                  | -70.26                    | 100                | -62                             | -67.25               | 5.25        |
|                |                     |                  |                       | Result: Stop Transmission |                    |                                 |                      |             |
|                |                     |                  |                       | -71.26                    | <90                | -62                             | -68.25               | 6.25        |
|                |                     |                  |                       | Result: Minimal Operation |                    |                                 |                      |             |
|                |                     |                  |                       | -72.26                    | =0                 | -62                             | -69.25               | 7.25        |
|                |                     |                  |                       | Result: Normal Operation  |                    |                                 |                      |             |
|                |                     |                  | 6665                  | -68.77<br>(worst)         | 100                | -62                             | -65.76               | 3.76        |
|                |                     |                  |                       | Result: Stop Transmission |                    |                                 |                      |             |
|                |                     |                  |                       | -69.77                    | <90                | -62                             | -66.76               | 4.76        |
|                |                     |                  |                       | Result: Minimal Operation |                    |                                 |                      |             |
|                |                     |                  |                       | -70.77                    | =0                 | -62                             | -67.76               | 5.76        |
|                |                     |                  |                       | Result: Normal Operation  |                    |                                 |                      |             |
|                |                     |                  | 6740                  | -76.96                    | 100                | -62                             | -73.95               | 11.95       |
|                |                     |                  |                       | Result: Stop Transmission |                    |                                 |                      |             |
|                |                     |                  |                       | -77.96                    | <90                | -62                             | -74.95               | 12.95       |
|                |                     |                  |                       | Result: Minimal Operation |                    |                                 |                      |             |
|                |                     |                  |                       | -78.96                    | =0                 | -62                             | -75.95               | 13.95       |
|                |                     |                  |                       | Result: Normal Operation  |                    |                                 |                      |             |

**Note 1:** Adjusted Power = Injected AWGN Level - minimum antenna gain (Antenna 5, gain = -3.01dBi)

**Note 2:** Path Loss between antenna and RF connector is negligible. (0 dB)

**Note 3:** Margin = Regulated Threshold level - Adjusted Power



| Band           | Channel Freq. (MHz) | Channel BW (MHz) | Incumbent freq. (MHz) | Injected AWGN Level (dBm) | Detection Rate (%) | Regulated Threshold level (dBm) | Adjusted Power (dBm) | Margin (dB) |
|----------------|---------------------|------------------|-----------------------|---------------------------|--------------------|---------------------------------|----------------------|-------------|
| UNII<br>Band 8 | 7015                | 20               | 7015                  | -78.06                    | 100                | -62                             | -76.02               | 14.02       |
|                |                     |                  |                       | Result: Stop Transmission |                    |                                 |                      |             |
|                |                     |                  |                       | -79.06                    | <90                | -62                             | -77.02               | 15.02       |
|                |                     |                  |                       | Result: Minimal Operation |                    |                                 |                      |             |
|                |                     |                  |                       | -80.06                    | =0                 | -62                             | -78.02               | 16.02       |
|                |                     |                  |                       | Result: Normal Operation  |                    |                                 |                      |             |
|                | 6985                | 160              | 6910                  | -77.77                    | 100                | -62                             | -75.73               | 13.73       |
|                |                     |                  |                       | Result: Stop Transmission |                    |                                 |                      |             |
|                |                     |                  |                       | -78.77                    | <90                | -62                             | -76.73               | 14.73       |
|                |                     |                  |                       | Result: Minimal Operation |                    |                                 |                      |             |
|                |                     |                  |                       | -79.77                    | =0                 | -62                             | -77.73               | 15.73       |
|                |                     |                  |                       | Result: Normal Operation  |                    |                                 |                      |             |
|                |                     |                  | 6985                  | -69.25                    | 100                | -62                             | -67.21               | 5.21        |
|                |                     |                  |                       | Result: Stop Transmission |                    |                                 |                      |             |
|                |                     |                  |                       | -70.25                    | <90                | -62                             | -68.21               | 6.21        |
|                |                     |                  |                       | Result: Minimal Operation |                    |                                 |                      |             |
|                |                     |                  |                       | -71.25                    | =0                 | -62                             | -69.21               | 7.21        |
|                |                     |                  |                       | Result: Normal Operation  |                    |                                 |                      |             |
|                |                     |                  | 7060                  | -72.44                    | 100                | -62                             | -70.40               | 8.40        |
|                |                     |                  |                       | Result: Stop Transmission |                    |                                 |                      |             |
|                |                     |                  |                       | -73.44                    | <90                | -62                             | -71.40               | 9.40        |
|                |                     |                  |                       | Result: Minimal Operation |                    |                                 |                      |             |
|                |                     |                  |                       | -74.44                    | =0                 | -62                             | -72.40               | 10.40       |
|                |                     |                  |                       | Result: Normal Operation  |                    |                                 |                      |             |

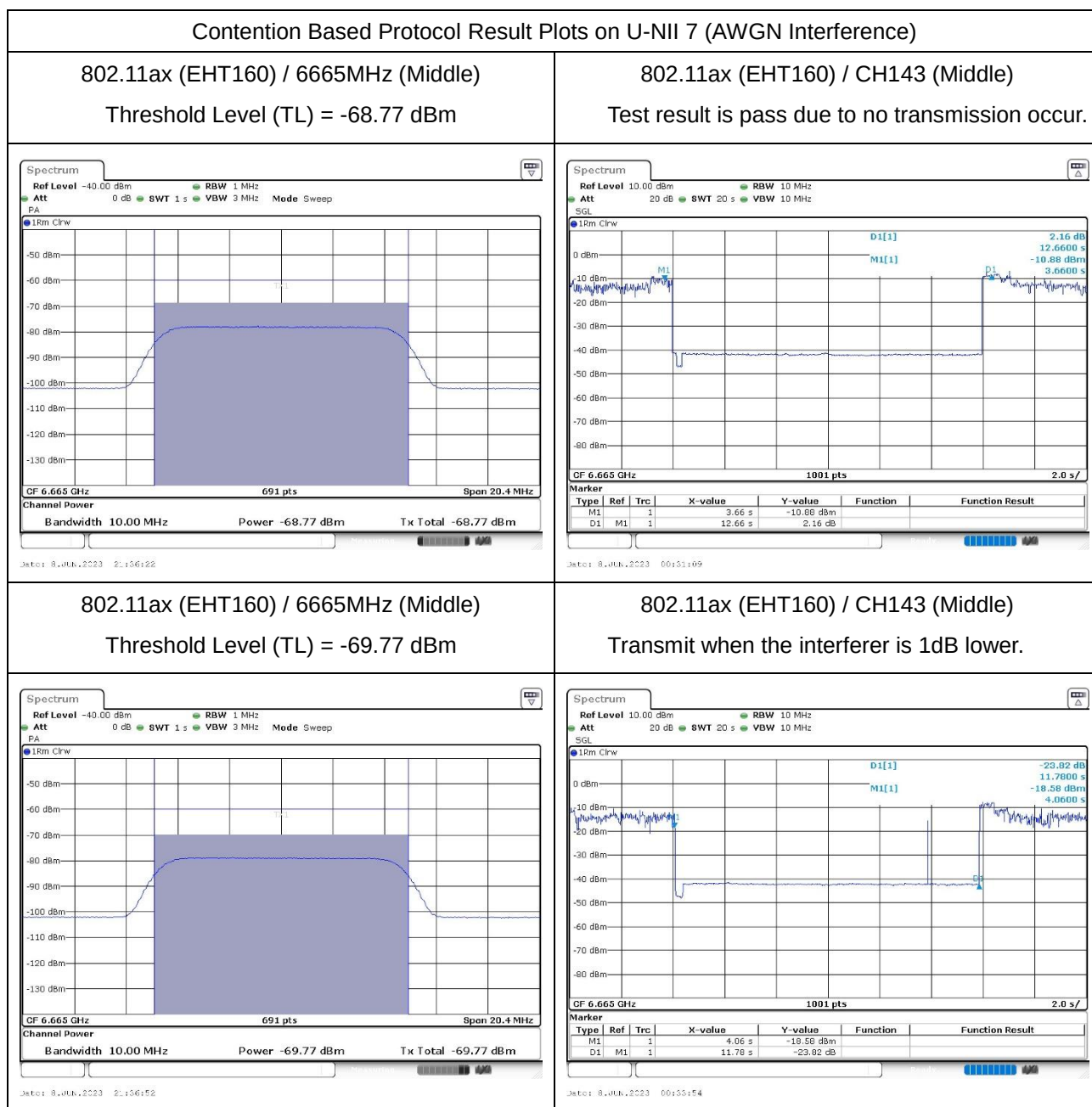
**Note 1:** Adjusted Power = Injected AWGN Level - minimum antenna gain (Antenna 5, gain = -2.04dBi)

**Note 2:** Path Loss between antenna and RF connector is negligible. (0 dB)

**Note 3:** Margin = Regulated Threshold level - Adjusted Power



## 3.1.7 Worst Case Plots of Contention Based Protocol



Remark: M1: Injection of AWGN signal, D1: Removal of AWGN signal



## 4 List of Measuring Equipment

| Instrument                       | Brand Name         | Model No. | Serial No.            | Characteristics              | Calibration Date | Test Date     | Due Date      | Remark             |
|----------------------------------|--------------------|-----------|-----------------------|------------------------------|------------------|---------------|---------------|--------------------|
| Spectrum Analyzer                | R&S                | FSV40     | 101078                | 10Hz~40GHz                   | Apr. 06, 2023    | Jun. 12, 2023 | Apr. 05, 2024 | CBP<br>(DFS01- SZ) |
| MXG-B RF Vector Signal Generator | Keysight           | N5182B    | MY562004<br>24        | 9kHz~6GHz                    | Apr. 04, 2023    | Jun. 12, 2023 | Apr. 03, 2024 | CBP<br>(DFS01- SZ) |
| Shielding Box                    | Hongyitong         | 182-200   | AGTE2013<br>182200016 | Shielded Effect:<br>MAX 70dB | Oct. 17, 2022    | Jun. 12, 2023 | Oct. 16, 2023 | CBP<br>(DFS01- SZ) |
| Combiner                         | MTJ<br>Cooperation | MTJ7112   | N/A                   | 0.4-6GHz                     | NCR              | Jun. 12, 2023 | NCR           | CBP<br>(DFS01- SZ) |

NCR: No Calibration Required

----- THE END -----