



# EVALUATION REPORT

|                           |                                                                                               |
|---------------------------|-----------------------------------------------------------------------------------------------|
| EUT Description           | WiGig, WLAN and BT, 2x2 PCIe M.2 adapter card                                                 |
| Brand Name                | Intel® Tri-Band Wireless-AC 18260                                                             |
| Model Name                | 18260NGW, 18260NGW LC                                                                         |
| FCC/IC ID                 | FCC ID: PD918260NG<br>IC ID: 1000M-18260NG                                                    |
| Antenna type              | SkyCross WIMAX/WLAN Reference Antenna                                                         |
| Hardware/Software Version | HW config: 31.1<br>Test SW: DRTU version 1.8.3-01557<br>Op SW WiFi: 18.20, Op SW BT: 18.12    |
| Features                  | WiGig + 802.11 a/b/g/n/ac Wireless LAN + BDR/EDR 2.1 + BLE 4.0<br>(see section 3)             |
| Applicant                 | Intel Mobile Communications                                                                   |
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| Reference Standards       | FCC CFR Title 47 Part 1.1310<br>FCC CFR Title 47 Part 2.1091<br>IC RSS-102<br>(see section 1) |
| Test Report number        | 15081803.TR06                                                                                 |
| Revision Control          | Rev. 00                                                                                       |

The test results relate only to the samples tested.

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# Table of Contents

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|                                                                            |          |
|----------------------------------------------------------------------------|----------|
| <b>1. Standards, reference documents and applicable test methods .....</b> | <b>3</b> |
| <b>2. General conditions, competences and guarantees .....</b>             | <b>3</b> |
| <b>3. EUT features .....</b>                                               | <b>3</b> |
| <b>4. Remarks and comments .....</b>                                       | <b>3</b> |
| <b>5. Evaluation Verdicts summary .....</b>                                | <b>4</b> |
| <b>6. Document Revision History .....</b>                                  | <b>4</b> |
| <b>Annex A. Evaluation Description .....</b>                               | <b>5</b> |
| A.1 RF EXPOSURE LIMIT .....                                                | 5        |
| <b>Annex B. Results of RF Exposure Evaluation .....</b>                    | <b>7</b> |
| B.1 BLUETOOTH BR/EDR - FHSS .....                                          | 7        |
| B.2 BLE - DTS .....                                                        | 7        |
| B.3 802.11B/G/N - DTS .....                                                | 8        |
| B.4 802.11A/G/N/AC – U-NII-1 .....                                         | 9        |
| B.5 802.11A/G/N/AC – U-NII-2A .....                                        | 10       |
| B.6 802.11A/G/N/AC – U-NII-2C .....                                        | 11       |
| B.7 802.11A/G/N/AC – U-NII-3 .....                                         | 13       |

## 1. Standards, reference documents and applicable test methods

1. FCC CFR Title 47 Part 1.1310 – Radiofrequency radiation exposure limits.
2. FCC CFR Title 47 Part 2.1091 – Radiofrequency radiation exposure evaluation: mobile devices.
3. IC RSS-102 Issue 5 – Radio Frequency (RF) Exposure Compliance of Radiocommunication Apparatus (All Frequency Bands).

## 2. General conditions, competences and guarantees

- ✓ Intel Mobile Communications Wireless RF Lab (Intel WRF Lab) is a laboratory competent to perform this evaluation.
- ✓ Intel WRF Lab only provides testing services and is committed to providing reliable, unbiased test results and interpretations.
- ✓ Intel WRF Lab is liable to the client for the maintenance of the confidentiality of all information related to the item under test and the results of the test.
- ✓ Intel WRF Lab has developed calibration and proficiency programs for its measurement equipment to ensure correlated and reliable results to its customers.
- ✓ This report is only referred to the item that has undergone the test.
- ✓ This report does not imply an approval of the product by the Certification Bodies or competent Authorities.
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## 3. EUT features

These are the detailed bands and modes supported by the Equipment Under Test:

|                        |                                                                                                                              |
|------------------------|------------------------------------------------------------------------------------------------------------------------------|
| WiGig                  | 60GHz (57.24 – 63.72 GHz)                                                                                                    |
| 802.11b/g/n            | 2.4GHz (2400.0 – 2483.5 MHz)                                                                                                 |
| 802.11a/n/ac           | 5.2GHz (5150.0 – 5250.0 MHz)<br>5.3GHz (5250.0 – 5350.0 MHz)<br>5.6GHz (5470.0 – 5725.0 MHz)<br>5.8GHz (5725.0 – 5850.0 MHz) |
| BDR/EDR 2.1<br>BLE 4.0 | 2.4GHz (2400.0 – 2483.5 MHz)                                                                                                 |

## 4. Remarks and comments

1. The conducted output power values presented in this report are the corresponding maximum per band and they are taken from reports 15081803.TR01, 15081803.TR02 and 15081803.TR03.

## 5. Evaluation Verdicts summary

| Band    | Mode                    | FCC                                                |                             | IC                                               |                           | Verdict |
|---------|-------------------------|----------------------------------------------------|-----------------------------|--------------------------------------------------|---------------------------|---------|
|         |                         | Highest Power Density @ 20cm (mW/cm <sup>2</sup> ) | Limit (mW/cm <sup>2</sup> ) | Highest Power Density @ 20cm (W/m <sup>2</sup> ) | Limit (W/m <sup>2</sup> ) |         |
| 2.4 GHz | Bluetooth BR/EDR - FHSS | 0.007                                              | 1.00                        | 0.070                                            | 5.41                      | P       |
|         | BLE – DTS               | 0.003                                              | 1.00                        | 0.035                                            | 5.41                      | P       |
|         | 802.11b/g/n – DTS       | 0.052                                              | 1.00                        | 0.516                                            | 5.40                      | P       |
| 5.2GHz  | 802.11a/n/ac – U-NII-1  | 0.095                                              | 1.00                        | 0.948                                            | 9.07                      | P       |
| 5.3GHz  | 802.11a/n/ac – U-NII-2A | 0.087                                              | 1.00                        | 0.867                                            | 9.15                      | P       |
| 5.6GHz  | 802.11a/n/ac – U-NII-2C | 0.091                                              | 1.00                        | 0.914                                            | 9.45                      | P       |
| 5.8GHz  | 802.11a/n/ac – U-NII-3  | 0.084                                              | 1.00                        | 0.842                                            | 9.76                      | P       |

P: Pass

F: Fail

NM: Not Measured

NA: Not Applicable

## 6. Document Revision History

| Revision # | Date       | Modified by | Details     |
|------------|------------|-------------|-------------|
| Rev. 00    | 2015-10-16 | J.M. Fortes | First Issue |

# Annex A. Evaluation Description

## A.1 RF Exposure Limit

The EUT has been evaluated against the requirement of human Maximum Permissible Exposure (MPE) according to the standards and documents detailed in 1. *Standards, reference documents and applicable test methods.*

As per FCC CFR Title 47 Part 2.1091, a mobile device (i.e. transmitting device designed to be used in such way that a separation distance of at least 20 centimeters is normally maintained between the transmitter's radiating structure(s) and the body of the user or nearby persons) operating in the services covered by Parts 22, 24, 27 and 90 are subject to RF Exposure evaluation according to the limits defined in FCC CFR Title 47 Part 1.1310, Table 1:

| TABLE 1—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)          |                               |                               |                                     |                          |
|----------------------------------------------------------------|-------------------------------|-------------------------------|-------------------------------------|--------------------------|
| Frequency range (MHz)                                          | Electric field strength (V/m) | Magnetic field strength (A/m) | Power density (mW/cm <sup>2</sup> ) | Averaging time (minutes) |
| <b>(A) Limits for Occupational/Controlled Exposure</b>         |                               |                               |                                     |                          |
| 0.3-3.0                                                        | 614                           | 1.63                          | *100                                | 6                        |
| 3.0-30                                                         | 1842/f                        | 4.89/f                        | *900/f <sup>2</sup>                 | 6                        |
| 30-300                                                         | 61.4                          | 0.163                         | 1.0                                 | 6                        |
| 300-1,500                                                      |                               |                               | f/300                               | 6                        |
| 1,500-100,000                                                  |                               |                               | 5                                   | 6                        |
| <b>(B) Limits for General Population/Uncontrolled Exposure</b> |                               |                               |                                     |                          |
| 0.3-1.34                                                       | 614                           | 1.63                          | *100                                | 30                       |
| 1.34-30                                                        | 824/f                         | 2.19/f                        | *180/f <sup>2</sup>                 | 30                       |
| 30-300                                                         | 27.5                          | 0.073                         | 0.2                                 | 30                       |
| 300-1,500                                                      |                               |                               | f/1500                              | 30                       |
| 1,500-100,000                                                  |                               |                               | 1.0                                 | 30                       |

f = frequency in MHz \* = Plane-wave equivalent power density

As per RSS 102 Issue 5, devices that have a radiating element normally operating at or below 6 GHz, with a separation distance greater than 20 cm between the user and/or bystander and the device shall undergo an RF exposure evaluation:

**Table 4: RF Field Strength Limits for Devices Used by the General Public (Uncontrolled Environment)**

| Frequency Range (MHz)  | Electric Field (V/m rms)         | Magnetic Field (A/m rms)                        | Power Density (W/m <sup>2</sup> )  | Reference Period (minutes)      |
|------------------------|----------------------------------|-------------------------------------------------|------------------------------------|---------------------------------|
| 0.003-10 <sup>21</sup> | 83                               | 90                                              | -                                  | Instantaneous*                  |
| 0.1-10                 | -                                | 0.73/ <i>f</i>                                  | -                                  | 6**                             |
| 1.1-10                 | 87/ <i>f</i> <sup>0.5</sup>      | -                                               | -                                  | 6**                             |
| 10-20                  | 27.46                            | 0.0728                                          | 2                                  | 6                               |
| 20-48                  | 58.07/ <i>f</i> <sup>0.25</sup>  | 0.1540/ <i>f</i> <sup>0.25</sup>                | 8.944/ <i>f</i> <sup>0.5</sup>     | 6                               |
| 48-300                 | 22.06                            | 0.05852                                         | 1.291                              | 6                               |
| 300-6000               | 3.142 <i>f</i> <sup>0.3417</sup> | 0.008335 <i>f</i> <sup>0.3417</sup>             | 0.02619 <i>f</i> <sup>0.6834</sup> | 6                               |
| 6000-15000             | 61.4                             | 0.163                                           | 10                                 | 6                               |
| 15000-150000           | 61.4                             | 0.163                                           | 10                                 | 616000/ <i>f</i> <sup>1.2</sup> |
| 150000-300000          | 0.158 <i>f</i> <sup>0.5</sup>    | 4.21 x 10 <sup>-4</sup> <i>f</i> <sup>0.5</sup> | 6.67 x 10 <sup>-5</sup> <i>f</i>   | 616000/ <i>f</i> <sup>1.2</sup> |

Note: *f* is frequency in MHz.  
 \*Based on nerve stimulation (NS).  
 \*\* Based on specific absorption rate (SAR).

For the purpose of this evaluation, a minimum distance of 20cm was used to calculate the equivalent plan wave power density, to be compared with the power density limit, according to Friis transmission formula:

$$S_{eq} = \frac{P_{avg} \cdot G}{4 \cdot \pi \cdot R^2}$$

Where:

$S_{eq}$  = Equivalent Plane Wave Power Density

$P_{avg}$  = Source-Based Average Power at antenna terminals

$G$  = Gain of the Transmitting Antenna

$R$  = Distance from the Transmitting Antenna

# Annex B. Results of RF Exposure Evaluation

## B.1 Bluetooth BR/EDR - FHSS

Antenna Peak Gain = 3dBi

| Mode               | CH # | Freq [MHz] | Avg Power [dBm] | ERP/EIRP Avg [dBm] | ERP/EIRP Avg [mW] | FCC                                        |                             | IC                                       |                           |
|--------------------|------|------------|-----------------|--------------------|-------------------|--------------------------------------------|-----------------------------|------------------------------------------|---------------------------|
|                    |      |            |                 |                    |                   | Power density @ 20cm [mW/cm <sup>2</sup> ] | Limit [mW/cm <sup>2</sup> ] | Power density @ 20cm [W/m <sup>2</sup> ] | Limit [W/m <sup>2</sup> ] |
| Basic Rate GFSK    | 0    | 2402       | 10.63           | 13.63              | 23.07             | 0.005                                      | 1.00                        | 0.046                                    | 5.35                      |
|                    | 39   | 2441       | 12.47           | 15.47              | 35.24             | 0.007                                      | 1.00                        | 0.070                                    | 5.41                      |
|                    | 78   | 2480       | 10.13           | 13.13              | 20.56             | 0.004                                      | 1.00                        | 0.041                                    | 5.47                      |
| EDR $\pi/4$ -DQPSK | 0    | 2402       | 10.32           | 13.32              | 21.48             | 0.004                                      | 1.00                        | 0.043                                    | 5.35                      |
|                    | 39   | 2441       | 12.13           | 15.13              | 32.58             | 0.006                                      | 1.00                        | 0.065                                    | 5.41                      |
|                    | 78   | 2480       | 9.93            | 12.93              | 19.63             | 0.004                                      | 1.00                        | 0.039                                    | 5.47                      |
| EDR 8-DPSK         | 0    | 2402       | 10.52           | 13.52              | 22.49             | 0.004                                      | 1.00                        | 0.045                                    | 5.35                      |
|                    | 39   | 2441       | 12.19           | 15.19              | 33.04             | 0.007                                      | 1.00                        | 0.066                                    | 5.41                      |
|                    | 78   | 2480       | 9.99            | 12.99              | 19.91             | 0.004                                      | 1.00                        | 0.040                                    | 5.47                      |

## B.2 BLE - DTS

Antenna Peak Gain = 3dBi

| Mode | CH # | Freq [MHz] | Avg Power [dBm] | ERP/EIRP Avg [dBm] | ERP/EIRP Avg [mW] | FCC                                        |                             | IC                                       |                           |
|------|------|------------|-----------------|--------------------|-------------------|--------------------------------------------|-----------------------------|------------------------------------------|---------------------------|
|      |      |            |                 |                    |                   | Power density @ 20cm [mW/cm <sup>2</sup> ] | Limit [mW/cm <sup>2</sup> ] | Power density @ 20cm [W/m <sup>2</sup> ] | Limit [W/m <sup>2</sup> ] |
| BLE  | 0    | 2402       | 8.55            | 11.55              | 14.29             | 0.003                                      | 1.00                        | 0.028                                    | 5.35                      |
|      | 19   | 2440       | 9.40            | 12.40              | 17.38             | 0.003                                      | 1.00                        | 0.035                                    | 5.41                      |
|      | 39   | 2480       | 7.79            | 10.79              | 11.99             | 0.002                                      | 1.00                        | 0.024                                    | 5.47                      |

### B.3 802.11b/g/n - DTS

Antenna Peak Gain = 3dBi

| Mode      | CH # | Freq [MHz] | Antenna | Avg Power [dBm] | ERP/EIRP Avg [dBm] | ERP/EIRP Avg [mW] | FCC                                        |                             | IC                                       |                           |
|-----------|------|------------|---------|-----------------|--------------------|-------------------|--------------------------------------------|-----------------------------|------------------------------------------|---------------------------|
|           |      |            |         |                 |                    |                   | Power density @ 20cm [mW/cm <sup>2</sup> ] | Limit [mW/cm <sup>2</sup> ] | Power density @ 20cm [W/m <sup>2</sup> ] | Limit [W/m <sup>2</sup> ] |
| 802.11b   | 1    | 2412       | A       | 20.92           | 23.92              | 246.51            | 0.049                                      | 1.00                        | 0.490                                    | 5.37                      |
|           |      |            | B       | 20.87           | 23.87              | 243.69            | 0.048                                      | 1.00                        | 0.485                                    | 5.37                      |
|           | 6    | 2437       | A       | 21.04           | 24.04              | 253.41            | 0.050                                      | 1.00                        | 0.504                                    | 5.40                      |
|           |      |            | B       | 20.87           | 23.87              | 243.69            | 0.048                                      | 1.00                        | 0.485                                    | 5.40                      |
|           | 11   | 2462       | A       | 19.69           | 22.69              | 185.71            | 0.037                                      | 1.00                        | 0.369                                    | 5.44                      |
|           |      |            | B       | 18.61           | 21.61              | 144.82            | 0.029                                      | 1.00                        | 0.288                                    | 5.44                      |
|           | 12   | 2462       | A       | 15.91           | 18.91              | 77.77             | 0.015                                      | 1.00                        | 0.155                                    | 5.44                      |
|           |      |            | B       | 14.20           | 17.20              | 52.46             | 0.010                                      | 1.00                        | 0.104                                    | 5.45                      |
|           | 13   | 2462       | A       | 9.26            | 12.26              | 16.82             | 0.003                                      | 1.00                        | 0.033                                    | 5.44                      |
|           |      |            | B       | 8.43            | 11.43              | 13.89             | 0.003                                      | 1.00                        | 0.028                                    | 5.46                      |
| 802.11g   | 1    | 2412       | A       | 18.08           | 21.08              | 128.29            | 0.026                                      | 1.00                        | 0.255                                    | 5.37                      |
|           |      |            | B       | 17.92           | 20.92              | 123.65            | 0.025                                      | 1.00                        | 0.246                                    | 5.37                      |
|           | 6    | 2437       | A       | 20.98           | 23.98              | 250.15            | 0.050                                      | 1.00                        | 0.498                                    | 5.40                      |
|           |      |            | B       | 20.96           | 23.96              | 249.00            | 0.050                                      | 1.00                        | 0.495                                    | 5.40                      |
|           | 11   | 2462       | A       | 18.09           | 21.09              | 128.59            | 0.026                                      | 1.00                        | 0.256                                    | 5.44                      |
|           |      |            | B       | 17.97           | 20.97              | 125.08            | 0.025                                      | 1.00                        | 0.249                                    | 5.44                      |
|           | 12   | 2462       | A       | 12.38           | 15.38              | 34.53             | 0.007                                      | 1.00                        | 0.069                                    | 5.44                      |
|           |      |            | B       | 12.99           | 15.99              | 39.74             | 0.008                                      | 1.00                        | 0.079                                    | 5.45                      |
|           | 13   | 2462       | A       | -2.80           | 0.20               | 1.05              | 0.000                                      | 1.00                        | 0.002                                    | 5.44                      |
|           |      |            | B       | -4.43           | -1.43              | 0.72              | 0.000                                      | 1.00                        | 0.001                                    | 5.46                      |
| 802.11n20 | 1    | 2412       | A       | 17.27           | 20.27              | 106.37            | 0.021                                      | 1.00                        | 0.212                                    | 5.37                      |
|           |      |            | B       | 17.73           | 20.73              | 118.25            | 0.024                                      | 1.00                        | 0.235                                    | 5.37                      |
|           |      |            | MIMO    | 16.68           | 19.68              | 92.87             | 0.018                                      | 1.00                        | 0.185                                    | 5.37                      |
|           | 6    | 2437       | A       | 20.92           | 23.92              | 246.50            | 0.049                                      | 1.00                        | 0.490                                    | 5.40                      |
|           |      |            | B       | 21.01           | 24.01              | 251.66            | 0.050                                      | 1.00                        | 0.501                                    | 5.40                      |
|           |      |            | MIMO    | 18.12           | 21.12              | 129.39            | 0.026                                      | 1.00                        | 0.257                                    | 5.40                      |
|           | 11   | 2462       | A       | 17.27           | 20.27              | 106.37            | 0.021                                      | 1.00                        | 0.212                                    | 5.44                      |
|           |      |            | B       | 17.59           | 20.59              | 114.50            | 0.023                                      | 1.00                        | 0.228                                    | 5.44                      |
|           |      |            | MIMO    | 17.59           | 20.59              | 114.52            | 0.023                                      | 1.00                        | 0.228                                    | 5.44                      |
|           | 12   | 2462       | A       | 11.44           | 14.44              | 27.78             | 0.006                                      | 1.00                        | 0.055                                    | 5.44                      |
|           |      |            | B       | 12.35           | 15.35              | 34.26             | 0.007                                      | 1.00                        | 0.068                                    | 5.45                      |
|           |      |            | MIMO    | 11.02           | 14.02              | 25.23             | 0.005                                      | 1.00                        | 0.050                                    | 5.45                      |
|           | 13   | 2462       | A       | -3.74           | -0.74              | 0.84              | 0.000                                      | 1.00                        | 0.002                                    | 5.44                      |
|           |      |            | B       | -4.82           | -1.82              | 0.66              | 0.000                                      | 1.00                        | 0.001                                    | 5.46                      |
|           |      |            | MIMO    | -3.92           | -0.92              | 0.81              | 0.000                                      | 1.00                        | 0.002                                    | 5.46                      |
| 802.11n40 | 3F   | 2422       | A       | 16.41           | 19.41              | 87.28             | 0.017                                      | 1.00                        | 0.174                                    | 5.38                      |
|           |      |            | B       | 17.21           | 20.21              | 104.93            | 0.021                                      | 1.00                        | 0.209                                    | 5.38                      |
|           |      |            | MIMO    | 15.96           | 18.96              | 78.79             | 0.016                                      | 1.00                        | 0.157                                    | 5.38                      |
|           | 6F   | 2437       | A       | 20.47           | 23.47              | 222.28            | 0.044                                      | 1.00                        | 0.442                                    | 5.40                      |
|           |      |            | B       | 20.58           | 23.58              | 227.99            | 0.045                                      | 1.00                        | 0.454                                    | 5.40                      |
|           |      |            | MIMO    | 17.81           | 20.81              | 120.64            | 0.024                                      | 1.00                        | 0.240                                    | 5.40                      |
|           | 9F   | 2452       | A       | 17.21           | 20.21              | 104.93            | 0.021                                      | 1.00                        | 0.209                                    | 5.43                      |
|           |      |            | B       | 17.32           | 20.32              | 107.62            | 0.021                                      | 1.00                        | 0.214                                    | 5.43                      |
|           |      |            | MIMO    | 17.14           | 20.14              | 103.39            | 0.021                                      | 1.00                        | 0.206                                    | 5.43                      |
|           | 10F  | 2457       | A       | 9.85            | 12.85              | 19.27             | 0.004                                      | 1.00                        | 0.038                                    | 5.43                      |
|           |      |            | B       | 10.32           | 13.32              | 21.47             | 0.004                                      | 1.00                        | 0.043                                    | 5.43                      |
|           |      |            | MIMO    | 9.62            | 12.62              | 18.30             | 0.004                                      | 1.00                        | 0.036                                    | 5.43                      |
|           | 11F  | 2462       | A       | -3.20           | -0.20              | 0.95              | 0.000                                      | 1.00                        | 0.002                                    | 5.44                      |
|           |      |            | B       | -3.61           | -0.61              | 0.87              | 0.000                                      | 1.00                        | 0.002                                    | 5.44                      |
|           |      |            | MIMO    | -3.41           | -0.41              | 0.91              | 0.000                                      | 1.00                        | 0.002                                    | 5.44                      |

## B.4 802.11a/g/n/ac – U-NII-1

Antenna Peak Gain = 5dBi

| Mode       | CH #   | Freq [MHz] | Antenna | Avg Power [dBm] | ERP/EIRP Avg [dBm] | ERP/EIRP Avg [mW] | FCC                                        |                             | IC                                       |                           |
|------------|--------|------------|---------|-----------------|--------------------|-------------------|--------------------------------------------|-----------------------------|------------------------------------------|---------------------------|
|            |        |            |         |                 |                    |                   | Power density @ 20cm [mW/cm <sup>2</sup> ] | Limit [mW/cm <sup>2</sup> ] | Power density @ 20cm [W/m <sup>2</sup> ] | Limit [W/m <sup>2</sup> ] |
| 802.11a    | 36     | 5180       | A       | 18.37           | 23.37              | 217.16            | 0.043                                      | 1.00                        | 0.432                                    | 9.05                      |
|            |        |            | B       | 18.22           | 23.22              | 209.79            | 0.042                                      | 1.00                        | 0.417                                    | 9.05                      |
|            | 40     | 5200       | A       | 20.07           | 25.07              | 321.20            | 0.064                                      | 1.00                        | 0.639                                    | 9.07                      |
|            |        |            | B       | 20.03           | 25.03              | 318.26            | 0.063                                      | 1.00                        | 0.633                                    | 9.07                      |
|            | 48     | 5240       | A       | 21.20           | 26.20              | 416.66            | 0.083                                      | 1.00                        | 0.829                                    | 9.12                      |
|            |        |            | B       | 21.17           | 26.17              | 413.79            | 0.082                                      | 1.00                        | 0.823                                    | 9.12                      |
| 802.11n20  | 36     | 5180       | A       | 18.24           | 23.24              | 211.05            | 0.042                                      | 1.00                        | 0.420                                    | 9.05                      |
|            |        |            | B       | 17.93           | 22.93              | 196.51            | 0.039                                      | 1.00                        | 0.391                                    | 9.05                      |
|            |        |            | MIMO    | 19.84           | 24.84              | 305.13            | 0.061                                      | 1.00                        | 0.607                                    | 9.05                      |
|            | 40     | 5200       | A       | 20.03           | 25.03              | 318.70            | 0.063                                      | 1.00                        | 0.634                                    | 9.07                      |
|            |        |            | B       | 19.76           | 24.76              | 299.49            | 0.060                                      | 1.00                        | 0.596                                    | 9.07                      |
|            |        |            | MIMO    | 21.78           | 26.78              | 476.50            | 0.095                                      | 1.00                        | 0.948                                    | 9.07                      |
|            | 48     | 5240       | A       | 21.14           | 26.14              | 411.51            | 0.082                                      | 1.00                        | 0.819                                    | 9.12                      |
|            |        |            | B       | 21.17           | 26.17              | 414.36            | 0.082                                      | 1.00                        | 0.824                                    | 9.12                      |
|            |        |            | MIMO    | 21.27           | 26.27              | 423.73            | 0.084                                      | 1.00                        | 0.843                                    | 9.12                      |
| 802.11n40  | 38F    | 5190       | A       | 16.86           | 21.86              | 153.53            | 0.031                                      | 1.00                        | 0.305                                    | 9.06                      |
|            |        |            | B       | 16.01           | 21.01              | 126.24            | 0.025                                      | 1.00                        | 0.251                                    | 9.06                      |
|            |        |            | MIMO    | 15.55           | 20.55              | 113.48            | 0.023                                      | 1.00                        | 0.226                                    | 9.06                      |
|            | 46F    | 5230       | A       | 20.21           | 25.21              | 332.05            | 0.066                                      | 1.00                        | 0.661                                    | 9.11                      |
|            |        |            | B       | 19.80           | 24.80              | 302.14            | 0.060                                      | 1.00                        | 0.601                                    | 9.11                      |
|            |        |            | MIMO    | 21.42           | 26.42              | 438.85            | 0.087                                      | 1.00                        | 0.873                                    | 9.11                      |
| 802.11ac80 | 42ac80 | 5210       | A       | 13.54           | 18.54              | 71.47             | 0.014                                      | 1.00                        | 0.142                                    | 9.08                      |
|            |        |            | B       | 13.37           | 18.37              | 68.73             | 0.014                                      | 1.00                        | 0.137                                    | 9.08                      |
|            |        |            | MIMO    | 14.70           | 19.70              | 93.22             | 0.019                                      | 1.00                        | 0.185                                    | 9.08                      |

## B.5 802.11a/g/n/ac – U-NII-2A

Antenna Peak Gain = 5dBi

| Mode       | CH #   | Freq [MHz] | Antenna | Avg Power [dBm] | ERP/EIRP Avg [dBm] | ERP/EIRP Avg [mW] | FCC                                        |                             | IC                                       |                           |
|------------|--------|------------|---------|-----------------|--------------------|-------------------|--------------------------------------------|-----------------------------|------------------------------------------|---------------------------|
|            |        |            |         |                 |                    |                   | Power density @ 20cm [mW/cm <sup>2</sup> ] | Limit [mW/cm <sup>2</sup> ] | Power density @ 20cm [W/m <sup>2</sup> ] | Limit [W/m <sup>2</sup> ] |
| 802.11a    | 52     | 5260       | A       | 21.19           | 26.19              | 415.70            | 0.083                                      | 1.00                        | 0.827                                    | 9.14                      |
|            |        |            | B       | 21.13           | 26.13              | 410.00            | 0.082                                      | 1.00                        | 0.816                                    | 9.14                      |
|            | 56     | 5280       | A       | 21.21           | 26.21              | 417.62            | 0.083                                      | 1.00                        | 0.831                                    | 9.17                      |
|            |        |            | B       | 21.15           | 26.15              | 411.89            | 0.082                                      | 1.00                        | 0.819                                    | 9.17                      |
|            | 64     | 5320       | A       | 16.69           | 21.69              | 147.50            | 0.029                                      | 1.00                        | 0.293                                    | 9.21                      |
|            |        |            | B       | 16.82           | 21.82              | 151.98            | 0.030                                      | 1.00                        | 0.302                                    | 9.21                      |
| 802.11n20  | 52     | 5260       | A       | 21.13           | 26.13              | 410.56            | 0.082                                      | 1.00                        | 0.817                                    | 9.14                      |
|            |        |            | B       | 21.13           | 26.13              | 410.56            | 0.082                                      | 1.00                        | 0.817                                    | 9.14                      |
|            |        |            | MIMO    | 21.24           | 26.24              | 420.73            | 0.084                                      | 1.00                        | 0.837                                    | 9.14                      |
|            | 56     | 5280       | A       | 20.50           | 25.50              | 355.12            | 0.071                                      | 1.00                        | 0.706                                    | 9.17                      |
|            |        |            | B       | 20.94           | 25.94              | 392.99            | 0.078                                      | 1.00                        | 0.782                                    | 9.17                      |
|            |        |            | MIMO    | 21.24           | 26.24              | 420.73            | 0.084                                      | 1.00                        | 0.837                                    | 9.17                      |
|            | 64     | 5320       | A       | 16.55           | 21.55              | 143.01            | 0.028                                      | 1.00                        | 0.285                                    | 9.21                      |
|            |        |            | B       | 16.75           | 21.75              | 149.75            | 0.030                                      | 1.00                        | 0.298                                    | 9.21                      |
|            |        |            | MIMO    | 17.99           | 22.99              | 199.19            | 0.040                                      | 1.00                        | 0.396                                    | 9.21                      |
| 802.11n40  | 54F    | 5270       | A       | 19.62           | 24.62              | 289.87            | 0.058                                      | 1.00                        | 0.577                                    | 9.15                      |
|            |        |            | B       | 19.92           | 24.92              | 310.60            | 0.062                                      | 1.00                        | 0.618                                    | 9.15                      |
|            |        |            | MIMO    | 21.39           | 26.39              | 435.83            | 0.087                                      | 1.00                        | 0.867                                    | 9.15                      |
|            | 62F    | 5310       | A       | 12.88           | 17.88              | 61.41             | 0.012                                      | 1.00                        | 0.122                                    | 9.20                      |
|            |        |            | B       | 13.11           | 18.11              | 64.75             | 0.013                                      | 1.00                        | 0.129                                    | 9.20                      |
|            |        |            | MIMO    | 15.38           | 20.38              | 109.25            | 0.022                                      | 1.00                        | 0.217                                    | 9.20                      |
| 802.11ac80 | 58ac80 | 5290       | A       | 11.38           | 16.38              | 43.46             | 0.009                                      | 1.00                        | 0.086                                    | 9.18                      |
|            |        |            | B       | 12.00           | 17.00              | 50.13             | 0.010                                      | 1.00                        | 0.100                                    | 9.18                      |
|            |        |            | MIMO    | 14.24           | 19.24              | 83.95             | 0.017                                      | 1.00                        | 0.167                                    | 9.18                      |

## B.6 802.11a/g/n/ac – U-NII-2C

Antenna Peak Gain = 5dBi

| Mode      | CH # | Freq [MHz] | Antenna | Avg Power [dBm] | ERP/EIRP Avg [dBm] | ERP/EIRP Avg [mW] | FCC                           |                | IC                          |              |
|-----------|------|------------|---------|-----------------|--------------------|-------------------|-------------------------------|----------------|-----------------------------|--------------|
|           |      |            |         |                 |                    |                   | Power density @ 20cm [mW/cm2] | Limit [mW/cm2] | Power density @ 20cm [W/m2] | Limit [W/m2] |
| 802.11a   | 100  | 5500       | A       | 18.60           | 23.60              | 228.97            | 0.046                         | 1.00           | 0.456                       | 9.43         |
|           |      |            | B       | 17.50           | 22.50              | 177.74            | 0.035                         | 1.00           | 0.354                       | 9.43         |
|           | 104  | 5520       | A       | 20.68           | 25.68              | 369.64            | 0.074                         | 1.00           | 0.735                       | 9.45         |
|           |      |            | B       | 20.72           | 25.72              | 373.06            | 0.074                         | 1.00           | 0.742                       | 9.45         |
|           | 120  | 5600       | A       | 21.24           | 26.24              | 420.51            | 0.084                         | 1.00           | 0.837                       | 9.54         |
|           |      |            | B       | 21.23           | 26.23              | 419.55            | 0.083                         | 1.00           | 0.835                       | 9.54         |
|           | 132  | 5660       | A       | 20.59           | 25.59              | 362.06            | 0.072                         | 1.00           | 0.720                       | 9.61         |
|           |      |            | B       | 20.43           | 25.43              | 348.96            | 0.069                         | 1.00           | 0.694                       | 9.61         |
|           | 136  | 5680       | A       | 18.90           | 23.90              | 245.35            | 0.049                         | 1.00           | 0.488                       | 9.64         |
|           |      |            | B       | 18.72           | 23.72              | 235.39            | 0.047                         | 1.00           | 0.468                       | 9.64         |
|           | 140  | 5700       | A       | 15.14           | 20.14              | 103.22            | 0.021                         | 1.00           | 0.205                       | 9.66         |
|           |      |            | B       | 15.45           | 20.45              | 110.86            | 0.022                         | 1.00           | 0.221                       | 9.66         |
| 802.11n20 | 100  | 5500       | A       | 18.54           | 23.54              | 226.14            | 0.045                         | 1.00           | 0.450                       | 9.43         |
|           |      |            | B       | 17.10           | 22.10              | 162.32            | 0.032                         | 1.00           | 0.323                       | 9.43         |
|           |      |            | MIMO    | 19.11           | 24.11              | 257.40            | 0.051                         | 1.00           | 0.512                       | 9.43         |
|           | 104  | 5520       | A       | 20.62           | 25.62              | 365.07            | 0.073                         | 1.00           | 0.726                       | 9.45         |
|           |      |            | B       | 20.49           | 25.49              | 354.31            | 0.070                         | 1.00           | 0.705                       | 9.45         |
|           |      |            | MIMO    | 21.62           | 26.62              | 459.46            | 0.091                         | 1.00           | 0.914                       | 9.45         |
|           | 120  | 5600       | A       | 21.20           | 26.20              | 417.23            | 0.083                         | 1.00           | 0.830                       | 9.54         |
|           |      |            | B       | 21.15           | 26.15              | 412.46            | 0.082                         | 1.00           | 0.821                       | 9.54         |
|           |      |            | MIMO    | 21.28           | 26.28              | 424.63            | 0.084                         | 1.00           | 0.845                       | 9.54         |
|           | 132  | 5660       | A       | 20.49           | 25.49              | 354.31            | 0.070                         | 1.00           | 0.705                       | 9.61         |
|           |      |            | B       | 20.09           | 25.09              | 323.13            | 0.064                         | 1.00           | 0.643                       | 9.61         |
|           |      |            | MIMO    | 21.34           | 26.34              | 430.53            | 0.086                         | 1.00           | 0.857                       | 9.61         |
|           | 136  | 5680       | A       | 18.62           | 23.62              | 230.35            | 0.046                         | 1.00           | 0.458                       | 9.64         |
|           |      |            | B       | 18.60           | 23.60              | 229.29            | 0.046                         | 1.00           | 0.456                       | 9.64         |
|           |      |            | MIMO    | 20.38           | 25.38              | 344.76            | 0.069                         | 1.00           | 0.686                       | 9.64         |
|           | 140  | 5700       | A       | 14.23           | 19.23              | 83.83             | 0.017                         | 1.00           | 0.167                       | 9.66         |
|           |      |            | B       | 14.81           | 19.81              | 95.80             | 0.019                         | 1.00           | 0.191                       | 9.66         |
|           |      |            | MIMO    | 15.17           | 20.17              | 104.03            | 0.021                         | 1.00           | 0.207                       | 9.66         |

|            |         |            |         |                 |                    |                   | FCC                           |                | IC                          |              |
|------------|---------|------------|---------|-----------------|--------------------|-------------------|-------------------------------|----------------|-----------------------------|--------------|
| Mode       | CH #    | Freq [MHz] | Antenna | Avg Power [dBm] | ERP/EIRP Avg [dBm] | ERP/EIRP Avg [mW] | Power density @ 20cm [mW/cm2] | Limit [mW/cm2] | Power density @ 20cm [W/m2] | Limit [W/m2] |
| 802.11n40  | 102F    | 5510       | A       | 15.55           | 20.55              | 113.56            | 0.023                         | 1.00           | 0.226                       | 9.44         |
|            |         |            | B       | 16.03           | 21.03              | 126.83            | 0.025                         | 1.00           | 0.252                       | 9.44         |
|            |         |            | MIMO    | 15.94           | 20.94              | 124.06            | 0.025                         | 1.00           | 0.247                       | 9.44         |
|            | 110F    | 5550       | A       | 20.07           | 25.07              | 321.52            | 0.064                         | 1.00           | 0.640                       | 9.48         |
|            |         |            | B       | 20.00           | 25.00              | 316.38            | 0.063                         | 1.00           | 0.629                       | 9.48         |
|            |         |            | MIMO    | 21.39           | 26.39              | 435.32            | 0.087                         | 1.00           | 0.866                       | 9.48         |
|            | 118F    | 5590       | A       | 21.19           | 26.19              | 416.11            | 0.083                         | 1.00           | 0.828                       | 9.53         |
|            |         |            | B       | 21.25           | 26.25              | 421.90            | 0.084                         | 1.00           | 0.839                       | 9.53         |
|            |         |            | MIMO    | 21.50           | 26.50              | 447.03            | 0.089                         | 1.00           | 0.889                       | 9.53         |
|            | 126F    | 5630       | A       | 19.92           | 24.92              | 310.60            | 0.062                         | 1.00           | 0.618                       | 9.58         |
|            |         |            | B       | 19.64           | 24.64              | 291.21            | 0.058                         | 1.00           | 0.579                       | 9.58         |
|            |         |            | MIMO    | 21.45           | 26.45              | 441.42            | 0.088                         | 1.00           | 0.878                       | 9.58         |
|            | 134F    | 5670       | A       | 16.62           | 21.62              | 145.28            | 0.029                         | 1.00           | 0.289                       | 9.62         |
|            |         |            | B       | 16.15           | 21.15              | 130.38            | 0.026                         | 1.00           | 0.259                       | 9.62         |
|            |         |            | MIMO    | 18.50           | 23.50              | 223.86            | 0.045                         | 1.00           | 0.445                       | 9.62         |
| 802.11ac80 | 106ac80 | 5530       | A       | 12.05           | 17.05              | 50.71             | 0.010                         | 1.00           | 0.101                       | 9.46         |
|            |         |            | B       | 13.18           | 18.18              | 65.78             | 0.013                         | 1.00           | 0.131                       | 9.46         |
|            |         |            | MIMO    | 13.93           | 18.93              | 78.22             | 0.016                         | 1.00           | 0.156                       | 9.46         |
|            | 122ac80 | 5610       | A       | 17.17           | 22.17              | 164.86            | 0.033                         | 1.00           | 0.328                       | 9.55         |
|            |         |            | B       | 16.83           | 21.83              | 152.45            | 0.030                         | 1.00           | 0.303                       | 9.55         |
|            |         |            | MIMO    | 19.21           | 24.21              | 263.93            | 0.053                         | 1.00           | 0.525                       | 9.55         |

## B.7 802.11a/g/n/ac – U-NII-3

Antenna Peak Gain = 5dBi

| Mode       | CH #    | Freq [MHz] | Antenna | Avg Power [dBm] | ERP/EIRP Avg [dBm] | ERP/EIRP Avg [mW] | FCC                           |                | IC                          |              |
|------------|---------|------------|---------|-----------------|--------------------|-------------------|-------------------------------|----------------|-----------------------------|--------------|
|            |         |            |         |                 |                    |                   | Power density @ 20cm [mW/cm2] | Limit [mW/cm2] | Power density @ 20cm [W/m2] | Limit [W/m2] |
| 802.11a    | 149     | 5745       | A       | 16.77           | 21.77              | 150.24            | 0.030                         | 1.00           | 0.299                       | 9.71         |
|            |         |            | B       | 17.14           | 22.14              | 163.60            | 0.033                         | 1.00           | 0.325                       | 9.71         |
|            | 153     | 5765       | A       | 20.55           | 25.55              | 358.74            | 0.071                         | 1.00           | 0.714                       | 9.73         |
|            |         |            | B       | 20.82           | 25.82              | 381.75            | 0.076                         | 1.00           | 0.759                       | 9.73         |
|            | 157     | 5785       | A       | 21.26           | 26.26              | 422.45            | 0.084                         | 1.00           | 0.840                       | 9.76         |
|            |         |            | B       | 21.27           | 26.27              | 423.43            | 0.084                         | 1.00           | 0.842                       | 9.76         |
|            | 161     | 5805       | A       | 19.00           | 24.00              | 251.06            | 0.050                         | 1.00           | 0.499                       | 9.78         |
|            |         |            | B       | 19.72           | 24.72              | 296.33            | 0.059                         | 1.00           | 0.590                       | 9.78         |
| 802.11n20  | 149     | 5745       | A       | 16.65           | 21.65              | 146.14            | 0.029                         | 1.00           | 0.291                       | 9.80         |
|            |         |            | B       | 16.50           | 21.50              | 141.18            | 0.028                         | 1.00           | 0.281                       | 9.80         |
|            |         |            | MIMO    | 16.27           | 21.27              | 134.08            | 0.027                         | 1.00           | 0.267                       | 9.71         |
|            | 153     | 5765       | A       | 16.79           | 21.79              | 151.14            | 0.030                         | 1.00           | 0.301                       | 9.71         |
|            |         |            | B       | 16.72           | 21.72              | 148.43            | 0.030                         | 1.00           | 0.295                       | 9.71         |
|            |         |            | MIMO    | 20.14           | 25.14              | 326.87            | 0.065                         | 1.00           | 0.650                       | 9.73         |
|            | 157     | 5785       | A       | 20.42           | 25.42              | 348.64            | 0.069                         | 1.00           | 0.694                       | 9.73         |
|            |         |            | B       | 21.17           | 26.17              | 413.53            | 0.082                         | 1.00           | 0.823                       | 9.73         |
|            |         |            | MIMO    | 21.20           | 26.20              | 417.23            | 0.083                         | 1.00           | 0.830                       | 9.76         |
|            | 161     | 5805       | A       | 21.15           | 26.15              | 412.46            | 0.082                         | 1.00           | 0.821                       | 9.76         |
|            |         |            | B       | 21.19           | 26.19              | 415.91            | 0.083                         | 1.00           | 0.827                       | 9.76         |
|            |         |            | MIMO    | 19.20           | 24.20              | 263.26            | 0.052                         | 1.00           | 0.524                       | 9.78         |
|            | 165     | 5825       | A       | 19.19           | 24.19              | 262.65            | 0.052                         | 1.00           | 0.523                       | 9.78         |
|            |         |            | B       | 20.97           | 25.97              | 395.81            | 0.079                         | 1.00           | 0.787                       | 9.78         |
|            |         |            | MIMO    | 15.40           | 20.40              | 109.74            | 0.022                         | 1.00           | 0.218                       | 9.80         |
| 802.11n40  | 151F    | 5755       | A       | 15.82           | 20.82              | 120.89            | 0.024                         | 1.00           | 0.240                       | 9.80         |
|            |         |            | B       | 17.94           | 22.94              | 196.92            | 0.039                         | 1.00           | 0.392                       | 9.80         |
|            |         |            | MIMO    | 15.54           | 20.54              | 113.29            | 0.023                         | 1.00           | 0.225                       | 9.72         |
|            | 159F    | 5795       | A       | 16.03           | 21.03              | 126.83            | 0.025                         | 1.00           | 0.252                       | 9.72         |
|            |         |            | B       | 15.84           | 20.84              | 121.43            | 0.024                         | 1.00           | 0.242                       | 9.72         |
|            |         |            | MIMO    | 17.11           | 22.11              | 162.63            | 0.032                         | 1.00           | 0.324                       | 9.77         |
| 802.11ac80 | 155ac80 | 5775       | A       | 17.31           | 22.31              | 170.30            | 0.034                         | 1.00           | 0.339                       | 9.77         |
|            |         |            | B       | 19.46           | 24.46              | 279.17            | 0.056                         | 1.00           | 0.555                       | 9.77         |
|            |         |            | MIMO    | 12.66           | 17.66              | 58.36             | 0.012                         | 1.00           | 0.116                       | 9.74         |