

Company: Tarana Wireless
Test of: AA2-CN65AFP
To: FCC CFR 47 Part 15 Subpart E 15.407
Report No.: TARA25-U3_Radiated Rev A

RADIATED TEST REPORT



Issue Date: 15th December 2016

| Master Document Number | Addendum Reports |
|------------------------|---------------------|
| TARA25-U3_Master | TARA25-U3_Conducted |
| | TARA25-U3_Radiated |



Title: Tarana Wireless AA2-CN65AFP
To: FCC CFR 47 Part 15 Subpart E 15.407
Serial #: TARA25-U3 Radiated Rev A
Issue Date: 15th December 2016
Page: 2 of 38

Table of Contents

| | |
|---|-----------|
| 1. TEST SUMMARY | 3 |
| 2. MEASUREMENT AND PRESENTATION OF TEST DATA | 4 |
| 3. TEST RESULTS | 5 |
| 3.1. Radiated | 5 |
| 3.1.1. <i>TX Spurious & Restricted Band Emissions</i> | 8 |
| 3.1.2. <i>Restricted Edge & Band-Edge Emissions</i> | 14 |
| 3.1.3. <i>Digital Emissions</i> | 21 |
| A. APPENDIX - GRAPHICAL IMAGES | 25 |
| A.1. Radiated | 26 |
| A.1.1. <i>TX Spurious & Restricted Band Emissions</i> | 26 |
| A.1.2. <i>Restricted Edge & Band-Edge Emissions</i> | 32 |

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Title: Tarana Wireless AA2-CN65AFP
To: FCC CFR 47 Part 15 Subpart E 15.407
Serial #: TARA25-U3 Radiated Rev A
Issue Date: 15th December 2016
Page: 3 of 38

1. TEST SUMMARY

List of Measurements

| Test Header | Result | Data Link |
|---|----------|---------------------------|
| Radiated | Complies | - |
| TX Spurious & Restricted Band Emissions | Complies | - |
| Tarana Antenna | Complies | View Data |
| Restricted Edge & Band-Edge Emissions | Complies | - |
| Tarana Antenna | Complies | View Data |
| Digital Emissions | Complies | View Data |

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Title: Tarana Wireless AA2-CN65AFP
To: FCC CFR 47 Part 15 Subpart E 15.407
Serial #: TARA25-U3 Radiated Rev A
Issue Date: 15th December 2016
Page: 4 of 38

2. MEASUREMENT AND PRESENTATION OF TEST DATA

The measurement and graphical data presented in this test report was generated automatically using state-of-the-art technology creating an easy to read report structure. Numerical measurement data is separated from supporting graphical data (plots) through hyperlinks. Numerical measurement data can be reviewed without scrolling through numerous graphical pages to arrive at the next data matrix.

Plots have been relegated into the Appendix 'Graphical Data'.

Test and report automation was performed by [MiTest](#). [MiTest](#) is an automated test system developed by MiCOM Labs. [MiTest](#) is the first cloud based modular test system enabling end-to-end automation of regulatory compliance testing.

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3. TEST RESULTS

3.1. Radiated

| Radiated Test Conditions for Radiated Spurious and Band-Edge Emissions | | | |
|--|---|----------------------------|-------------|
| Standard: | FCC CFR 47:15.407 | Ambient Temp. (°C): | 20.0 - 24.5 |
| Test Heading: | Radiated Spurious and Band-Edge Emissions | Rel. Humidity (%): | 32 - 45 |
| Standard Section(s): | 15.407 (b), 15.205, 15.209 | Pressure (mBars): | 999 - 1001 |
| Reference Document(s): | See Normative References | | |

Test Procedure for Radiated Spurious and Band-Edge Emissions

Radiated emissions for restricted bands above 1 GHz are measured in the anechoic chamber at a 3-meter distance on every azimuth in both horizontal and vertical polarities. The emissions are recorded and maximized as a function of azimuth by rotation through 360° with a spectrum analyzer in peak hold mode. Depending on the frequency band spanned a notch filter was used to remove the fundamental frequency. The highest emissions relative to the limit are listed for each frequency spanned.

Measurements on any restricted band frequency or frequencies above 1 GHz are based on the use of measurement instrumentation employing peak and average detectors. All measurements were performed using a resolution bandwidth of 1 MHz.

Test configuration and setup for Undesirable Measurement were per the Radiated Test Set-up specified in this document.

15.407 (b) Undesirable emission limits. Except as shown in paragraph (b)(7) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

(1) For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

(2) For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

(3) For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

(4) For transmitters operating in the 5.725-5.85 GHz band: All emissions within the frequency range from the band edge to 10 MHz above or below the band edge shall not exceed an e.i.r.p. of -17 dBm/MHz; for frequencies 10 MHz or greater above or below the band edge, emissions shall not exceed an e.i.r.p. of -27 dBm/MHz.

(5) The emission measurements shall be performed using a minimum resolution bandwidth of 1 MHz. A lower resolution bandwidth may be employed near the band edge, when necessary, provided the measured energy is integrated to show the total power over 1 MHz.

(6) Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in §15.209. Further, any U-NII devices using an AC power line are required to comply also with the conducted limits set forth in §15.207.

(7) The provisions of §15.205 apply to intentional radiators operating under this section.

(8) When measuring the emission limits, the nominal carrier frequency shall be adjusted as close to the upper and lower frequency band edges as the design of the equipment permits.

Limits for Restricted Bands (15.205, 15.209)

Peak emission: 74 dBuV/m

Average emission: 54 dBuV/m

Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Loss, and subtracting Amplifier Gain from the measured reading. All factors are included in the reported data.

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$$FS = R + AF + CORR - FO$$

where:

FS = Field Strength

R = Measured Spectrum analyzer Input Amplitude

AF = Antenna Factor

CORR = Correction Factor = CL – AG + NFL

CL = Cable Loss

AG = Amplifier Gain

FO = Distance Falloff Factor

NFL = Notch Filter Loss

Example:

The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength (dBμV/m);

$$E = 1000000 \times \sqrt{30P} / 3 \text{ } \mu\text{V/m}$$

where P is the EIRP in Watts

Therefore: -27 dBm/MHz equates to 68.23 dBuV/m

Conversion between dBmV/m (or dBmV) and mV/m (or mV) are as follows:

Level (dBmV/m) = 20 * Log (level (mV/m))

40 dBmV/m = 100 mV/m

48 dBmV/m = 250 mV/m

Restricted Bands of Operation (15.205)

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

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

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| | | | |
|-------------------|-----------|-------------|------------|
| 12.51975-12.52025 | 240-285 | 3345.8-3358 | 36.43-36.5 |
| 12.57675-12.57725 | 322-335.4 | 3600-4400 | Above 38.6 |
| 13.36-13.41 | | | |

(b) Except as provided in paragraphs (d) and (e) of this section, the field strength of emissions appearing within these frequency bands shall not exceed the limits shown in §15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in §15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in §15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in §15.35 apply to these measurements.

(c) Except as provided in paragraphs (d) and (e) of this section, regardless of the field strength limits specified elsewhere in this subpart, the provisions of this section apply to emissions from any intentional radiator.

(d) The following devices are exempt from the requirements of this section:

(1) Swept frequency field disturbance sensors operating between 1.705 and 37 MHz provided their emissions only sweep through the bands listed in paragraph (a) of this section, the sweep is never stopped with the fundamental emission within the bands listed in paragraph (a) of this section, and the fundamental emission is outside of the bands listed in paragraph (a) of this section more than 99% of the time the device is actively transmitting, without compensation for duty cycle.

(2) Transmitters used to detect buried electronic markers at 101.4 kHz which are employed by telephone companies.

(3) Cable locating equipment operated pursuant to §15.213.

(4) Any equipment operated under the provisions of §15.253, 15.255, and 15.256 in the frequency band 75-85 GHz, or §15.257 of this part.

(5) Biomedical telemetry devices operating under the provisions of §15.242 of this part are not subject to the restricted band 608-614 MHz but are subject to compliance within the other restricted bands.

(6) Transmitters operating under the provisions of subparts D or F of this part.

(7) Devices operated pursuant to §15.225 are exempt from complying with this section for the 13.36-13.41 MHz band only.

(8) Devices operated in the 24.075-24.175 GHz band under §15.245 are exempt from complying with the requirements of this section for the 48.15-48.35 GHz and 72.225-72.525 GHz bands only, and shall not exceed the limits specified in §15.245(b).

(9) Devices operated in the 24.0-24.25 GHz band under §15.249 are exempt from complying with the requirements of this section for the 48.0-48.5 GHz and 72.0-72.75 GHz bands only, and shall not exceed the limits specified in §15.249(a).

(e) Harmonic emissions appearing in the restricted bands above 17.7 GHz from field disturbance sensors operating under the provisions of §15.245 shall not exceed the limits specified in §15.245(b).



Title: Tarana Wireless AA2-CN65AFP
To: FCC CFR 47 Part 15 Subpart E 15.407
Serial #: TARA25-U3 Radiated Rev A
Issue Date: 15th December 2016
Page: 8 of 38

3.1.1. TX Spurious & Restricted Band Emissions

3.1.1.1. Tarana AA2-CN65AFP

Spurious emissions were performed in the 20MHz bandwidth channel configuration which represents the worst case producing the highest emissions.

Equipment Configuration for TX Spurious & Restricted Band Emissions

| | | | |
|---------------------------------|-----------------|------------------------|----------------------|
| Antenna: | Tarana Integral | Variant: | 20 Low Band |
| Antenna Gain (dBi): | 14.00 | Modulation: | 16QAM |
| Beam Forming Gain (Y): | Not Applicable | Duty Cycle (%): | 50 |
| Channel Frequency (MHz): | 5170.00 | Data Rate: | 16 QAM-2/4 55 MBit/s |
| Power Setting: | 5 | Tested By: | SB |

Test Measurement Results

| 1000.00 - 18000.00 MHz | | | | | | | | | | | | |
|------------------------|---------------|----------|---------------|--------|--------------|------------------|----------|--------|---------|--------------|-----------|------------|
| Num | Frequency MHz | Raw dBµV | Cable Loss dB | AF dB | Level dBµV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBµV/m | Margin dB | Pass /Fail |
| #1 | 5171.22 | 58.95 | 3.71 | -11.53 | 51.13 | Fundamental | Vertical | 101 | 242 | -- | -- | |
| #2 | 15644.05 | 46.83 | 6.00 | 0.04 | 52.87 | Peak (Scan) | Vertical | 101 | 242 | 74.0 | -21.1 | Pass |

Test Notes: SW Version-FCR.A2.XXX.AXX.4.000.002.01

In Reference to KDB 759532 spurious emission values were corrected for additional Transmitter Chains (8) and Duty Cycle Correction (50%) and it was found that there were no failing emissions present.

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Title: Tarana Wireless AA2-CN65AFP
To: FCC CFR 47 Part 15 Subpart E 15.407
Serial #: TARA25-U3 Radiated Rev A
Issue Date: 15th December 2016
Page: 9 of 38

Equipment Configuration for TX Spurious & Restricted Band Emissions

| | | | |
|---------------------------------|-----------------|------------------------|----------------------|
| Antenna: | Tarana Integral | Variant: | 20 Low Band |
| Antenna Gain (dBi): | 14.00 | Modulation: | 16QAM |
| Beam Forming Gain (Y): | Not Applicable | Duty Cycle (%): | 50 |
| Channel Frequency (MHz): | 5200.00 | Data Rate: | 16 QAM-2/4 55 MBit/s |
| Power Setting: | 5 | Tested By: | SB |

Test Measurement Results

| 1000.00 - 18000.00 MHz | | | | | | | | | | | | |
|--|---------------|----------|---------------|--------|--------------|------------------|----------|--------|---------|--------------|-----------|------------|
| Num | Frequency MHz | Raw dBμV | Cable Loss dB | AF dB | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
| #1 | 5201.52 | 54.02 | 3.66 | -11.46 | 46.22 | Fundamental | Vertical | 101 | 0 | -- | -- | |
| Test Notes: SW Version-FCR.A2.XXX.AXX.4.000.002.01 | | | | | | | | | | | | |

In Reference to KDB 759532 spurious emission values were corrected for additional Transmitter Chains (8) and Duty Cycle Correction (50%) and it was found that there were no failing emissions present.

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Title: Tarana Wireless AA2-CN65AFP
To: FCC CFR 47 Part 15 Subpart E 15.407
Serial #: TARA25-U3 Radiated Rev A
Issue Date: 15th December 2016
Page: 10 of 38

Equipment Configuration for TX Spurious & Restricted Band Emissions

| | | | |
|---------------------------------|-----------------|------------------------|----------------------|
| Antenna: | Tarana Integral | Variant: | 20 Low Band |
| Antenna Gain (dBi): | 14.00 | Modulation: | 16QAM |
| Beam Forming Gain (Y): | Not Applicable | Duty Cycle (%): | 50 |
| Channel Frequency (MHz): | 5240.00 | Data Rate: | 16 QAM-2/4 55 MBit/s |
| Power Setting: | 5 | Tested By: | SB |

Test Measurement Results

| 1000.00 - 18000.00 MHz | | | | | | | | | | | | |
|--|---------------|----------|---------------|--------|--------------|------------------|----------|--------|---------|--------------|-----------|------------|
| Num | Frequency MHz | Raw dBμV | Cable Loss dB | AF dB | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
| #1 | 5242.09 | 56.89 | 3.63 | -11.36 | 49.16 | Fundamental | Vertical | 101 | 0 | -- | -- | |
| Test Notes: SW Version-FCR.A2.XXX.AXX.4.000.002.01 | | | | | | | | | | | | |

In Reference to KDB 759532 spurious emission values were corrected for additional Transmitter Chains (8) and Duty Cycle Correction (50%) and it was found that there were no failing emissions present.

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Title: Tarana Wireless AA2-CN65AFP
To: FCC CFR 47 Part 15 Subpart E 15.407
Serial #: TARA25-U3 Radiated Rev A
Issue Date: 15th December 2016
Page: 11 of 38

| Equipment Configuration for TX Spurious & Restricted Band Emissions | | | |
|---|--|--|--|
|---|--|--|--|

| | | | |
|---------------------------------|-----------------|------------------------|----------------------|
| Antenna: | Tarana Integral | Variant: | 20 High Band |
| Antenna Gain (dBi): | 14.00 | Modulation: | 16QAM |
| Beam Forming Gain (Y): | Not Applicable | Duty Cycle (%): | 50 |
| Channel Frequency (MHz): | 5735.00 | Data Rate: | 16 QAM-2/4 55 MBit/s |
| Power Setting: | 5 | Tested By: | SB |

| Test Measurement Results |
|--------------------------|
|--------------------------|

| |
|--|
| Click here to view measurement data... |
|--|

| |
|--|
| Test Notes: SW Version-FCR.A2.XXX.AXX.4.000.002.01 |
|--|

In Reference to **KDB 759532** spurious emission values were corrected for additional Transmitter Chains (8) and Duty Cycle Correction (50%) and it was found that there were no failing emissions present.

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Title: Tarana Wireless AA2-CN65AFP
To: FCC CFR 47 Part 15 Subpart E 15.407
Serial #: TARA25-U3 Radiated Rev A
Issue Date: 15th December 2016
Page: 12 of 38

Equipment Configuration for TX Spurious & Restricted Band Emissions

| | | | |
|---------------------------------|-----------------|------------------------|----------------------|
| Antenna: | Tarana Integral | Variant: | 20 High Band |
| Antenna Gain (dBi): | 14.00 | Modulation: | 16QAM |
| Beam Forming Gain (Y): | Not Applicable | Duty Cycle (%): | 50 |
| Channel Frequency (MHz): | 5785.00 | Data Rate: | 16 QAM-2/4 55 MBit/s |
| Power Setting: | 5 | Tested By: | SB |

Test Measurement Results

| 1000.00 - 18000.00 MHz | | | | | | | | | | | | |
|--|---------------|----------|---------------|--------|--------------|------------------|----------|--------|---------|--------------|-----------|------------|
| Num | Frequency MHz | Raw dBμV | Cable Loss dB | AF dB | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
| #1 | 5786.44 | 58.24 | 3.79 | -10.44 | 51.59 | Fundamental | Vertical | 146 | 264 | -- | -- | |
| Test Notes: SW Version-FCR.A2.XXX.AXX.4.000.002.01 | | | | | | | | | | | | |

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Title: Tarana Wireless AA2-CN65AFP
To: FCC CFR 47 Part 15 Subpart E 15.407
Serial #: TARA25-U3 Radiated Rev A
Issue Date: 15th December 2016
Page: 13 of 38

Equipment Configuration for TX Spurious & Restricted Band Emissions

| | | | |
|---------------------------------|-----------------|------------------------|----------------------|
| Antenna: | Tarana Integral | Variant: | 20 High Band |
| Antenna Gain (dBi): | 14.00 | Modulation: | 16QAM |
| Beam Forming Gain (Y): | Not Applicable | Duty Cycle (%): | 50 |
| Channel Frequency (MHz): | 5835.00 | Data Rate: | 16 QAM-2/4 55 MBit/s |
| Power Setting: | 5 | Tested By: | SB |

Test Measurement Results

| 1000.00 - 18000.00 MHz | | | | | | | | | | | | |
|--|---------------|----------|---------------|--------|--------------|------------------|----------|--------|---------|--------------|-----------|------------|
| Num | Frequency MHz | Raw dBμV | Cable Loss dB | AF dB | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
| #1 | 5836.12 | 54.86 | 3.85 | -10.21 | 48.50 | Fundamental | Vertical | 115 | 249 | -- | -- | |
| Test Notes: SW Version-FCR.A2.XXX.AXX.4.000.002.01 | | | | | | | | | | | | |

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3.1.2. Restricted Edge & Band-Edge Emissions

3.1.2.2. Tarana Integral

RESULTS SUMMARY FOR RADIATED BAND-EDGE EMISSIONS

5150 - 5250 MHz

| Tarana Integral | | Band-Edge Freq | Limit 74.0dBµV/m | Limit 54.0dBµV/m | Power Setting |
|------------------|---------------------------|----------------|------------------|------------------|---------------|
| Operational Mode | Operating Frequency (MHz) | MHz | dBµV/m | dBµV/m | |
| 20 Low Band | 5170.00 | 5150.00 | 55.99 | 41.87 | 14 |
| 40 Low Band | 5180.00 | 5150.00 | 56.16 | 41.87 | 14 |

5725 MHz Radiated Lower Band-Edge Emissions

| Tarana Integral | | Band-Edge Freq | | Power Setting |
|------------------|---------------------------|----------------|--------|---------------|
| Operational Mode | Operating Frequency (MHz) | MHz | dBµV/m | |
| 20 High Band | 5725.00 | 5725.00 | 43.31 | 5 |
| 40 High Band | 5725.00 | 5725.00 | 43.31 | 8.5 |

5850 MHz Radiated Higher Band-Edge Emissions

| Tarana Integral | | Band-Edge Freq | | Power Setting |
|------------------|---------------------------|----------------|--------|---------------|
| Operational Mode | Operating Frequency (MHz) | MHz | dBµV/m | |
| 20 High Band | 5850.00 | 5850.00 | 44.35 | 5 |
| 40 High Band | 5850.00 | 5850.00 | 44.37 | 8 |

Click on the links to view the data.



Title: Tarana Wireless AA2-CN65AFP
To: FCC CFR 47 Part 15 Subpart E 15.407
Serial #: TARA25-U3 Radiated Rev A
Issue Date: 15th December 2016
Page: 15 of 38

Equipment Configuration for Restricted Lower Band-Edge Emissions

| | | | |
|---------------------------------|-----------------|------------------------|----------------------|
| Antenna: | Tarana Integral | Variant: | 20 Low Band |
| Antenna Gain (dBi): | 14.00 | Modulation: | 16QAM |
| Beam Forming Gain (Y): | Not Applicable | Duty Cycle (%): | 50 |
| Channel Frequency (MHz): | 5170.00 | Data Rate: | 16 QAM-2/4 55 MBit/s |
| Power Setting: | 14 | Tested By: | SB |

Test Measurement Results

| 4475.00 - 5175.00 MHz | | | | | | | | | | | | |
|--|---------------|----------|---------------|-------|--------------|------------------|----------|--------|---------|--------------|-----------|------------|
| Num | Frequency MHz | Raw dBμV | Cable Loss dB | AF dB | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
| #1 | 5150.00 | 4.09 | 3.67 | 34.11 | 41.87 | Max Avg | Vertical | 175 | 273 | 54.0 | -12.1 | Pass |
| #2 | 5150.00 | 18.21 | 3.67 | 34.11 | 55.99 | Max Peak | Vertical | 175 | 273 | 74.0 | -18.0 | Pass |
| #3 | 5150.00 | -- | -- | -- | -- | Restricted-Band | -- | -- | -- | -- | -- | -- |
| Test Notes: SW Version-FCR.A2.XXX.AXX.4.000.002.01 | | | | | | | | | | | | |

In Reference to **KDB 759532** spurious emission values were corrected for additional Transmitter Chains (8) and Duty Cycle Correction (50%)

| 4475.00 - 5175.00 MHz | | | | | | | | |
|--|---------------|-------------------|-------------|------------------|-------------------|----------|-----------|------------|
| Num | Frequency MHz | Level dBμV/m @ 3m | Level uW ** | Measurement Type | Limit dBμV/m @ 3m | Limit uW | Margin uW | Pass /Fail |
| #1 | 5150.00 | 41.87 | 0.0736 | Max Avg | 54.0 | 0.0753 | -0.0017 | Pass |
| #2 | 5150.00 | 55.99 | 1.9056 | Max Peak | 74.0 | 7.5356 | -5.63 | Pass |
| Test Notes: SW Version-FCR.A2.XXX.AXX.4.000.002.01 | | | | | | | | |

**** $(\text{Emission Level (uW)} \times \# \text{ of Transmitter Chains}) + \text{Duty Cycle} = \text{Emission Level (uW)}$**

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Title: Tarana Wireless AA2-CN65AFP
To: FCC CFR 47 Part 15 Subpart E 15.407
Serial #: TARA25-U3 Radiated Rev A
Issue Date: 15th December 2016
Page: 16 of 38

Equipment Configuration for Restricted Lower Band-Edge Emissions

| | | | |
|---------------------------------|-----------------|------------------------|----------------------|
| Antenna: | Tarana Integral | Variant: | 40 Low Band |
| Antenna Gain (dBi): | 14.00 | Modulation: | 16QAM |
| Beam Forming Gain (Y): | Not Applicable | Duty Cycle (%): | 50 |
| Channel Frequency (MHz): | 5180.00 | Data Rate: | 16 QAM-2/4 55 MBit/s |
| Power Setting: | 14 | Tested By: | SB |

Test Measurement Results

| 4475.00 - 5175.00 MHz | | | | | | | | | | | | |
|--|---------------|----------|---------------|-------|--------------|------------------|----------|--------|---------|--------------|-----------|------------|
| Num | Frequency MHz | Raw dBμV | Cable Loss dB | AF dB | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
| #1 | 5047.60 | 18.32 | 3.64 | 34.20 | 56.16 | Max Peak | Vertical | 175 | 273 | 74.0 | -17.8 | Pass |
| #2 | 5150.00 | 4.09 | 3.67 | 34.11 | 41.87 | Max Avg | Vertical | 175 | 273 | 54.0 | -12.1 | Pass |
| #3 | 5150.00 | -- | -- | -- | -- | Restricted-Band | -- | -- | -- | -- | -- | -- |
| Test Notes: SW Version-FCR.A2.XXX.AXX.4.000.002.01 | | | | | | | | | | | | |

In Reference to **KDB 759532** spurious emission values were corrected for additional Transmitter Chains (8) and Duty Cycle Correction (50%)

| 4475.00 - 5175.00 MHz | | | | | | | | |
|--|---------------|-------------------|-------------|------------------|-------------------|----------|-----------|------------|
| Num | Frequency MHz | Level dBμV/m @ 3m | Level uW ** | Measurement Type | Limit dBμV/m @ 3m | Limit uW | Margin uW | Pass /Fail |
| #1 | 5150.00 | 41.87 | 0.0736 | Max Avg | 54.0 | 0.0753 | -0.0017 | Pass |
| #2 | 5047.60 | 56.16 | 1.9824 | Max Peak | 74.0 | 7.5356 | -5.5532 | Pass |
| Test Notes: SW Version-FCR.A2.XXX.AXX.4.000.002.01 | | | | | | | | |

**** (Emission Level (uW) × # of Transmitter Chains) + Duty Cycle = Emission Level (uW)**

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Title: Tarana Wireless AA2-CN65AFP
To: FCC CFR 47 Part 15 Subpart E 15.407
Serial #: TARA25-U3 Radiated Rev A
Issue Date: 15th December 2016
Page: 17 of 38

Equipment Configuration for 5725 MHz Radiated Band-Edge Emissions

| | | | |
|---------------------------------|-----------------|------------------------|----------------------|
| Antenna: | Tarana Integral | Variant: | 20 High Band |
| Antenna Gain (dBi): | 14.00 | Modulation: | 16QAM |
| Beam Forming Gain (Y): | Not Applicable | Duty Cycle (%): | 50 |
| Channel Frequency (MHz): | 5735.00 | Data Rate: | 16 QAM-2/4 55 MBit/s |
| Power Setting: | 5 | Tested By: | SB |

Test Measurement Results

5550.00 - 5755.00 MHz

| Num | Frequency MHz | Raw dBμV | Cable Loss dB | AF dB | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|-----|---------------|----------|---------------|-------|--------------|------------------|----------|--------|---------|--------------|-----------|------------|
| #1 | 5651.05 | 5.37 | 3.76 | 34.18 | 43.31 | Max Avg | Vertical | 175 | 273 | 68.9 | -25.6 | Pass |
| #2 | 5725.00 | -- | -- | -- | -- | Band-Edge | -- | -- | -- | -- | -- | -- |

Test Notes: SW Version-FCR.A2.XXX.AXX.4.000.002.01

In Reference to **KDB 759532** spurious emission values were corrected for additional Transmitter Chains (8) and Duty Cycle Correction (50%)

4475.00 - 5175.00 MHz

| Num | Frequency MHz | Level dBμV/m @ 3m | Level uW ** | Measurement Type | Limit dBμV/m @ 3m | Limit uW | Margin uW | Pass /Fail |
|-----|---------------|-------------------|-------------|------------------|-------------------|----------|-----------|------------|
| #1 | 5651.05 | 43.31 | 0.1024 | Max Avg | 68.9 | 1.9958 | -1.8934 | Pass |

Test Notes: SW Version-FCR.A2.XXX.AXX.4.000.002.01

$$**(Emission Level (uW) \times \# of Transmitter Chains) + Duty Cycle = Emission Level (uW)$$

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Title: Tarana Wireless AA2-CN65AFP
To: FCC CFR 47 Part 15 Subpart E 15.407
Serial #: TARA25-U3 Radiated Rev A
Issue Date: 15th December 2016
Page: 18 of 38

Equipment Configuration for 5725 MHz Radiated Band-Edge Emissions

| | | | |
|---------------------------------|-----------------|------------------------|----------------------|
| Antenna: | Tarana Integral | Variant: | 40 High Band |
| Antenna Gain (dBi): | 14.00 | Modulation: | 16QAM |
| Beam Forming Gain (Y): | Not Applicable | Duty Cycle (%): | 50 |
| Channel Frequency (MHz): | 5745.00 | Data Rate: | 16 QAM-2/4 55 MBit/s |
| Power Setting: | 8.5 | Tested By: | SB |

Test Measurement Results

5550.00 - 5755.00 MHz

| Num | Frequency MHz | Raw dBμV | Cable Loss dB | AF dB | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|-----|---------------|----------|---------------|-------|--------------|------------------|----------|--------|---------|--------------|-----------|------------|
| #1 | 5649.41 | 5.38 | 3.75 | 34.18 | 43.31 | Max Avg | Vertical | 175 | 273 | 68.2 | -24.9 | Pass |
| #2 | 5725.00 | -- | -- | -- | -- | Band-Edge | -- | -- | -- | -- | -- | -- |

Test Notes: SW Version-FCR.A2.XXX.AXX.4.000.002.01

In Reference to **KDB 759532** spurious emission values were corrected for additional Transmitter Chains (8) and Duty Cycle Correction (50%)

4475.00 - 5175.00 MHz

| Num | Frequency MHz | Level dBμV/m @ 3m | Level uW ** | Measurement Type | Limit dBμV/m @ 3m | Limit uW | Margin uW | Pass /Fail |
|-----|---------------|-------------------|-------------|------------------|-------------------|----------|-----------|------------|
| #1 | 5649.41 | 43.31 | 0.1024 | Max Avg | 68.9 | 1.9958 | -1.8934 | Pass |

Test Notes: SW Version-FCR.A2.XXX.AXX.4.000.002.01

$$**(Emission Level (uW) \times \# of Transmitter Chains) + Duty Cycle = Emission Level (uW)$$

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Title: Tarana Wireless AA2-CN65AFP
To: FCC CFR 47 Part 15 Subpart E 15.407
Serial #: TARA25-U3 Radiated Rev A
Issue Date: 15th December 2016
Page: 19 of 38

Equipment Configuration for 5850 MHz Radiated Band-Edge Emissions

| | | | |
|---------------------------------|-----------------|------------------------|----------------------|
| Antenna: | Tarana Integral | Variant: | 20 High Band |
| Antenna Gain (dBi): | 14.00 | Modulation: | 16QAM |
| Beam Forming Gain (Y): | Not Applicable | Duty Cycle (%): | 50 |
| Channel Frequency (MHz): | 5835.00 | Data Rate: | 16 QAM-2/4 55 MBit/s |
| Power Setting: | 5 | Tested By: | SB |

Test Measurement Results

5800.00 - 6000.00 MHz

| Num | Frequency MHz | Raw dBμV | Cable Loss dB | AF dB | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|-----|---------------|----------|---------------|-------|--------------|------------------|----------|--------|---------|--------------|-----------|------------|
| #2 | 5930.96 | 5.67 | 3.84 | 34.84 | 44.35 | Max Avg | Vertical | 175 | 273 | 68.2 | -23.9 | Pass |
| #1 | 5850.00 | -- | -- | -- | -- | Band-Edge | -- | -- | -- | -- | -- | -- |

Test Notes: SW Version-FCR.A2.XXX.AXX.4.000.002.01

In Reference to **KDB 759532** spurious emission values were corrected for additional Transmitter Chains (8) and Duty Cycle Correction (50%)

4475.00 - 5175.00 MHz

| Num | Frequency MHz | Level dBμV/m @ 3m | Level uW ** | Measurement Type | Limit dBμV/m @ 3m | Limit uW | Margin uW | Pass /Fail |
|-----|---------------|-------------------|-------------|------------------|-------------------|----------|-----------|------------|
| #2 | 5930.96 | 44.35 | 0.1296 | Max Avg | 68.9 | 1.9958 | -1.8662 | Pass |

Test Notes: SW Version-FCR.A2.XXX.AXX.4.000.002.01

**** $(\text{Emission Level (uW)} \times \text{\# of Transmitter Chains}) + \text{Duty Cycle} = \text{Emission Level (uW)}$**

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Title: Tarana Wireless AA2-CN65AFP
To: FCC CFR 47 Part 15 Subpart E 15.407
Serial #: TARA25-U3 Radiated Rev A
Issue Date: 15th December 2016
Page: 20 of 38

Equipment Configuration for 5850 MHz Radiated Band-Edge Emissions

| | | | |
|---------------------------------|-----------------|------------------------|----------------------|
| Antenna: | Tarana Integral | Variant: | 40 High Band |
| Antenna Gain (dBi): | 14.00 | Modulation: | 16QAM |
| Beam Forming Gain (Y): | Not Applicable | Duty Cycle (%): | 50 |
| Channel Frequency (MHz): | 5825.00 | Data Rate: | 16 QAM-2/4 55 MBit/s |
| Power Setting: | 8 | Tested By: | SB |

Test Measurement Results

5800.00 - 6000.00 MHz

| Num | Frequency MHz | Raw dBμV | Cable Loss dB | AF dB | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|-----|---------------|----------|---------------|-------|--------------|------------------|----------|--------|---------|--------------|-----------|------------|
| #2 | 5942.18 | 5.64 | 3.87 | 34.86 | 44.37 | Max Avg | Vertical | 175 | 273 | 68.2 | -23.9 | Pass |
| #1 | 5850.00 | -- | -- | -- | -- | Band-Edge | -- | -- | -- | -- | -- | -- |

Test Notes: SW Version-FCR.A2.XXX.AXX.4.000.002.01

In Reference to **KDB 759532** spurious emission values were corrected for additional Transmitter Chains (8) and Duty Cycle Correction (50%)

4475.00 - 5175.00 MHz

| Num | Frequency MHz | Level dBμV/m @ 3m | Level uW ** | Measurement Type | Limit dBμV/m @ 3m | Limit uW | Margin uW | Pass /Fail |
|-----|---------------|-------------------|-------------|------------------|-------------------|----------|-----------|------------|
| #2 | 5942.18 | 44.37 | 0.1312 | Max Avg | 68.9 | 1.9958 | -1.8646 | Pass |

Test Notes: SW Version-FCR.A2.XXX.AXX.4.000.002.01

****(*Emission Level (uW) × # of Transmitter Chains*) + Duty Cycle = Emission Level (uW)**

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Title: Tarana Wireless AA2-CN65AFP
To: FCC CFR 47 Part 15 Subpart E 15.407
Serial #: TARA25-U3 Radiated Rev A
Issue Date: 15th December 2016
Page: 21 of 38

3.1.3. Digital Emissions

Equipment Configuration for Digital Emissions

| | | | |
|---------------------------------|--------------------------------------|------------------------|----------------------|
| Antenna: | Tarana Integral | Variant: | 20 Low Band |
| Antenna Gain (dBi): | 14.00 | Modulation: | 16QAM |
| Beam Forming Gain (Y): | Not Applicable | Duty Cycle (%): | 50 |
| Channel Frequency (MHz): | 5170.00 | Data Rate: | 16 QAM-2/4 55 MBit/s |
| Power Setting: | 5 | Tested By: | SB |
| Test Notes: | AC/DC Adapter: MEAN WELL HLG-150H-54 | | |

Test Measurement Results



DIGITAL EMISSIONS

Variant: 20 Low Band, Test Freq: 5170.00 MHz, Antenna: Tarana Integral, Power Setting: 5, Duty Cycle (%): 50



30.00 - 1000.00 MHz

| Num | Frequency MHz | Raw dBμV | Cable Loss dB | AF dB | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|-----|---------------|----------|---------------|--------|--------------|------------------|------------|--------|---------|--------------|-----------|------------|
| 1 | 37.83 | 44.46 | 3.48 | -16.06 | 31.88 | MaxQP | Vertical | 100 | 193 | 40.0 | -8.1 | Pass |
| 2 | 197.41 | 44.31 | 4.33 | -18.66 | 29.98 | MaxQP | Vertical | 100 | 346 | 43.0 | -13.0 | Pass |
| 3 | 197.41 | 49.02 | 4.33 | -18.66 | 34.69 | Peak (NRB) | Vertical | 100 | 1 | -- | -- | Pass |
| 4 | 360.08 | 48.27 | 4.90 | -15.38 | 37.79 | MaxQP | Horizontal | 100 | 3 | 46.0 | -8.2 | Pass |

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Title: Tarana Wireless AA2-CN65AFP
To: FCC CFR 47 Part 15 Subpart E 15.407
Serial #: TARA25-U3 Radiated Rev A
Issue Date: 15th December 2016
Page: 22 of 38

| | | | | | | | | | | | | |
|----|--------|-------|------|--------|-------|------------|------------|-----|-----|------|------|------|
| 5 | 360.08 | 50.48 | 4.90 | -15.38 | 40.00 | Peak (NRB) | Horizontal | 100 | 1 | -- | -- | Pass |
| 6 | 537.59 | 42.66 | 5.42 | -12.14 | 35.94 | Peak (NRB) | Vertical | 100 | 1 | -- | -- | Pass |
| 7 | 537.59 | 51.09 | 5.42 | -12.14 | 44.37 | MaxQP | Vertical | 113 | 64 | 46.0 | -1.6 | Pass |
| 8 | 537.63 | 45.78 | 5.42 | -12.14 | 39.06 | MaxQP | Horizontal | 100 | 222 | 46.0 | -6.9 | Pass |
| 9 | 537.63 | 43.96 | 5.42 | -12.14 | 37.24 | Peak (NRB) | Horizontal | 100 | 1 | -- | -- | Pass |
| 10 | 895.99 | 42.43 | 6.32 | -8.04 | 40.71 | MaxQP | Horizontal | 103 | 66 | 46.0 | -5.3 | Pass |
| 11 | 895.99 | 42.45 | 6.32 | -8.04 | 40.73 | Peak (NRB) | Horizontal | 100 | 1 | -- | -- | Pass |

Test Notes: AC/DC Adapter with laptop on the table (lid is closed support equipment)

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Title: Tarana Wireless AA2-CN65AFP
To: FCC CFR 47 Part 15 Subpart E 15.407
Serial #: TARA25-U3 Radiated Rev A
Issue Date: 15th December 2016
Page: 23 of 38

Equipment Configuration for Digital Emissions

| | | | |
|---------------------------------|-----------------------------|------------------------|----------------------|
| Antenna: | Tarana Integral | Variant: | 16 QAM |
| Antenna Gain (dBi): | 14.00 | Modulation: | 16QAM |
| Beam Forming Gain (Y): | Not Applicable | Duty Cycle (%): | 50 |
| Channel Frequency (MHz): | 5170.00 | Data Rate: | 16 QAM-2/4 55 MBit/s |
| Power Setting: | 5 | Tested By: | SB |
| Test Notes: | Tarana outdoor POE Injector | | |

Test Measurement Results



DIGITAL EMISSIONS

Variant: 16 QAM, Test Freq: 5170.00 MHz, Antenna: Tarana Integral, Power Setting: 5, Duty Cycle (%): 50



30.00 - 1000.00 MHz

| Num | Frequency MHz | Raw dBμV | Cable Loss dB | AF dB | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|-----|---------------|----------|---------------|--------|--------------|------------------|------------|--------|---------|--------------|-----------|------------|
| 1 | 48.09 | 51.91 | 3.56 | -22.34 | 33.13 | MaxQP | Vertical | 100 | 257 | 40.0 | -6.9 | Pass |
| 2 | 48.09 | 52.91 | 3.56 | -22.34 | 34.13 | Peak (NRB) | Vertical | 100 | 1 | -- | -- | Pass |
| 3 | 118.22 | 46.99 | 3.97 | -17.70 | 33.26 | MaxQP | Vertical | 100 | 228 | 43.0 | -9.7 | Pass |
| 4 | 360.24 | 46.03 | 4.90 | -15.38 | 35.55 | MaxQP | Horizontal | 100 | 0 | 46.0 | -10.5 | Pass |
| 5 | 360.24 | 48.01 | 4.90 | -15.38 | 37.53 | Peak (NRB) | Horizontal | 100 | 1 | -- | -- | Pass |
| 6 | 537.63 | 46.89 | 5.42 | -12.14 | 40.17 | MaxQP | Vertical | 105 | 59 | 46.0 | -5.8 | Pass |

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Title: Tarana Wireless AA2-CN65AFP
To: FCC CFR 47 Part 15 Subpart E 15.407
Serial #: TARA25-U3 Radiated Rev A
Issue Date: 15th December 2016
Page: 24 of 38

| | | | | | | | | | | | | |
|----|--------|-------|------|--------|-------|------------|------------|-----|-----|------|------|------|
| 7 | 537.63 | 44.29 | 5.42 | -12.14 | 37.57 | MaxQP | Horizontal | 271 | 213 | 46.0 | -8.4 | Pass |
| 8 | 537.63 | 43.32 | 5.42 | -12.14 | 36.60 | Peak (NRB) | Vertical | 100 | 1 | -- | -- | Pass |
| 9 | 537.63 | 40.67 | 5.42 | -12.14 | 33.95 | Peak (NRB) | Horizontal | 100 | 1 | -- | -- | Pass |
| 10 | 627.21 | 45.83 | 5.68 | -10.95 | 40.56 | MaxQP | Horizontal | 100 | 191 | 46.0 | -5.4 | Pass |
| 11 | 627.21 | 45.78 | 5.68 | -10.95 | 40.51 | Peak (NRB) | Horizontal | 100 | 1 | -- | -- | Pass |

Test Notes: AC/DC Adapter with POE and laptop on the table (lid is closed support equipment)

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Title: Tarana Wireless AA2-CN65AFP
To: FCC CFR 47 Part 15 Subpart E 15.407
Serial #: TARA25-U3 Radiated Rev A
Issue Date: 15th December 2016
Page: 25 of 38

A. APPENDIX - GRAPHICAL IMAGES

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Title: Tarana Wireless AA2-CN65AFP
To: FCC CFR 47 Part 15 Subpart E 15.407
Serial #: TARA25-U3 Radiated Rev A
Issue Date: 15th December 2016
Page: 26 of 38

A.1. Radiated

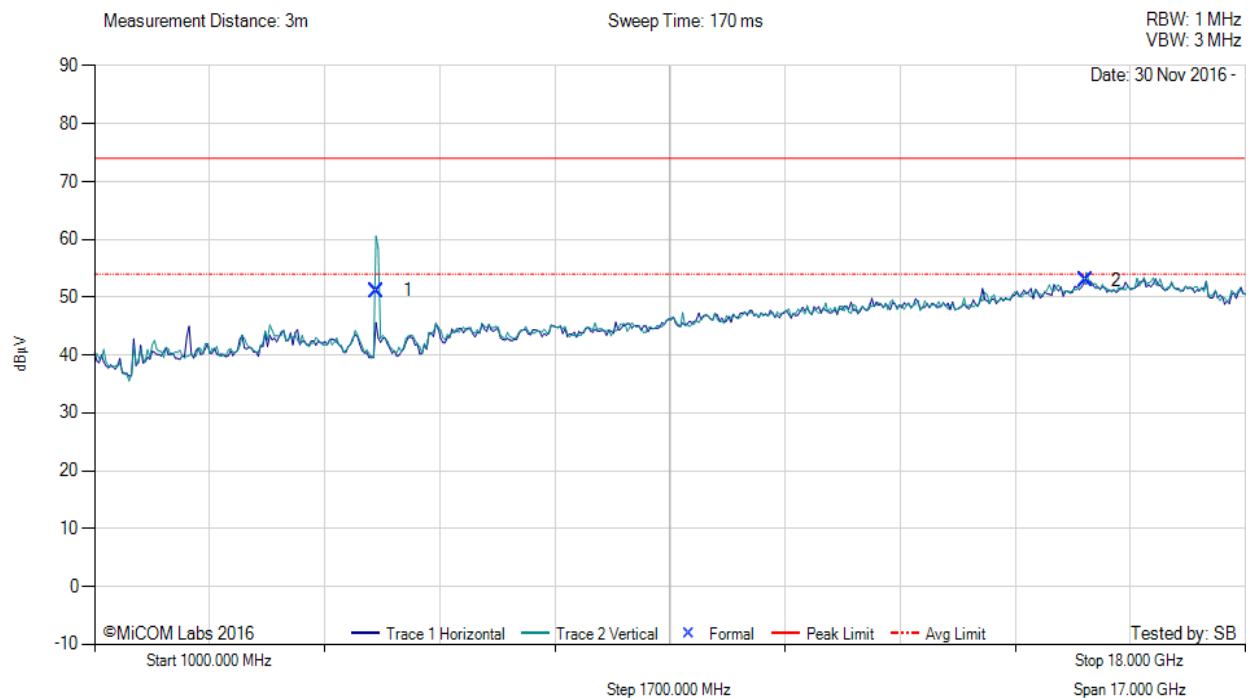
A.1.1. TX Spurious & Restricted Band Emissions

A.1.1.1. Tarana Integral



TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: 20 Low Band, Test Freq: 5170.00 MHz, Antenna: Tarana Integral, Power Setting: 5, Duty Cycle (%): 50



| 1000.00 - 18000.00 MHz | | | | | | | | | | | | |
|------------------------|---------------|----------|---------------|--------|--------------|------------------|----------|--------|---------|--------------|-----------|------------|
| Num | Frequency MHz | Raw dBμV | Cable Loss dB | AF dB | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
| 1 | 5171.22 | 58.95 | 3.71 | -11.53 | 51.13 | Fundamental | Vertical | 101 | 242 | -- | -- | |
| 2 | 15644.05 | 46.83 | 6.00 | 0.04 | 52.87 | Peak (Scan) | Vertical | 101 | 242 | 74.0 | -21.1 | Pass |

Test Notes: SW Version-FCR.A2.XXX.AXX.4.000.002.01

[back to matrix](#)

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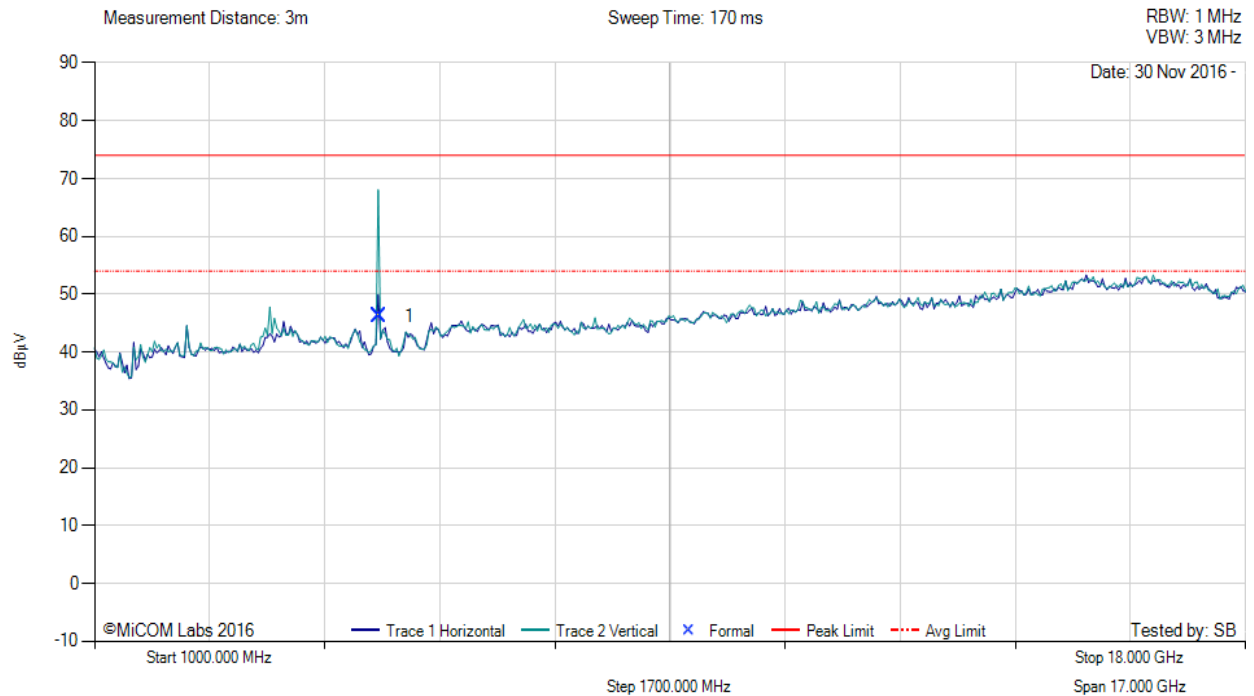


Title: Tarana Wireless AA2-CN65AFP
To: FCC CFR 47 Part 15 Subpart E 15.407
Serial #: TARA25-U3 Radiated Rev A
Issue Date: 15th December 2016
Page: 27 of 38



TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: 20 Low Band, Test Freq: 5200.00 MHz, Antenna: Tarana Integral, Power Setting: 5, Duty Cycle (%): 50



| 1000.00 - 18000.00 MHz | | | | | | | | | | | | |
|--|---------------|----------|---------------|--------|--------------|------------------|----------|--------|---------|--------------|-----------|------------|
| Num | Frequency MHz | Raw dBμV | Cable Loss dB | AF dB | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
| 1 | 5201.52 | 54.02 | 3.66 | -11.46 | 46.22 | Fundamental | Vertical | 101 | 0 | -- | -- | |
| Test Notes: SW Version-FCR.A2.XXX.AXX.4.000.002.01 | | | | | | | | | | | | |

[back to matrix](#)

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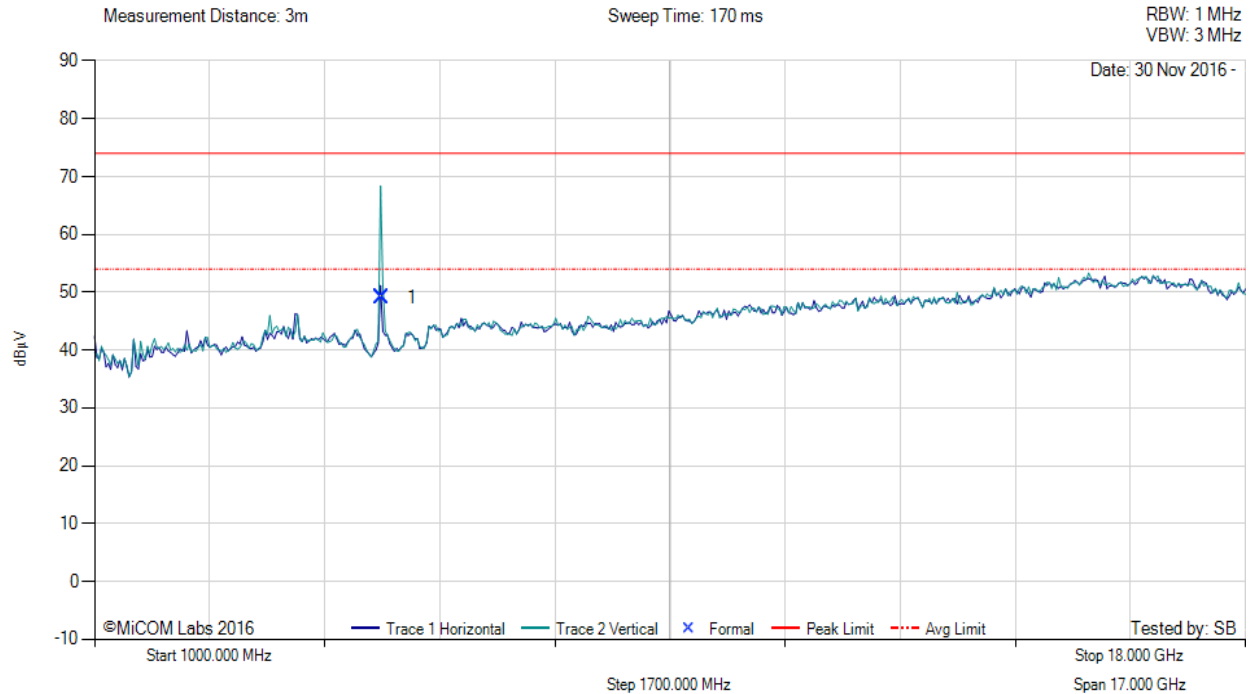


Title: Tarana Wireless AA2-CN65AFP
To: FCC CFR 47 Part 15 Subpart E 15.407
Serial #: TARA25-U3 Radiated Rev A
Issue Date: 15th December 2016
Page: 28 of 38



TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: 20 Low Band, Test Freq: 5240.00 MHz, Antenna: Tarana Integral, Power Setting: 5, Duty Cycle (%): 50



| 1000.00 - 18000.00 MHz | | | | | | | | | | | | |
|--|---------------|----------|---------------|--------|--------------|------------------|----------|--------|---------|--------------|-----------|------------|
| Num | Frequency MHz | Raw dBμV | Cable Loss dB | AF dB | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
| 1 | 5242.09 | 56.89 | 3.63 | -11.36 | 49.16 | Fundamental | Vertical | 101 | 0 | -- | -- | |
| Test Notes: SW Version-FCR.A2.XXX.AXX.4.000.002.01 | | | | | | | | | | | | |

[back to matrix](#)

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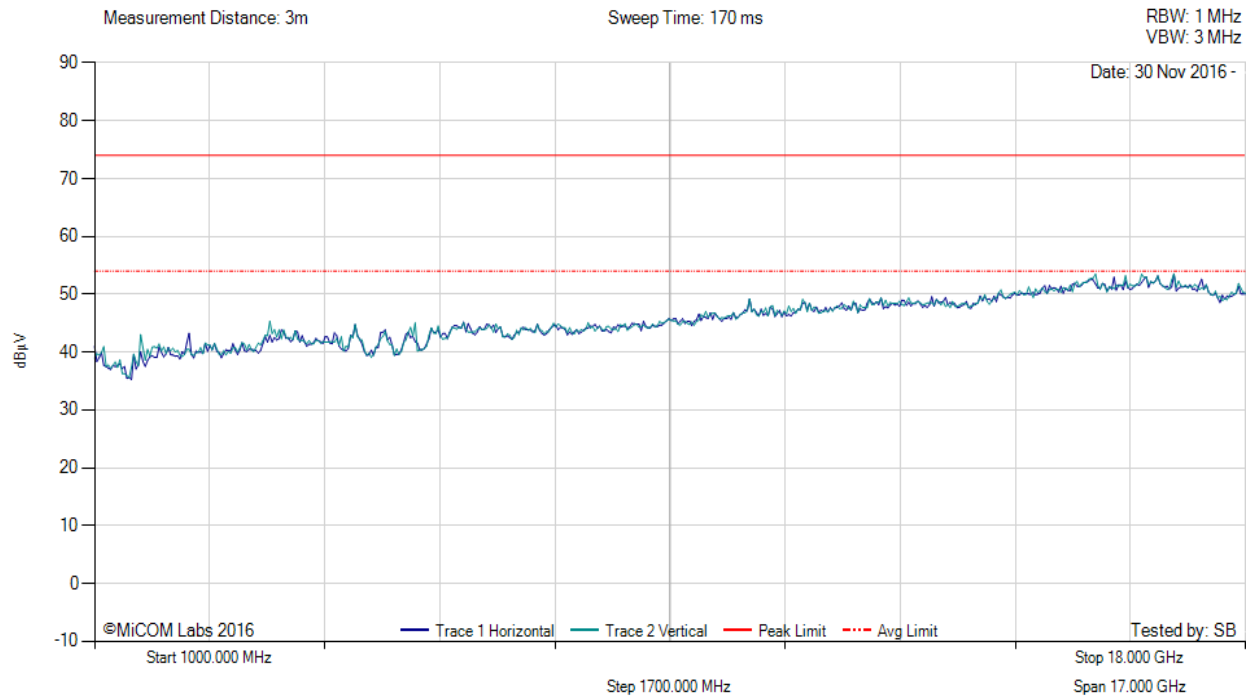


Title: Tarana Wireless AA2-CN65AFP
To: FCC CFR 47 Part 15 Subpart E 15.407
Serial #: TARA25-U3 Radiated Rev A
Issue Date: 15th December 2016
Page: 29 of 38



TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: 20 High Band, Test Freq: 5735.00 MHz, Antenna: Tarana Integral, Power Setting: 5, Duty Cycle (%): 50



There are no emissions found within 6dB of the limit line.

Test Notes: SW Version-FCR.A2.XXX.AXX.4.000.002.01

[back to matrix](#)

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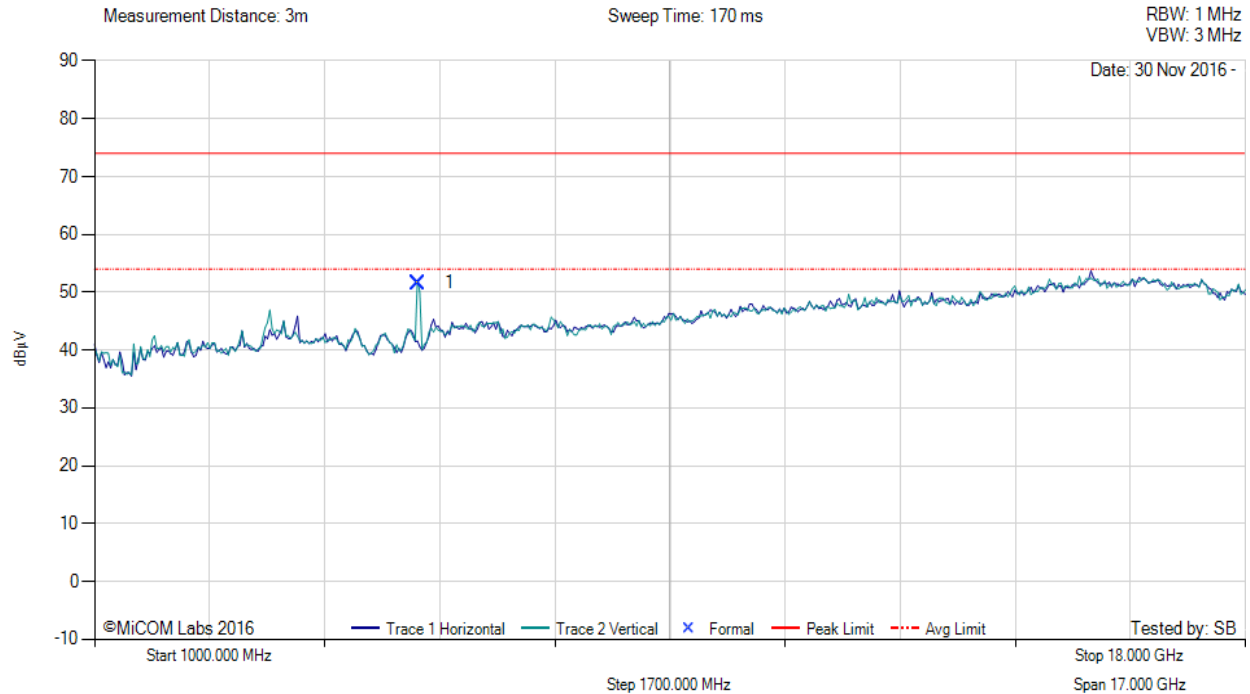


Title: Tarana Wireless AA2-CN65AFP
To: FCC CFR 47 Part 15 Subpart E 15.407
Serial #: TARA25-U3 Radiated Rev A
Issue Date: 15th December 2016
Page: 30 of 38



TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: 20 High Band, Test Freq: 5785.00 MHz, Antenna: Tarana Integral, Power Setting: 5, Duty Cycle (%): 50



| 1000.00 - 18000.00 MHz | | | | | | | | | | | | |
|--|---------------|----------|---------------|--------|--------------|------------------|----------|--------|---------|--------------|-----------|------------|
| Num | Frequency MHz | Raw dBμV | Cable Loss dB | AF dB | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
| 1 | 5786.44 | 58.24 | 3.79 | -10.44 | 51.59 | Fundamental | Vertical | 146 | 264 | -- | -- | |
| Test Notes: SW Version-FCR.A2.XXX.AXX.4.000.002.01 | | | | | | | | | | | | |

[back to matrix](#)

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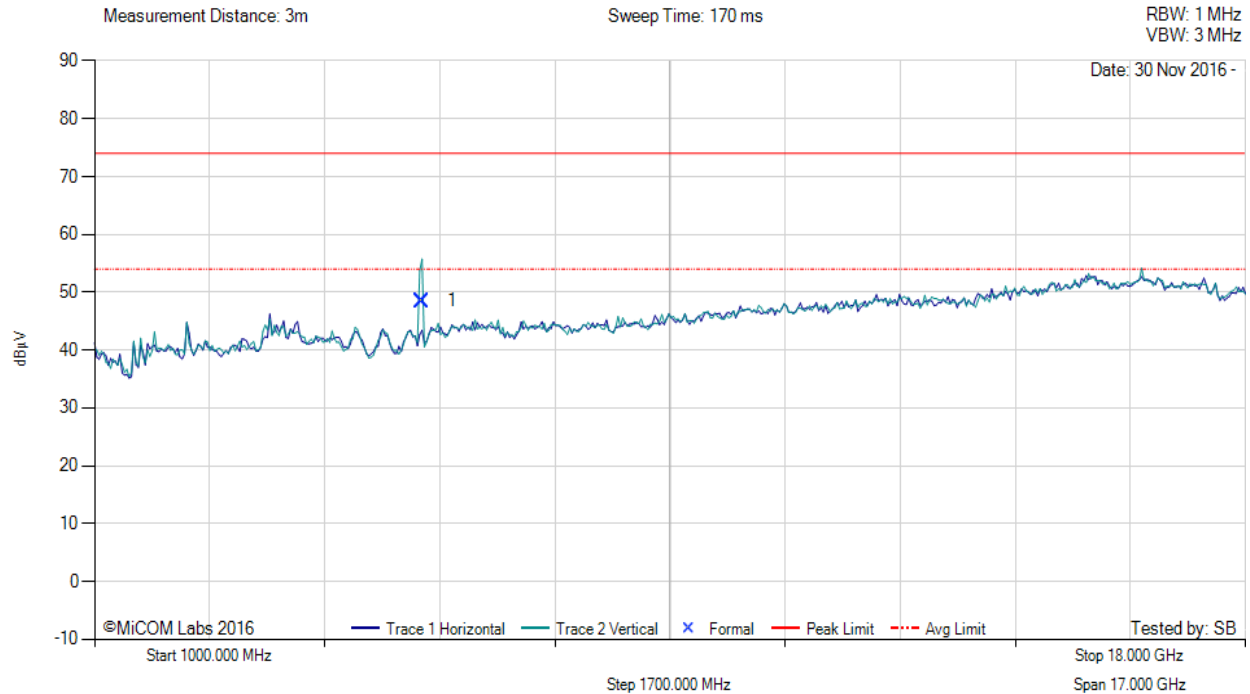


Title: Tarana Wireless AA2-CN65AFP
To: FCC CFR 47 Part 15 Subpart E 15.407
Serial #: TARA25-U3 Radiated Rev A
Issue Date: 15th December 2016
Page: 31 of 38



TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: 20 High Band, Test Freq: 5835.00 MHz, Antenna: Tarana Integral, Power Setting: 5, Duty Cycle (%): 50



| 1000.00 - 18000.00 MHz | | | | | | | | | | | | |
|--|---------------|----------|---------------|--------|--------------|------------------|----------|--------|---------|--------------|-----------|------------|
| Num | Frequency MHz | Raw dBμV | Cable Loss dB | AF dB | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
| 1 | 5836.12 | 54.86 | 3.85 | -10.21 | 48.50 | Fundamental | Vertical | 115 | 249 | -- | -- | |
| Test Notes: SW Version-FCR.A2.XXX.AXX.4.000.002.01 | | | | | | | | | | | | |

[back to matrix](#)

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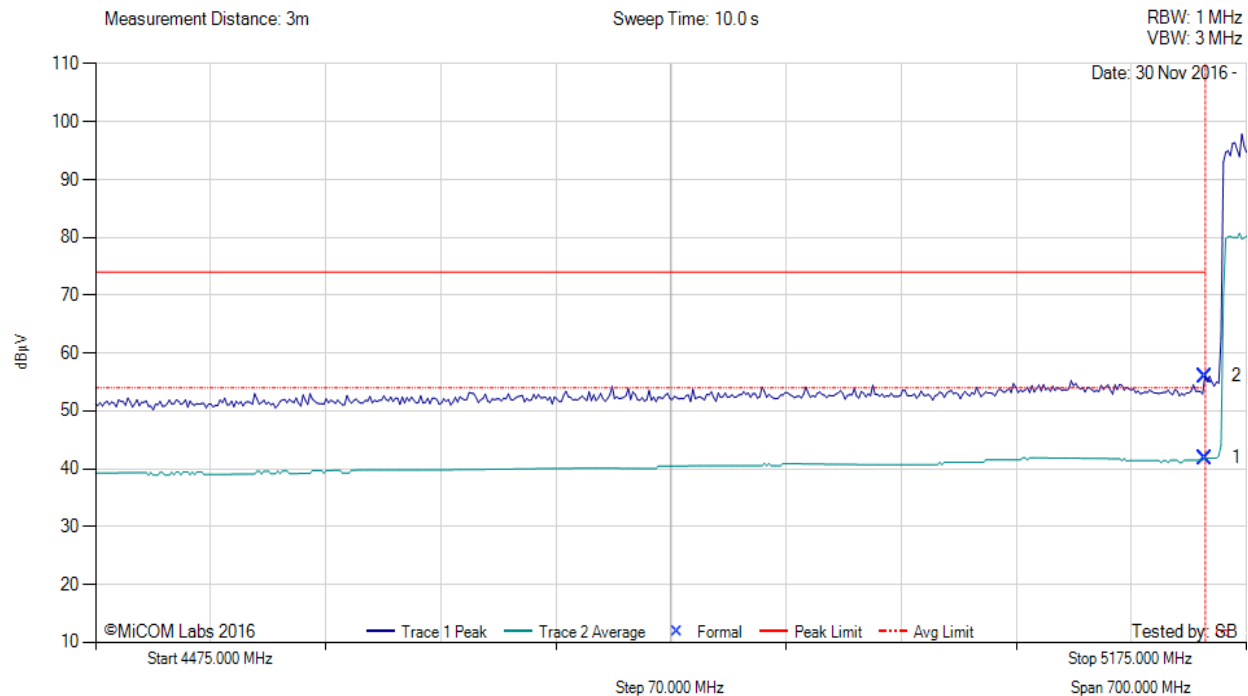
A.1.2. Restricted Edge & Band-Edge Emissions

A.1.2.2. Tarana Integral



RESTRICTED LOWER BAND-EDGE EMISSIONS

Variant: 20 Low Band, Test Freq: 5170.00 MHz, Antenna: Tarana Integral, Power Setting: 14, Duty Cycle (%): 50



| 4475.00 - 5175.00 MHz | | | | | | | | | | | | |
|-----------------------|---------------|----------|---------------|-------|--------------|------------------|----------|--------|---------|--------------|-----------|------------|
| Num | Frequency MHz | Raw dBμV | Cable Loss dB | AF dB | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
| 1 | 5150.00 | 4.09 | 3.67 | 34.11 | 41.87 | Max Avg | Vertical | 175 | 273 | 54.0 | -12.1 | Pass |
| 2 | 5150.00 | 18.21 | 3.67 | 34.11 | 55.99 | Max Peak | Vertical | 175 | 273 | 74.0 | -18.0 | Pass |
| 3 | 5150.00 | -- | -- | -- | -- | Restricted-Band | -- | -- | -- | -- | -- | -- |

Test Notes: SW Version-FCR.A2.XXX.AXX.4.000.002.01

[back to matrix](#)

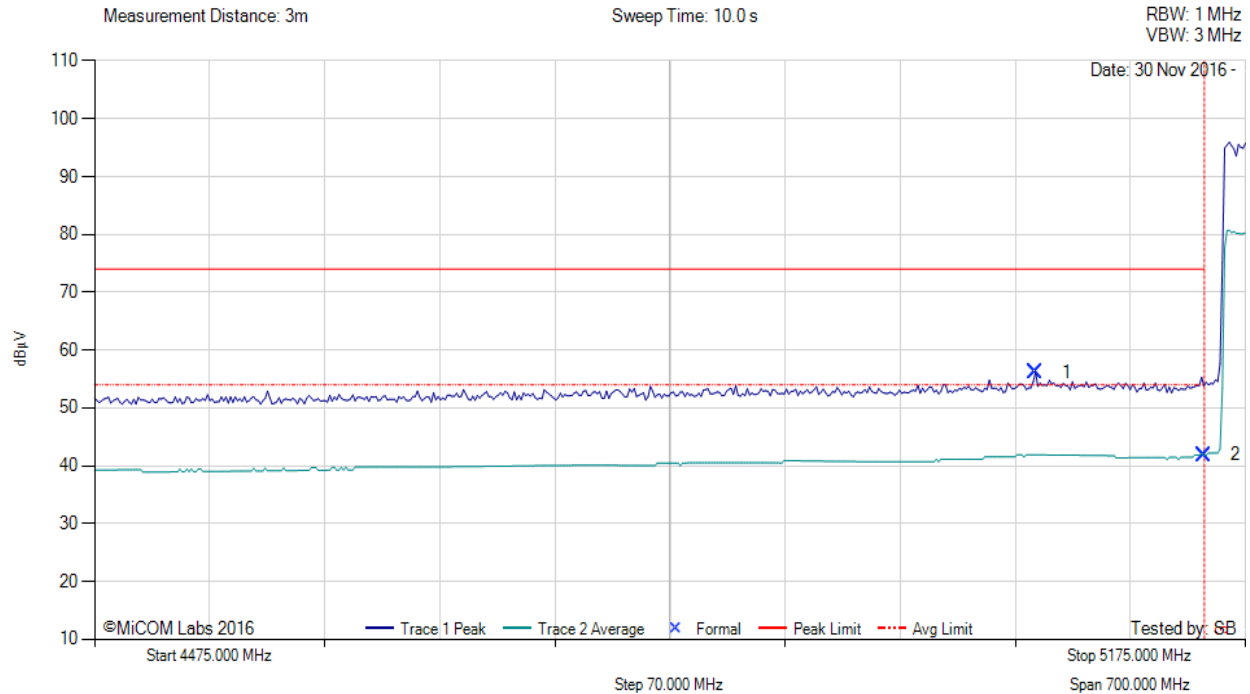


Title: Tarana Wireless AA2-CN65AFP
To: FCC CFR 47 Part 15 Subpart E 15.407
Serial #: TARA25-U3 Radiated Rev A
Issue Date: 15th December 2016
Page: 33 of 38



RESTRICTED LOWER BAND-EDGE EMISSIONS

Variant: 40 Low Band, Test Freq: 5180.00 MHz, Antenna: Tarana Integral, Power Setting: 14, Duty Cycle (%): 50



| 4475.00 - 5175.00 MHz | | | | | | | | | | | | |
|-----------------------|---------------|----------|---------------|-------|--------------|------------------|----------|--------|---------|--------------|-----------|------------|
| Num | Frequency MHz | Raw dBμV | Cable Loss dB | AF dB | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
| 1 | 5047.60 | 18.32 | 3.64 | 34.20 | 56.16 | Max Peak | Vertical | 175 | 273 | 74.0 | -17.8 | Pass |
| 2 | 5150.00 | 4.09 | 3.67 | 34.11 | 41.87 | Max Avg | Vertical | 175 | 273 | 54.0 | -12.1 | Pass |
| 3 | 5150.00 | -- | -- | -- | -- | Restricted-Band | -- | -- | -- | -- | -- | -- |

Test Notes: SW Version-FCR.A2.XXX.AXX.4.000.002.01

[back to matrix](#)

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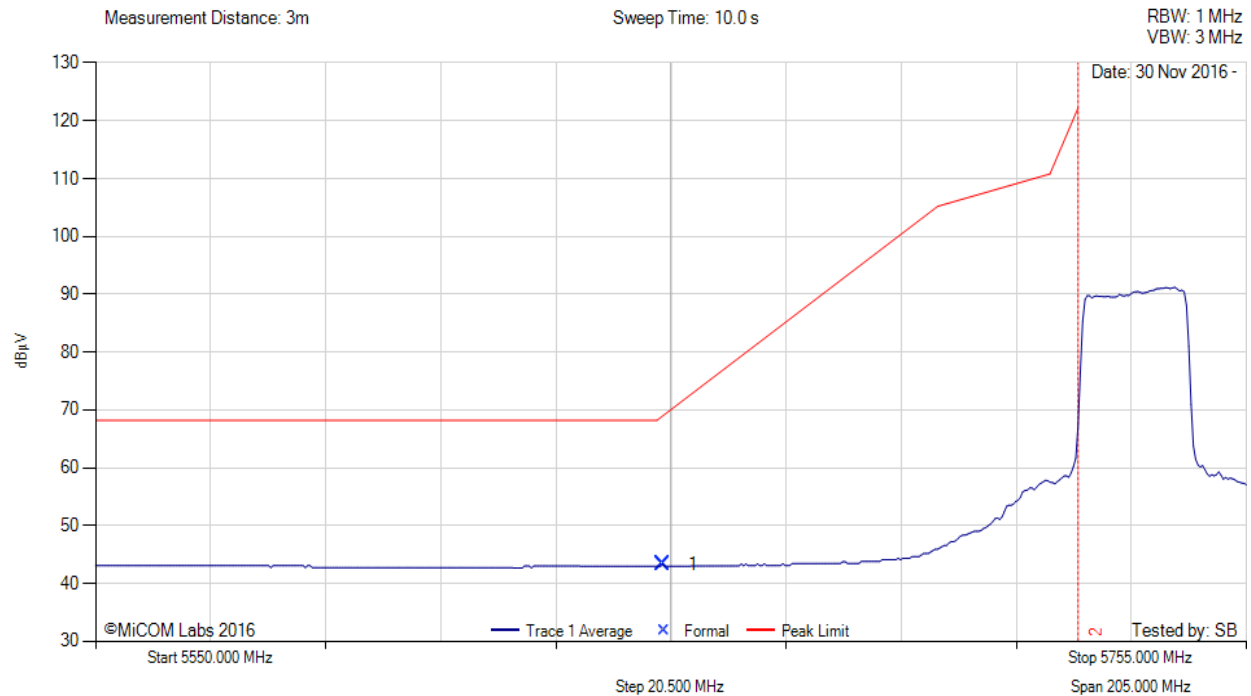


Title: Tarana Wireless AA2-CN65AFP
To: FCC CFR 47 Part 15 Subpart E 15.407
Serial #: TARA25-U3 Radiated Rev A
Issue Date: 15th December 2016
Page: 34 of 38



5725 MHz RADIATED BAND-EDGE EMISSIONS

Variant: 20 High Band, Test Freq: 5735.00 MHz, Antenna: Tarana Integral, Power Setting: 5, Duty Cycle (%): 50



| 5550.00 - 5755.00 MHz | | | | | | | | | | | | |
|-----------------------|---------------|----------|---------------|-------|--------------|------------------|----------|--------|---------|--------------|-----------|------------|
| Num | Frequency MHz | Raw dBμV | Cable Loss dB | AF dB | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
| 1 | 5651.05 | 5.37 | 3.76 | 34.18 | 43.31 | Max Avg | Vertical | 175 | 273 | 68.9 | -25.6 | Pass |
| 2 | 5725.00 | -- | -- | -- | -- | Band-Edge | -- | -- | -- | -- | -- | -- |

Test Notes: SW Version-FCR.A2.XXX.AXX.4.000.002.01

[back to matrix](#)

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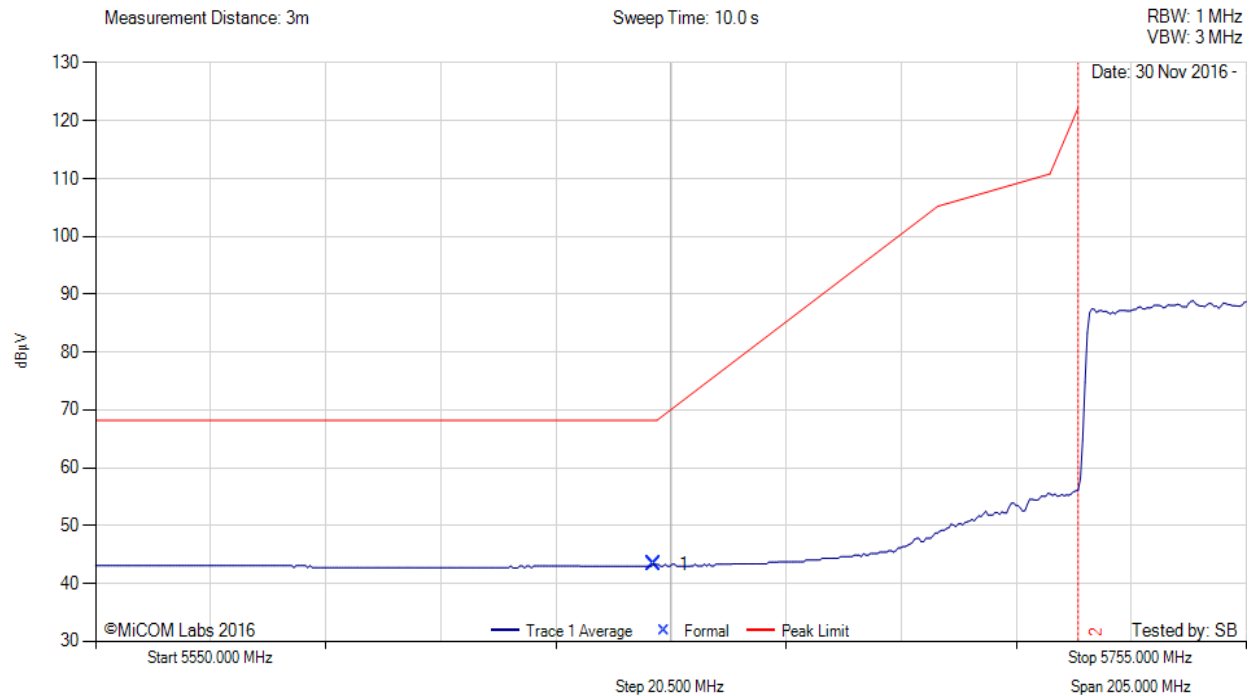


Title: Tarana Wireless AA2-CN65AFP
To: FCC CFR 47 Part 15 Subpart E 15.407
Serial #: TARA25-U3 Radiated Rev A
Issue Date: 15th December 2016
Page: 35 of 38



5725 MHz RADIATED BAND-EDGE EMISSIONS

Variant: 40 High Band, Test Freq: 5745.00 MHz, Antenna: Tarana Integral, Power Setting: 8.5, Duty Cycle (%): 50



| 5550.00 - 5755.00 MHz | | | | | | | | | | | | |
|-----------------------|---------------|----------|---------------|-------|--------------|------------------|----------|--------|---------|--------------|-----------|------------|
| Num | Frequency MHz | Raw dBμV | Cable Loss dB | AF dB | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
| 1 | 5649.41 | 5.38 | 3.75 | 34.18 | 43.31 | Max Avg | Vertical | 175 | 273 | 68.2 | -24.9 | Pass |
| 2 | 5725.00 | -- | -- | -- | -- | Band-Edge | -- | -- | -- | -- | -- | -- |

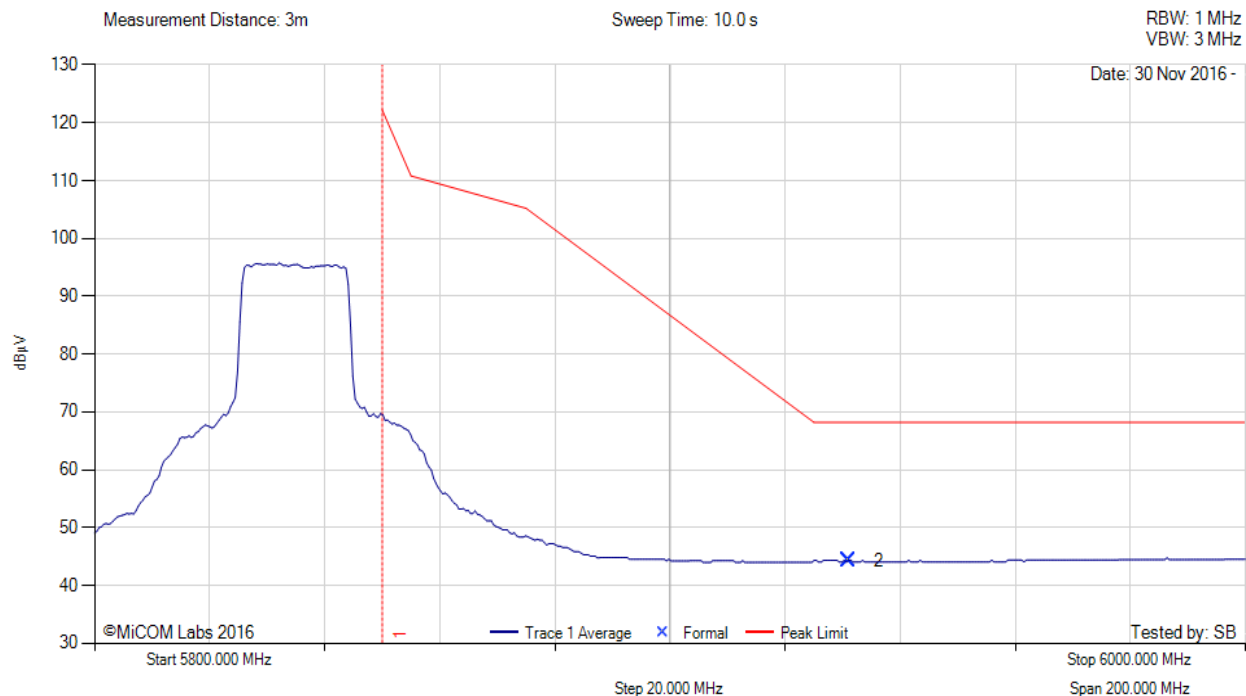
Test Notes: SW Version-FCR.A2.XXX.AXX.4.000.002.01

[back to matrix](#)

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5850 MHz RADIATED BAND-EDGE EMISSIONS

Variant: 20 High Band, Test Freq: 5835.00 MHz, Antenna: Tarana Integral, Power Setting: 5, Duty Cycle (%): 50



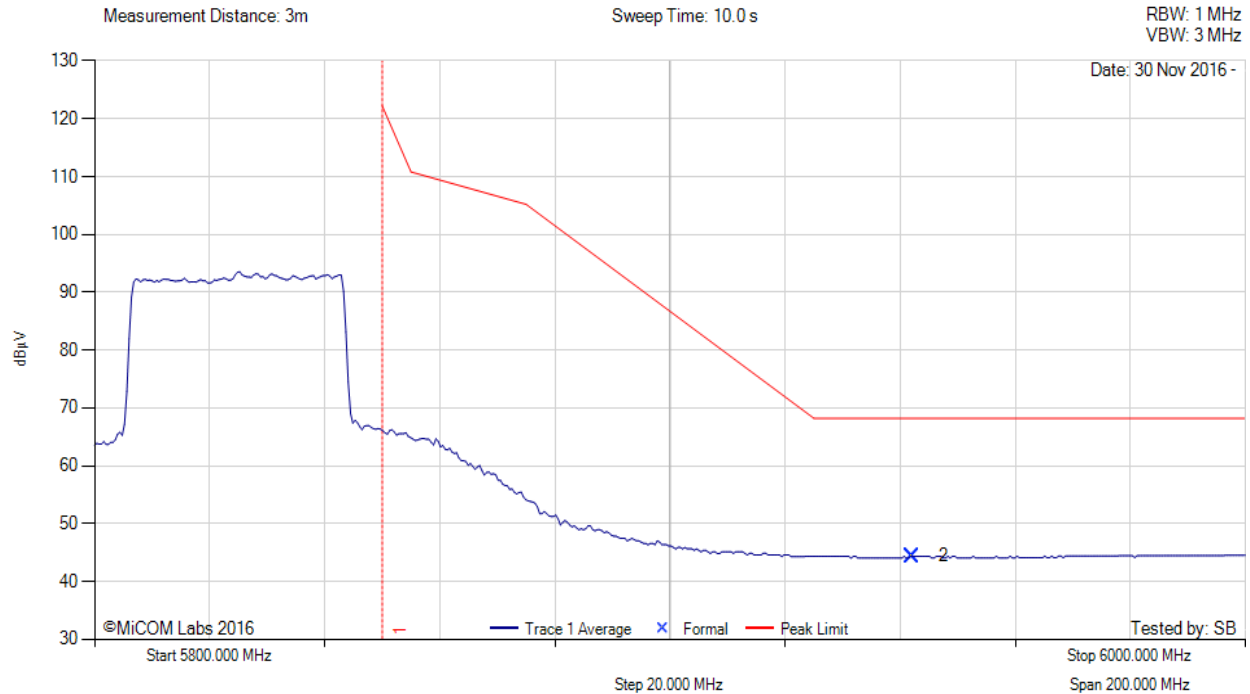
| 5800.00 - 6000.00 MHz | | | | | | | | | | | | |
|-----------------------|---------------|----------|---------------|-------|--------------|------------------|----------|--------|---------|--------------|-----------|------------|
| Num | Frequency MHz | Raw dBμV | Cable Loss dB | AF dB | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
| 2 | 5930.96 | 5.67 | 3.84 | 34.84 | 44.35 | Max Avg | Vertical | 175 | 273 | 68.2 | -23.9 | Pass |
| 1 | 5850.00 | -- | -- | -- | -- | Band-Edge | -- | -- | -- | -- | -- | -- |

Test Notes: SW Version-FCR.A2.XXX.AXX.4.000.002.01

[back to matrix](#)

5850 MHz RADIATED BAND-EDGE EMISSIONS

Variant: 40 High Band, Test Freq: 5825.00 MHz, Antenna: Tarana Integral, Power Setting: 8, Duty Cycle (%): 50



| 5800.00 - 6000.00 MHz | | | | | | | | | | | | |
|-----------------------|---------------|----------|---------------|-------|--------------|------------------|----------|--------|---------|--------------|-----------|------------|
| Num | Frequency MHz | Raw dBμV | Cable Loss dB | AF dB | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
| 2 | 5942.18 | 5.64 | 3.87 | 34.86 | 44.37 | Max Avg | Vertical | 175 | 273 | 68.2 | -23.9 | Pass |
| 1 | 5850.00 | -- | -- | -- | -- | Band-Edge | -- | -- | -- | -- | -- | -- |

Test Notes: SW Version-FCR.A2.XXX.AXX.4.000.002.01

[back to matrix](#)



575 Boulder Court
Pleasanton, California 94566, USA
Tel: +1 (925) 462 0304
Fax: +1 (925) 462 0306
www.micomlabs.com