ISED No: 4491A-WCBN3507R

CELER Compliance Certification Services Inc.

FCC ID: PPQ-WCBN3507R

| Test Standard | FCC Part 15.247 + IC RSS-247 issue 2 |
|---------------|---|
| FCC ID | PPQ-WCBN3507R |
| ISED No. | 4491A-WCBN3507R |
| Brand name | LITE-ON |
| Product name | 802.11a/b/g/n/ac 2Tx2R+BT V4.2LE USB Combo Module |
| Model No. | WCBN3507R |
| Test Result | Pass |

The test Result was tested by Compliance Certification Services Inc. The test data, data evaluation, test procedures, and equipment configurations shown in this report were given in ANSI C63.10: 2013 and compliance standards.

The test results of this report relate only to the tested sample (EUT) identified in this report.

The test Report of full or partial shall not copy. Without written approval of Compliance Certification Services Inc. (Wugu Laboratory).





Approved by:

Hem Cleang

Sam Chuang Manager

Tested by:

erry Chiang

Jerry Chuang Engineer



Revision History

| Rev. | Issue Date | Revisions | Revised By |
|------|-------------------|---------------|------------|
| 00 | December 18, 2017 | Initial Issue | May Lin |

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1. GENERAL INFORMATION

1.1 EUT INFORMATION

| Applicant | LITE-ON Technology Corp. Bldg. C, 90, Chien 1 Road, Chung Ho, New Taipei City 23585, Taiwan, R.O.C |
|-------------------|--|
| Manufacturer | LITE-ON TECHNOLOGY (Changzhou) CO., LTD A9 Building, No.88 Yanghu Road, Wujin Hi-Tech Industrial Development Zone, Changzhou City, Jiangsu Province 213100 China |
| Equipment | 802.11a/b/g/n/ac 2Tx2R+BT V4.2LE USB Combo Module |
| Model Name | WCBN3507R |
| Model Discrepancy | N/A |
| Received Date | November 29, 2017 |
| Date of Test | November 30 ~ December 14, 2017 |
| Output Power(W) | IEEE 802.11b mode: 0.0914 (EIRP: 0.2163) IEEE 802.11g mode: 0.2600 (EIRP: 0.6152) IEEE 802.11n HT 20 MHz mode: 0.1524 (EIRP: 0.3606) IEEE 802.11n HT 40 MHz mode: 0.1327 (EIRP: 0.3141) |
| Power Supply | Powered from host device: DC 5V |
| HW Version | V01 |
| FW Version | JEDI.MT76x2 |

1.2 EUT CHANNEL INFORMATION

| Frequency Range | 802.11b/g/n HT 20: 2412MHz ~ 2462MHz 802.11n HT 40: 2422MHz ~ 2452MHz |
|-----------------|---|
| Modulation Type | IEEE 802.11b mode: CCK IEEE 802.11g mode: OFDM IEEE 802.11n HT 20 MHz mode : OFDM IEEE 802.11n HT 40 MHz mode : OFDM |
| Bandwidth | IEEE 802.11b mode: 11 Channels IEEE 802.11g mode: 11 Channels IEEE 802.11n HT 20 MHz mode : 11 Channels IEEE 802.11n HT 40 MHz mode : 7 Channels |

Remark:

Refer as ANSI 63.10:2013 clause 5.6.1 Table 4 and RSS-GEN Table A1 for test channels

| Number of frequencies to be tested | | | | |
|--|---|--|--|--|
| Frequency range inNumber ofLocation in frequencywhich device operatesfrequenciesrange of operation | | | | |
| ☐ 1 MHz or less | 1 | Middle | | |
| 1 MHz to 10 MHz | 2 | 1 near top and 1 near bottom | | |
| 🛛 More than 10 MHz | 3 | 1 near top, 1 near middle, and 1 near bottom | | |

1.3 ANTENNA INFORMATION

| Antenna Type | ☑ PIFA □ PCB □ Dipole □ Coils | | | | | | |
|--------------|--|---|------|-----------------|-----------|---|--|
| | Brand P/N Type Cable length Peak Gain case | | | | | | |
| | HongBo | 290-10569 | PIFA | 300mm | 3.74dBi | V | |
| Antenna Gain | | nsity Directional Gain: 3.74 tenna information: P/N | Туре | Cable length | Peak Gain | | |
| | HongBo | 290-10310 | PIFA | 500mm | 3.60dBi | | |
| | Walsin | RFMTA401032IMLB702 | PIFA | 320mm | 2.6dBi | | |
| | Walsin | RFMTA401080IMLB701 | PIFA | 800mm | 1.72dBi | | |
| | 1.62dBi | | | | | | |
| | | | | | | | |

Notes:

1. Power Directional Gain: 10LOG(((10^(Ant1/10)+10^(Ant2/10))/2))

2. Power Density Directional Gain: 10LOG(((10^(Ant1/10)+10^(Ant2/10))/2))+10log(NTX/NSS)

1.4 MEASUREMENT UNCERTAINTY

| PARAMETER | UNCERTAINTY |
|--|-------------|
| Semi Anechoic Chamber (966 Chamber_B) / Radiated Emission, 30 to 1000 MHz | +/- 3.97 |
| Semi Anechoic Chamber (966 Chamber_B) / Radiated Emission, 1 to 18GHz | +/- 3.58 |
| Semi Anechoic Chamber (966 Chamber_B) / Radiated Emission, 18 to 26 GHz | +/- 3.59 |
| Semi Anechoic Chamber (966 Chamber_B) / Radiated Emission, 26 to 40 GHz | +/- 3.81 |
| Conducted Emission (Mains Terminals), 9kHz to 30MHz | +/- 2.48 |

Remark:

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

2. ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report.

1.5 FACILITIES AND TEST LOCATION

All measurement facilities used to collect the measurement data are located at

No.11, Wugong 6th Rd., Wugu Dist., New Taipei City 24891, Taiwan. (R.O.C.)

| Test site | Test Engineer | Remark |
|--------------------|---------------|--------|
| AC Conduction Room | Eric Lee | - |
| Radiation | Jerry Chuang | - |
| RF Conducted | Jerry Chuang | - |

Remark: The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 and CISPR Publication 22.

1.6 INSTRUMENT CALIBRATION

| RF Conducted Test Site | | | | | | | |
|-------------------------------------|-----------------------|--------------------|------------|------------|------------|--|--|
| Equipment | Manufacturer | Model | S/N | Cal Date | Cal Due | | |
| Power Meter | Anritsu | ML2495A | 1033009 | 04/11/2017 | 04/10/2018 | | |
| Power Sensor | Anritsu | MA2411B | 917072 | 07/03/2017 | 07/02/2018 | | |
| Spectrum Analyzer | R&S | FSV 40 | 101073 | 10/02/2017 | 10/01/2018 | | |
| Thermostatic/Hrgro satic Chamber | GWINSTEK | GTC-288MH-CC | TH160402 | 05/23/2017 | 05/22/2018 | | |
| Directional Coupler | Agilent | 87301D | MY44350252 | 07/25/2017 | 07/24/2018 | | |
| SUCOFLEX Cable | HUBER SUHNER | SUCOFLEX 104PEA | 25157 | 07/31/2017 | 07/30/2018 | | |
| Divider | Solvang Technology | 2-18GHz 4Way | STI08-0015 | 07/26/2017 | 07/25/2018 | | |
| | 3 | M 966 Chamber 1 | Fest Site | | | | |
| Equipment | Manufacturer | Model | S/N | Cal Date | Cal Due | | |
| Bilog Antenna | Sunol Sciences | JB3 | A030105 | 06/20/2017 | 06/19/2018 | | |
| Horn Antenna | EMCO | 3117 | 00055165 | 02/20/2017 | 02/19/2018 | | |
| Pre-Amplifier | EMCI | EMC 012635 | 980151 | 08/01/2017 | 07/31/2018 | | |
| Pre-Amplifier | EMEC | EM330 | 060609 | 06/07/2017 | 06/06/2018 | | |
| Spectrum Analyzer | Agilent | E4446A | US42510252 | 11/26/2017 | 11/25/2018 | | |
| Antenna Tower | CCS | CC-A-1F | N/A | N.C.R | N.C.R | | |
| Controller | CCS | CC-C-1F | N/A | N.C.R | N.C.R | | |
| Turn Table | CCS | CC-T-1F | N/A | N.C.R | N.C.R | | |
| AC Conducted Emissions Test Site | | | | | | | |
| Equipment | Manufacturer | Model | S/N | Cal Date | Cal Due | | |
| LISN | R&S | ENV216 | 101054 | 05/18/2017 | 05/17/2018 | | |
| LISN | SCHWARZBECK | NSLK 8127 | 8127-541 | 02/14/2017 | 02/13/2018 | | |
| EMI Test Receiver | R&S | ESCI | 100064 | 05/17/2017 | 05/16/2018 | | |

Remark: Each piece of equipment is scheduled for calibration once a year.



1.7 SUPPORT AND EUT ACCESSORIES EQUIPMENT

| EUT Accessories Equipment | | | | | | | |
|---------------------------|---|--|--|--|--|--|--|
| No. | No. Equipment Brand Model Series No. FCC ID | | | | | | |
| | N/A | | | | | | |

| Support Equipment | | | | | | |
|---|-------|------|--------------------|-----|--------------|--|
| No. Equipment Brand Model Series No. FCC ID | | | | | | |
| 1 | NB(H) | Acer | Aspire 4320 series | N/A | QDS-BRCM1018 | |

1.8 TEST METHODOLOGY AND APPLIED STANDARDS

The test methodology, setups and results comply with all requirements in accordance with ANSI C63.10:2013, FCC Part 2, FCC Part 15.247, KDB 662911 D01 v02 r01, KDB 558074 D01 V04, RSS-247 Issue 2 and RSS-GEN Issue 4.

2. TEST SUMMERY

| FCC Standard Section | IC Standard Section | Report Section | Test Item | Result |
|----------------------------|------------------------|-------------------|-----------------------------|--------|
| 15.203 | - | 1.2 | Antenna Requirement | Pass |
| 15.207(a) | RSS-GEN 8.8 | 4.1 | AC Conducted Emission | Pass |
| 15.247(a)(2) | RSS-247(5.2)(a) | 4.2 | 6 dB Bandwidth | Pass |
| - | RSS-GEN 6.6 | 4.2 | Occupied Bandwidth (99%) | Pass |
| 15.247(b) | RSS-247(5.4)(d) | 4.3 | Output Power Measurement | Pass |
| 15.247(e) | RSS-247(5.2)(b) | 4.4 | Power Spectral Density | Pass |
| 15.247(d) | RSS-247(5.5) | 4.5 | Conducted Band Edge | Pass |
| 15.247(d) | RSS-247(5.5) | 4.5 | Conducted Emission | Pass |
| 15.247(d) | RSS-GEN 8.9, 8.10 | 4.6 | Radiation Band Edge | Pass |
| 15.247(d) | RSS-GEN 8.9, 8.10 | 4.6 | Radiation Spurious Emission | Pass |

3. DESCRIPTION OF TEST MODES

FCC ID: PPQ-WCBN3507R

CESRE Compliance Certification Services Inc.

3.1 THE WORST MODE OF OPERATING CONDITION

| Operation mode | IEEE 802.11b mode :1Mbps IEEE 802.11g mode :6Mbps IEEE 802.11n HT20 mode :MCS0 IEEE 802.11n HT40 mode :MCS0 |
|--------------------------|--|
| Test Channel Frequencies | IEEE 802.11b mode : 1. Lowest Channel : 2412MHz 2. Middle Channel : 2437MHz 3. Highest Channel : 2462MHz IEEE 802.11g mode : 1. Lowest Channel : 2412MHz 2. Middle Channel : 2437MHz 3. Highest Channel : 2462MHz IEEE 802.11n HT20 mode : 1. Lowest Channel : 2412MHz 2. Middle Channel : 2437MHz 3. Highest Channel : 2462MHz IEEE 802.11n HT40 mode : 1. Lowest Channel : 2422MHz 2. Middle Channel : 2437MHz 3. Highest Channel : 2437MHz 3. Highest Channel : 2437MHz 4. Middle Channel : 2437MHz 4. M |
| Operation Transmitter | IEEE 802.11b mode :1T1R IEEE 802.11g mode :1T1R IEEE 802.11n HT20 mode : 2T2R IEEE 802.11n HT40 mode : 2T2R |

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Remark:

1. EUT pre-scanned data rate of output power for each mode, the worst data rate were recorded in this report.

3.2 THE WORST MODE OF MEASUREMENT

| AC Power Line Conducted Emission | | | | |
|---|---|--|--|--|
| Test Condition | AC Power line conducted emission for line and neutral | | | |
| Voltage/Hz DC 5V | | | | |
| Test Mode Mode 1: EUT power by Host System. | | | | |
| Worst Mode | 🛛 Mode 1 🗌 Mode 2 🗌 Mode 3 🗌 Mode 4 | | | |

| Radiated Emission Measurement Above 1G | | | |
|--|--|--|--|
| Test Condition | DN Band edge, Emission for Unwanted and Fundamental | | |
| Voltage/Hz | DC 5V | | |
| Test Mode | Mode 1: EUT power by Host System. | | |
| Worst Mode | 🛛 Mode 1 🗌 Mode 2 🗌 Mode 3 🗌 Mode 4 | | |
| Worst Position | Placed in fixed position. Placed in fixed position at X-Plane (E2-Plane) Placed in fixed position at Y-Plane (E1-Plane) Placed in fixed position at Z-Plane (H-Plane) | | |
| Worst Polarity | Horizontal 🛛 Vertical | | |

| | Radiated Emission Measurement Below 1G | | | | |
|---|--|--|--|--|--|
| Test Condition | Radiated Emission Below 1G | | | | |
| Voltage/Hz DC 5V | | | | | |
| Test Mode Mode 1: EUT power by Host System. | | | | | |
| Worst Mode Mode 1 Mode 2 Mode 3 Mode 4 | | | | | |

Remark:

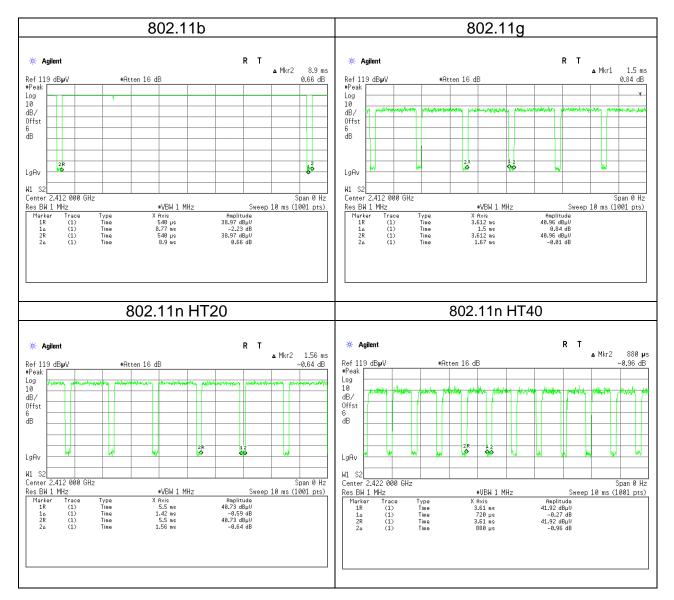
1. The worst mode was record in this test report.

2. EUT pre-scanned in three axis, X, Y, Z and two polarity, Horizontal and Vertical for radiated measurement. The worst case (Z-Plane and Vertical) were recorded in this report

3. For below 1G, AC power line conducted emission and radiation emission were performed the EUT transmit at the highest output power channel as worse case.

4. EUT DUTY CYCLE

| Duty Cycle | | | | | | |
|---------------|------------|-------------|----------------|-----------------|--|--|
| Configuration | TX ON (ms) | TX ALL (ms) | Duty Cycle (%) | Duty Factor(dB) | | |
| 802.11b | 8.7700 | 8.9000 | 98.54% | 0.06 | | |
| 802.11g | 1.5000 | 1.6700 | 89.82% | 0.47 | | |
| 802.11n HT20 | 1.4200 | 1.5600 | 91.03% | 0.41 | | |
| 802.11n HT40 | 0.7200 | 0.8800 | 81.82% | 0.87 | | |



5. TEST RESULT

5.1 AC POWER LINE CONDUCTED EMISSION

5.1.1 Test Limit

According to §15.207(a)(2) and RSS-GEN section 8.8,

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

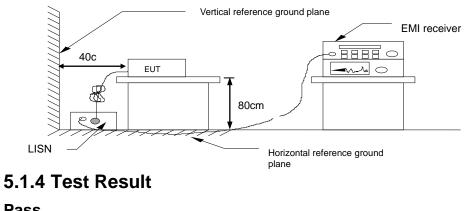
* Decreases with the logarithm of the frequency.

5.1.2 Test Procedure

Test method Refer as ANSI 63.10:2013 clause 6.2,

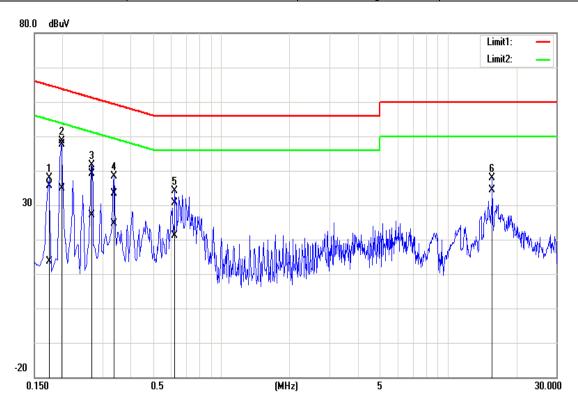
- 1. The EUT was placed on a non-conducted table, which is 0.8m above horizontal ground plane and 0.4m above vertical ground plane.
- 2. EUT connected to the line impedance stabilization network (LISN)
- 3. Receiver set RBW of 9kHz and Detector Peak, and note as quasi-peak and average.
- 4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
- Recorded Line for Neutral and Line. 5.

5.1.3 Test Setup



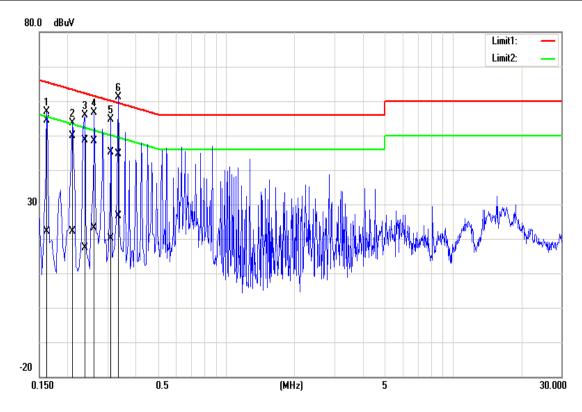
<u>Test Data</u>

| Test Mode: | Mode 1 | Temp/Hum | 24(°C)/ 50%RH |
|---------------|---------------|---------------|---------------|
| Test Voltage: | 120Vac / 60Hz | Test Date | 2017/12/01 |
| Phase: | Line | Test Engineer | Eric Lee |



| No. | Frequency | QuasiPeak reading | Average reading | Correction factor | QuasiPeak result | Average result | QuasiPeak limit | Average limit | QuasiPeak margin | Average margin | Remark |
|-----|-----------|----------------------|--------------------|----------------------|---------------------|-------------------|--------------------|------------------|---------------------|-------------------|--------|
| | (MHz) | (dBuV) | (dBuV) | (dB) | (dBuV) | (dBuV) | (dBuV) | (dBuV) | (dB) | (dB) | |
| 1 | 0.1740 | 35.69 | 13.64 | 0.05 | 35.74 | 13.69 | 64.77 | 54.77 | -29.03 | -41.08 | Pass |
| 2 | 0.1980 | 47.55 | 34.77 | 0.05 | 47.60 | 34.82 | 63.69 | 53.69 | -16.09 | -18.87 | Pass |
| 3 | 0.2700 | 39.17 | 26.98 | 0.05 | 39.22 | 27.03 | 61.12 | 51.12 | -21.90 | -24.09 | Pass |
| 4 | 0.3380 | 33.35 | 24.53 | 0.05 | 33.40 | 24.58 | 59.25 | 49.25 | -25.85 | -24.67 | Pass |
| 5 | 0.6260 | 30.52 | 21.14 | 0.06 | 30.58 | 21.20 | 56.00 | 46.00 | -25.42 | -24.80 | Pass |
| 6 | 15.7100 | 37.66 | 34.16 | 0.24 | 37.90 | 34.40 | 60.00 | 50.00 | -22.10 | -15.60 | Pass |

| Test Mode: | Mode 1 | Temp/Hum | 24(°C)/ 50%RH | | |
|---------------|---------------|---------------|---------------|--|--|
| Test Voltage: | 120Vac / 60Hz | Test Date | 2017/12/01 | | |
| Phase: | Neutral | Test Engineer | Eric Lee | | |



| No. | Frequency | QuasiPeak reading | Average reading | Correction factor | QuasiPeak result | Average result | QuasiPeak limit | Average limit | QuasiPeak margin | Average margin | Remark |
|-----|-----------|----------------------|--------------------|-------------------|---------------------|-------------------|--------------------|------------------|---------------------|-------------------|--------|
| | (MHz) | (dBuV) | (dBuV) | (dB) | (dBuV) | (dBuV) | (dBuV) | (dBuV) | (dB) | (dB) | |
| 1 | 0.1620 | 54.20 | 21.98 | 0.12 | 54.32 | 22.10 | 65.36 | 55.36 | -11.04 | -33.26 | Pass |
| 2 | 0.2100 | 49.73 | 22.12 | 0.12 | 49.85 | 22.24 | 63.21 | 53.21 | -13.36 | -30.97 | Pass |
| 3 | 0.2380 | 48.47 | 17.15 | 0.12 | 48.59 | 17.27 | 62.17 | 52.17 | -13.58 | -34.90 | Pass |
| 4 | 0.2620 | 48.27 | 23.03 | 0.12 | 48.39 | 23.15 | 61.37 | 51.37 | -12.98 | -28.22 | Pass |
| 5 | 0.3100 | 45.10 | 19.92 | 0.13 | 45.23 | 20.05 | 59.97 | 49.97 | -14.74 | -29.92 | Pass |
| 6 | 0.3340 | 44.47 | 26.57 | 0.13 | 44.60 | 26.70 | 59.35 | 49.35 | -14.75 | -22.65 | Pass |

5.2 6DB BANDWIDTH AND OCCUPIED BANDWIDTH(99%)

5.2.1 Test Limit

According to §15.247(a)(2) and RSS-247 section 5.2(a),

6 dB Bandwidth :

| Limit | Shall be at least 500kHz |
|-------|--------------------------|
|-------|--------------------------|

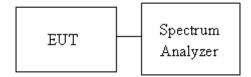
Occupied Bandwidth(99%) : For reporting purposes only.

5.2.2 Test Procedure

Test method Refer as KDB 558074 D01 V04, Section 8.1 and ANSI 63.10:2013 clause 6.9.2,

- 1. The EUT RF output connected to the spectrum analyzer by RF cable.
- 2. Setting maximum power transmit of EUT
- 3. SA set RBW = 100kHz, VBW = 300kHz and Detector = Peak, to measurement 6 dB Bandwidth and 99% Bandwidth.
- 4. Measure and record the result of 6 dB Bandwidth and 99% Bandwidth. in the test report.

5.2.3 Test Setup



5.2.4 Test Result

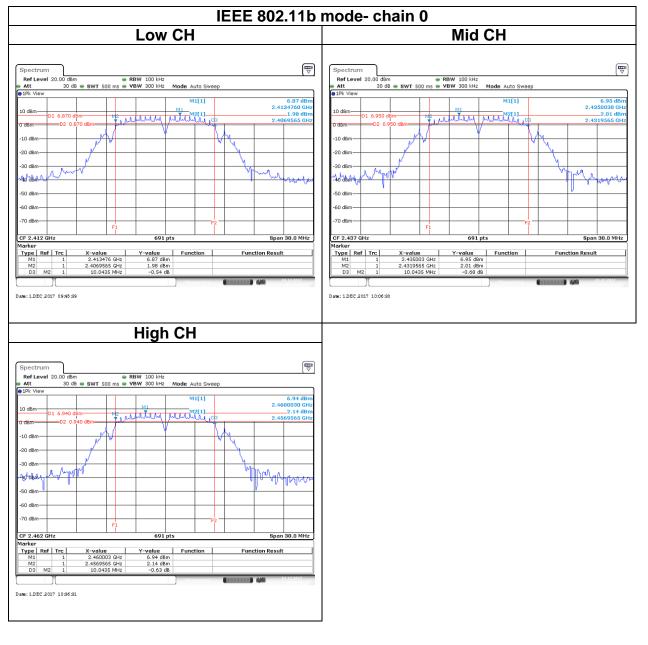
| | Test mode: IEEE 802.11b mode / 2412-2462 MHz | | | | | | | | | | |
|---------|---|---------|---|---------|---|------|--|--|--|--|--|
| Channel | H Frequency (MHz) Chain 0 Chain 1 Chain 0 Chain 1 OBW(99%) (MHz) (MHz) (MHz) 6dB BW (MHz) 6dB BW (KHz) | | | | | | | | | | |
| Low | 2412 | 12.2431 | - | 10.0435 | - | | | | | | |
| Mid | 2437 | 12.2431 | - | 10.0435 | - | ≥500 | | | | | |
| High | 2462 | 12.1562 | - | 10.0435 | - | | | | | | |

| | Test mode: IEEE 802.11g mode / 2412-2462 MHz | | | | | | | | | | |
|---------|--|---------|---|---------|---|------|--|--|--|--|--|
| Channel | Frequency (MHz)Chain 0 OBW(99%)Chain 1 OBW(99%)Chain 0 6dB BW (MHz)Chain 1 6dB BW (MHz)6dB limit 6dB BW (MHz) | | | | | | | | | | |
| Low | 2412 | 16.5846 | - | 16.3043 | - | | | | | | |
| Mid | 2437 | 16.5846 | - | 16.3043 | - | ≥500 | | | | | |
| High | 2462 | 16.5846 | - | 16.3043 | - | | | | | | |

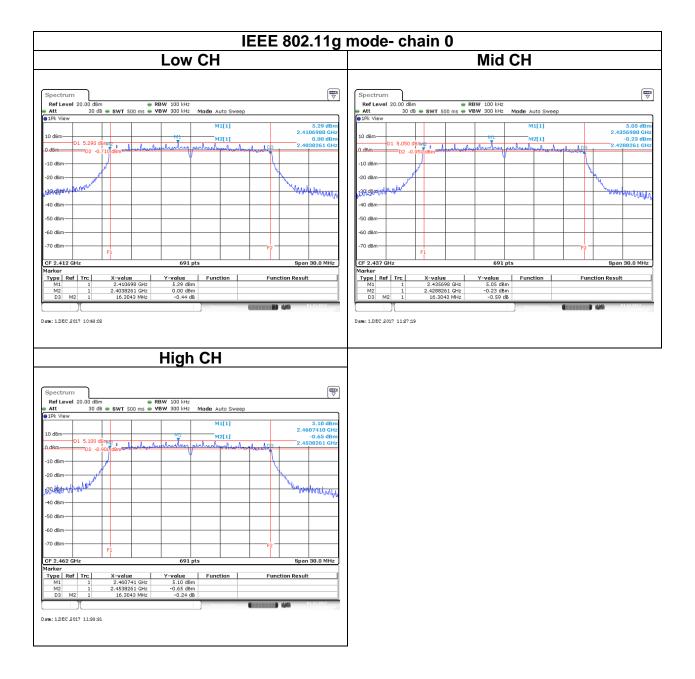
| | Test mode: IEEE 802.11n HT 20 MHz mode / 2412-2462 MHz | | | | | | | | | | |
|---------|---|---------|---------|---------|---------|------|--|--|--|--|--|
| Channel | Frequency (MHz)Chain 0 OBW(99%) (MHz)Chain 1 OBW(99%) (MHz)Chain 0 6dB BW (MHz)Chain 1 6dB BW (MHz)6dB In 6dB BW (MHz) | | | | | | | | | | |
| Low | 2412 | 17.5832 | 17.5832 | 16.9565 | 17.0435 | | | | | | |
| Mid | 2437 | 17.6266 | 17.6700 | 17.0343 | 17.0870 | ≥500 | | | | | |
| High | 2462 | 17.6266 | 17.5832 | 17.0435 | 17.5217 | | | | | | |

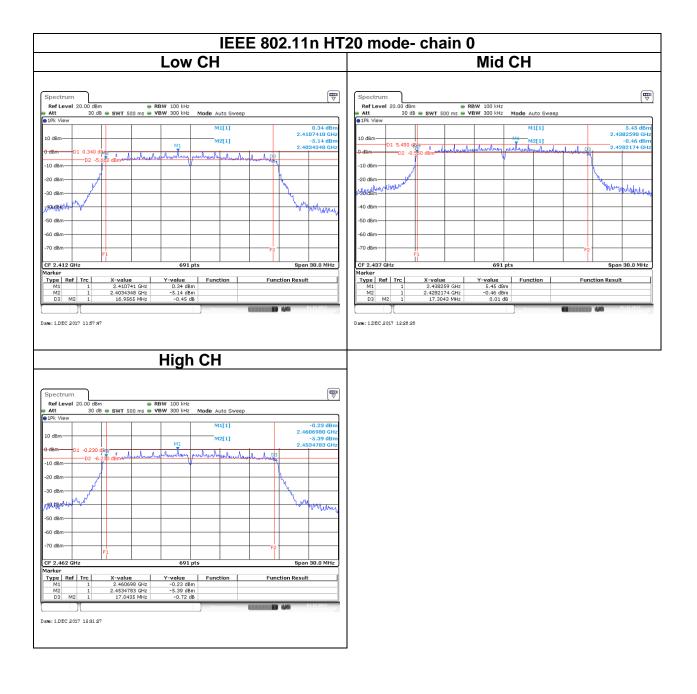
| | Test mode: IEEE 802.11n HT 40 MHz mode / 2422-2452 MHz | | | | | | | | | | |
|---------|---|---------|---------|--------|-------|------|--|--|--|--|--|
| Channel | Frequency (MHz)Chain 0 OBW(99%) (MHz)Chain 1 OBW(99%) (MHz)Chain 0 6dB BW (MHz)Chain 1 6dB BW (MHz)6dB Im 6dB BW (MHz) | | | | | | | | | | |
| Low | 2422 | 36.2373 | 36.0057 | 35.478 | 35.13 | | | | | | |
| Mid | 2437 | 36.2373 | 36.1215 | 35.362 | 35.13 | >500 | | | | | |
| High | 2452 | 36.2373 | 36.1215 | 35.246 | 35.13 | | | | | | |

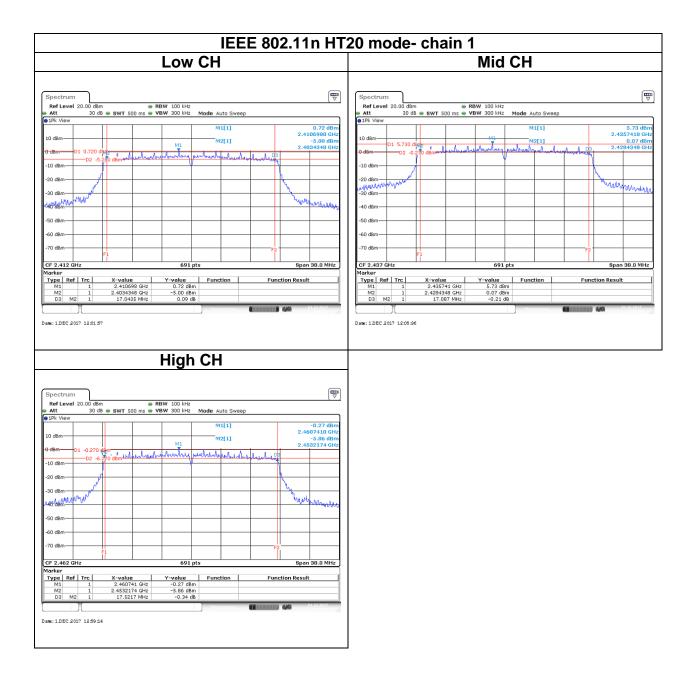
Test Data

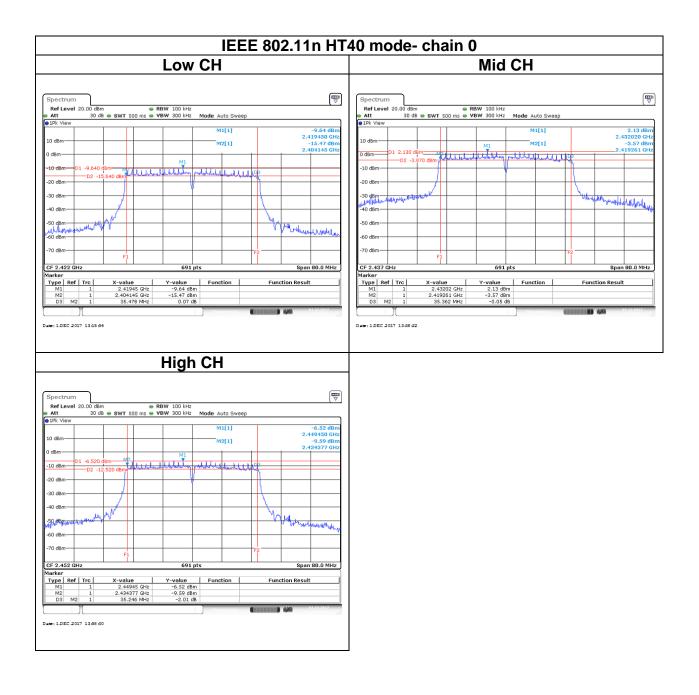


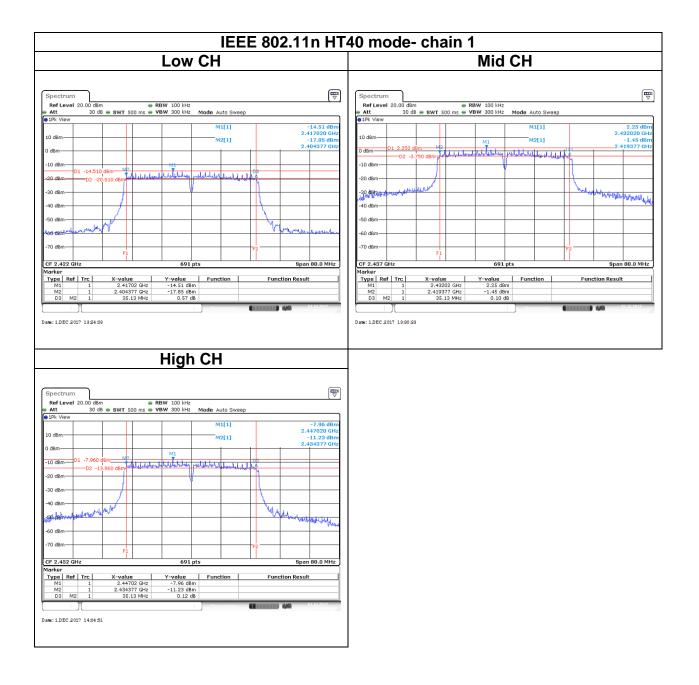












5.3 OUTPUT POWER MEASUREMENT

5.3.1 Test Limit

According to §15.247(b) and RSS-247 section 5.4(d),

Peak output power :

For systems using digital modulation in the 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt(30 dBm) and the e.i.r.p. shall not exceed 4Watt(36 dBm), base on the use of antennas with directional gain not exceed 6 dBi If transmitting antennas of directional gain greater than 6dBi are used the peak output power the conducted output power from the intentional radiator shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. In case of point-to-point operation, the limit has to be reduced by 1dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi.

| Lincit | Antenna not exceed 6 dBi : 30dBm Antenna with DG greater than 6 dBi : |
|--------|--|
| Limit | [Limit = 30 – (DG – 6)] |

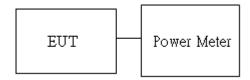
Average output power : For reporting purposes only.

5.3.2 Test Procedure

Test method Refer as KDB 558074 D01 V04, Section 9.1.2.

- 1. The EUT RF output connected to the power meter by RF cable.
- 2. Setting maximum power transmit of EUT.
- 3. The path loss was compensated to the results for each measurement.
- 4. Measure and record the result of Peak output power and Average output power. in the test report.

5.3.3 Test Setup



5.3.4 Test Result

Peak output power :

| | Wifi 2.4G | | | | | | | | | | | | |
|-----------------------|-----------|-------|--------|--------|--------|---------|-------------------|-------------------|------------------|------------------|-------|-------|---------------|
| Config CH | СН | Freq. | powe | er set | PK Pow | er(dBm) | PK Total Power | PK Total Power | EIRP PK Total | EIRP PK Total | DG | Limit | EIRP Limit |
| Comig | on | (MHz) | chain0 | chain1 | chain0 | chain1 | (dBm) | (W) | Power (dBm) | Power (W) | (dBi) | (dBm) | (dBm) |
| IEEE | Low | 2412 | 20 | - | 19.61 | - | 19.61 | 0.0914 | 23.35 | 0.2163 | | | |
| 802.11b Data rate: | Mid | 2437 | 1F | - | 19.24 | - | 19.24 | 0.0839 | 22.98 | 0.1986 | | | |
| 1Mbps | High | 2462 | 1F | - | 19.22 | - | 19.22 | 0.0836 | 22.96 | 0.1977 | | | |
| IEEE | Low | 2412 | 20 | - | 24.14 | - | 24.14 | 0.2594 | 27.88 | 0.6138 | | | |
| 802.11g Data rate: | Mid | 2437 | 20 | - | 24.12 | - | 24.12 | 0.2582 | 27.86 | 0.6109 | | | |
| 6Mbps | High | 2462 | 20 | - | 24.15 | - | 24.15 | 0.2600 | 27.89 | 0.6152 | 3.74 | 30 | 36 |
| IEEE 802.11n | Low | 2412 | 1D | 1D | 17.64 | 17.27 | 20.47 | 0.1114 | 24.21 | 0.2636 | 3.74 | 30 | 30 |
| HT20 | Mid | 2437 | 20 | 20 | 19.01 | 18.62 | 21.83 | 0.1524 | 25.57 | 0.3606 | | | |
| Data rate: MCS0 | High | 2462 | 1E | 1E | 18.20 | 18.12 | 21.17 | 0.1309 | 24.91 | 0.3097 | | | |
| IEEE 802.11n | Low | 2422 | 19 | 19 | 15.03 | 14.36 | 17.72 | 0.0592 | 21.46 | 0.1400 | | | |
| HT40 | Mid | 2437 | 21 | 21 | 18.26 | 18.17 | 21.23 | 0.1327 | 24.97 | 0.3141 | | | |
| Data rate: MCS0 | High | 2452 | 18 | 18 | 13.58 | 13.46 | 16.53 | 0.0450 | 20.27 | 0.1064 | | | |

Average output power :

| | | Wi | fi 2.4G | | | |
|-----------------------|------|-------|---------|---------|-------------------|--|
| Config | СН | Freq. | AV Pow | er(dBm) | AV Total Power | |
| comg | | (MHz) | chain0 | chain1 | (dBm) | |
| IEEE | Low | 2412 | 16.94 | - | 16.94 | |
| 802.11b Data rate: | Mid | 2437 | 16.76 | - | 16.76 | |
| 1Mbps | High | 2462 | 16.73 | - | 16.73 | |
| IEEE | Low | 2412 | 15.93 | - | 15.93 | |
| 802.11g Data rate: | Mid | 2437 | 15.85 | - | 15.85 | |
| 6Mbps | High | 2462 | 15.91 | - | 15.91 | |
| IEEE 802.11n | Low | 2412 | 14.33 | 14.08 | 17.22 | |
| HT20 | Mid | 2437 | 15.77 | 15.30 | 18.55 | |
| Data rate: MCS0 | High | 2462 | 14.63 | 14.57 | 17.61 | |
| IEEE 802.11n | Low | 2422 | 11.82 | 11.45 | 14.65 | |
| HT40 | Mid | 2437 | 15.14 | 15.03 | 18.10 | |
| Data rate: MCS0 | High | 2452 | 10.75 | 10.69 | 13.73 | |

5.4 POWER SPECTRAL DENSITY

5.4.1 Test Limit

According to §15.247(e) and RSS-247 section 5.2(b),

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

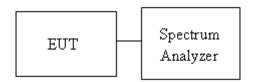
| | Antenna not exceed 6 dBi : 8dBm |
|-------|--------------------------------------|
| Limit | Antenna with DG greater than 6 dBi : |
| | [Limit = $8 - (DG - 6)$] |
| | Point-to-point operation : |

5.4.2 Test Procedure

Test method Refer as KDB 558074 D01 V04, Section 10.2

- 1. The EUT RF output connected to the spectrum analyzer by RF cable.
- 2. Setting maximum power transmit of EUT
- 3. SA set RBW = 3kHz, VBW = 30kHz, Span = 1.5 times DTS Bandwidth (6 dB BW), Detector = Peak, Sweep Time = Auto and Trace = Max hold.
- 4. The path loss and Duty Factor were compensated to the results for each measurement by SA.
- 5. Mark the maximum level.
- 6. Measure and record the result of power spectral density. in the test report.

5.4.3 Test Setup



5.4.4 Test Result

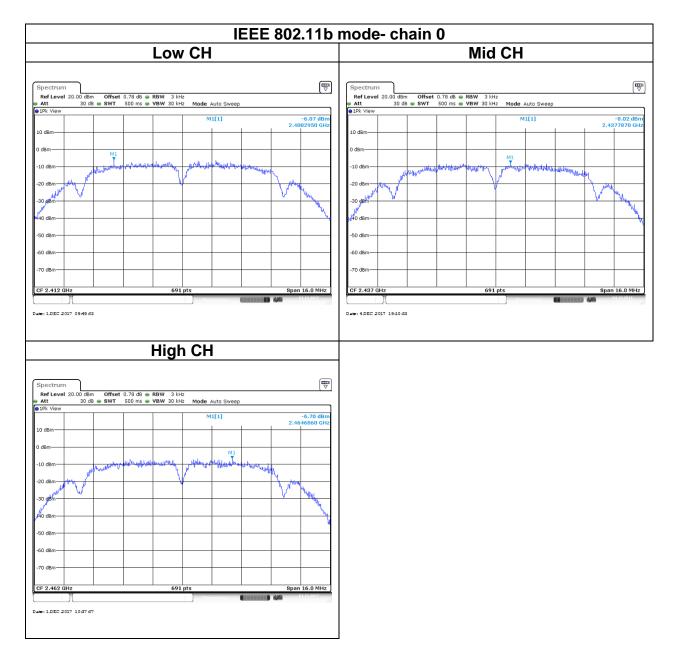
| | Test mode: IEEE 802.11b mode / 2412-2462 MHz | | | | | | | | | |
|---|--|-------|---|-------|---|--|--|--|--|--|
| ChannelFrequency (MHz)Chain 0 PPSD (dBm)Chain 1 PPSD (dBm)Total PSSD (dBm)Limit (dBm) | | | | | | | | | | |
| Low | 2412 | -6.07 | - | -6.07 | | | | | | |
| Mid | 2437 | -8.02 | - | -8.02 | 8 | | | | | |
| High | 2462 | -6.70 | - | -6.70 | | | | | | |

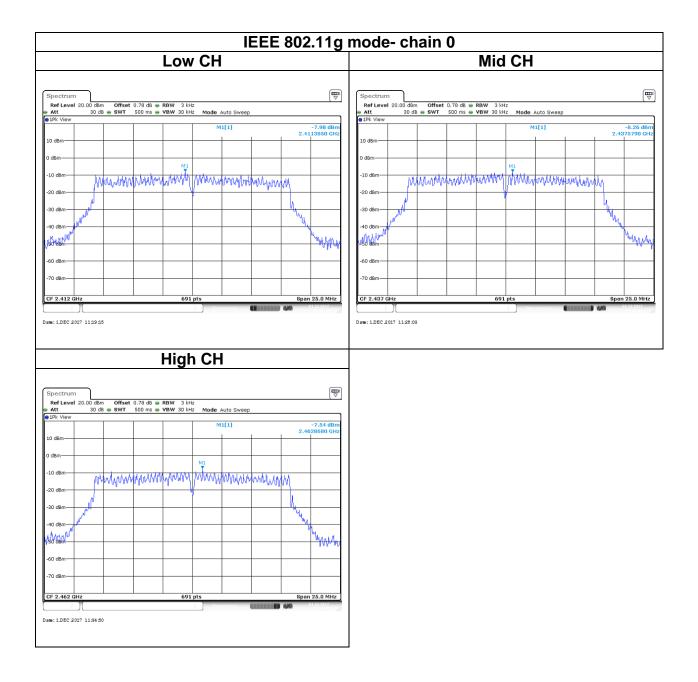
| | Test mode: IEEE 802.11g mode / 2412-2462 MHz | | | | | | | | | |
|---------|---|-------|---|-------|---|--|--|--|--|--|
| Channel | ChannelFrequency (MHz)Chain 0 PPSDChain 1 PPSDTotal PSSDLimit (dBm)Channel(MHz)(dBm)(dBm)(dBm)Limit (dBm) | | | | | | | | | |
| Low | 2412 | -7.98 | - | -7.98 | | | | | | |
| Mid | 2437 | -8.26 | - | -8.26 | 8 | | | | | |
| High | 2462 | -7.54 | - | -7.54 | | | | | | |

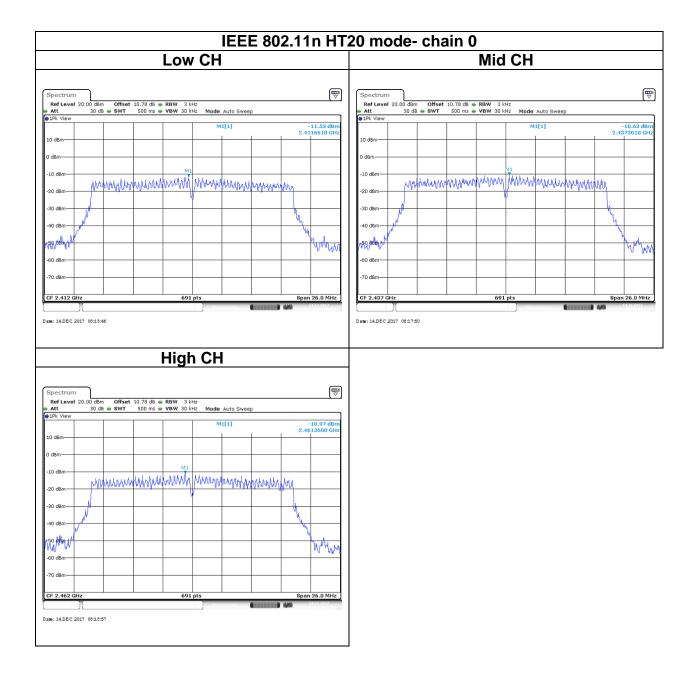
| | Test mode: IEEE 802.11n HT 20 MHz mode / 2412-2462 MHz | | | | | | | | |
|---|--|--------|--------|-------|---|--|--|--|--|
| ChannelFrequency (MHz)Chain 0 PPSDChain 1 PPSDTotal PSSDLimit (dBm)(dBm)(dBm)(dBm)(dBm)(dBm) | | | | | | | | | |
| Low | 2412 | -11.53 | -11.42 | -8.46 | | | | | |
| Mid | 2437 | -10.63 | -9.54 | -7.04 | 8 | | | | |
| High | 2462 | -10.97 | -11.54 | -8.24 | | | | | |

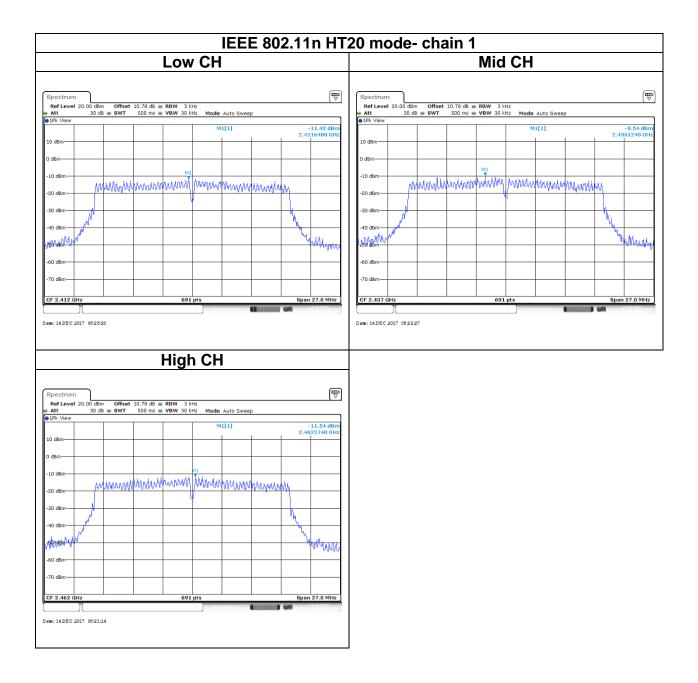
| | Test mode: IEEE 802.11n HT 40 MHz mode / 2422-2452 MHz | | | | | | | | |
|---------|--|--------|--------|--------|---|--|--|--|--|
| Channel | ChannelFrequency (MHz)Chain 0 PPSDChain 1 PPSDTotal PSSDLimit (dBm)(dBm)(dBm)(dBm)(dBm) | | | | | | | | |
| Low | 2422 | -15.64 | -20.59 | -14.43 | | | | | |
| Mid | 2437 | -11.48 | -12.08 | -8.76 | 8 | | | | |
| High | 2452 | -19.51 | 16.09 | 16.09 | | | | | |

Test Data



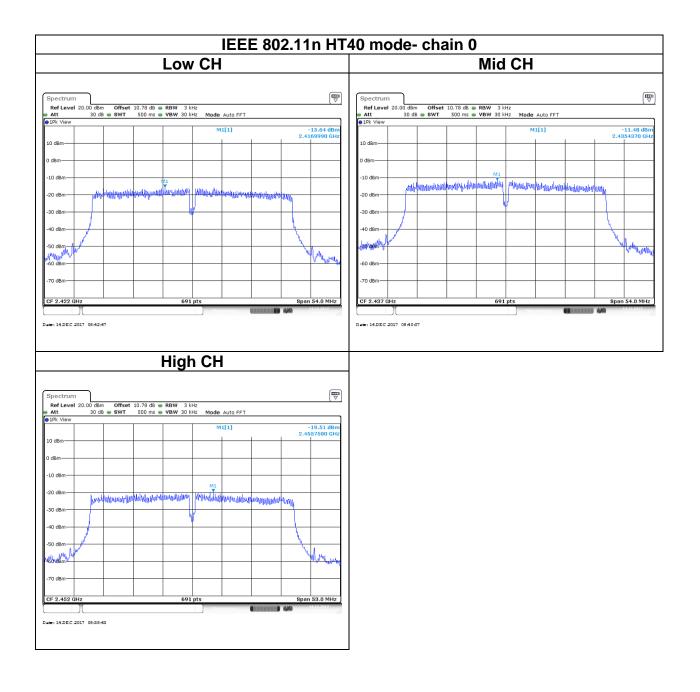


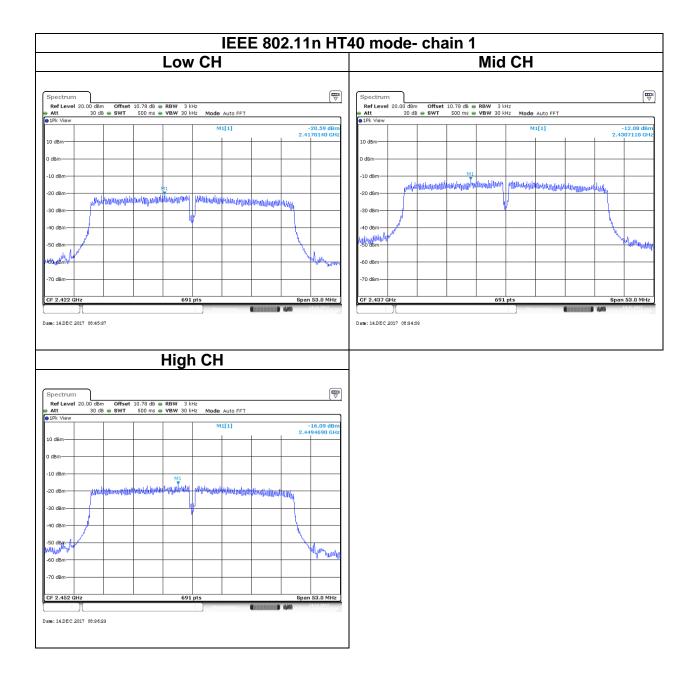




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 FCC ID: PPQ-WCBN3507R
 ISED NO: 4491A-WCBN3507R





5.5 CONDUCTED BANDEDGE AND SPURIOUS EMISSION

5.5.1 Test Limit

According to §15.247(d) and RSS-247 section 5.5,

In any 100 kHz bandwidth outside the authorized frequency band,

Non-restricted bands shall be attenuated at least 20 dB/30 dB relative to the maximum PSD level in 100 kHz by RF conducted or a radiated measurement which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a).

5.5.2 Test Procedure

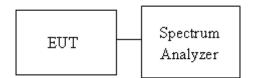
Test method Refer as KDB 662911 D01 v02 r01, KDB 558074 D01 V04, Section 11.

1. EUT RF output port connected to the SA by RF cable, and the path loss was compensated to result.

2. SA setting, RBW=100kHz, VBW=300kHz, Detector=Peak, Trace mode = max hold, SWT = Auto.

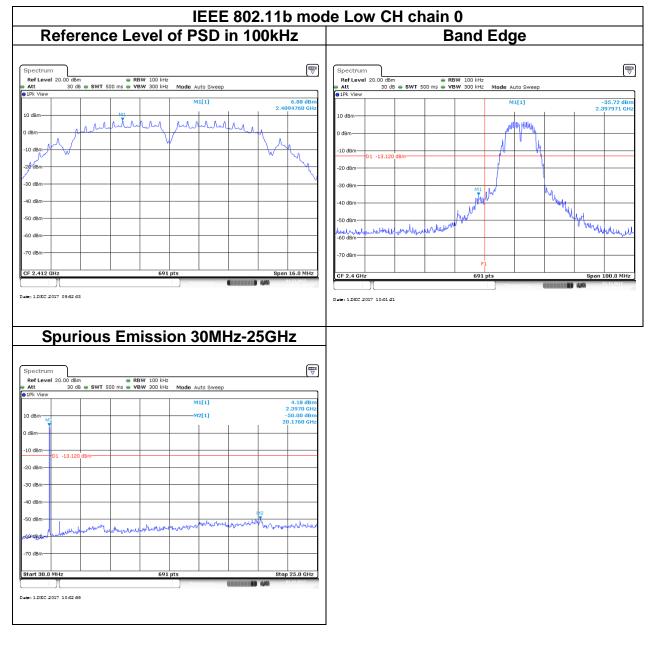
3. In any 100 kHz bandwidth outside the authorized frequency band, shall be attenuated at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz when conducted power procedure is used. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.

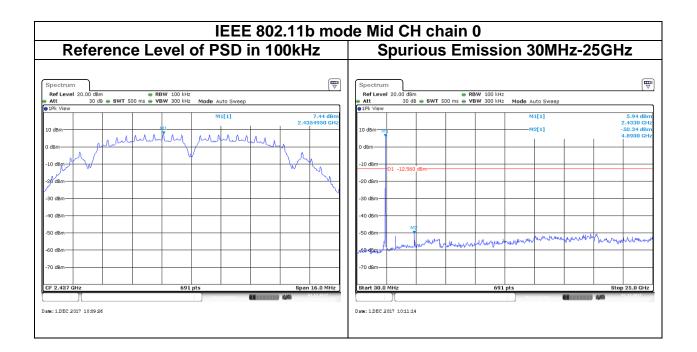
5.5.3 Test Setup



5.5.4 Test Result

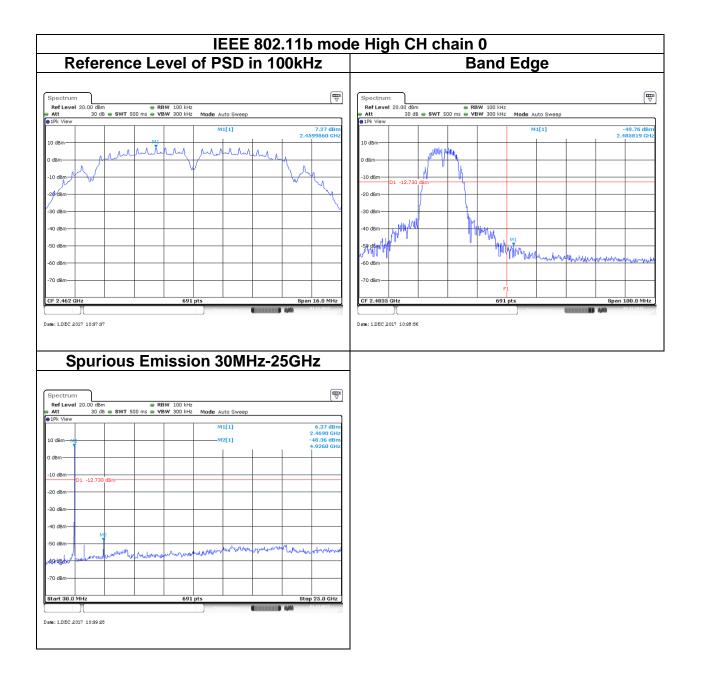
Test Data

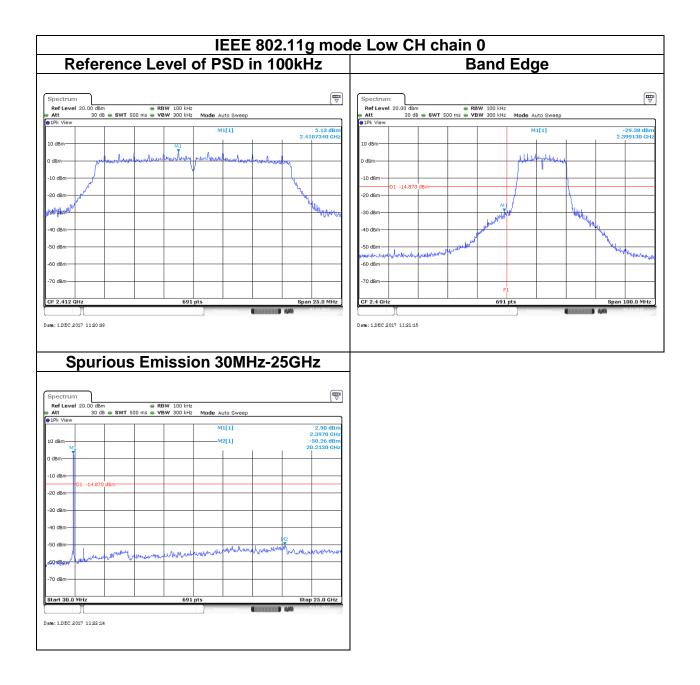


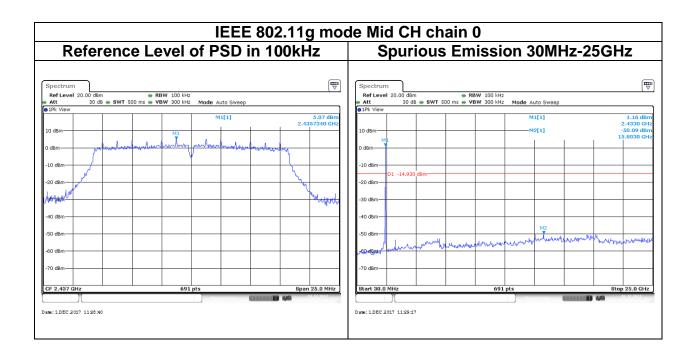


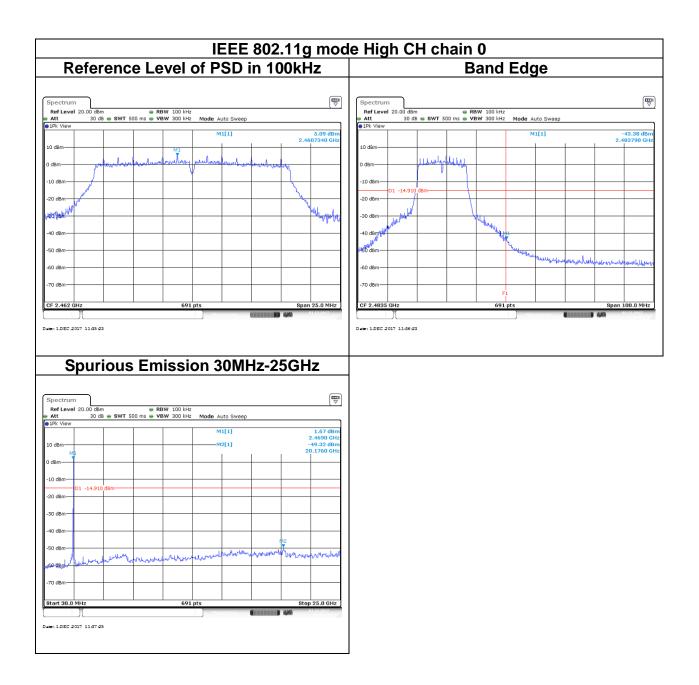
ISED NO: 4491A-WCBN3507R

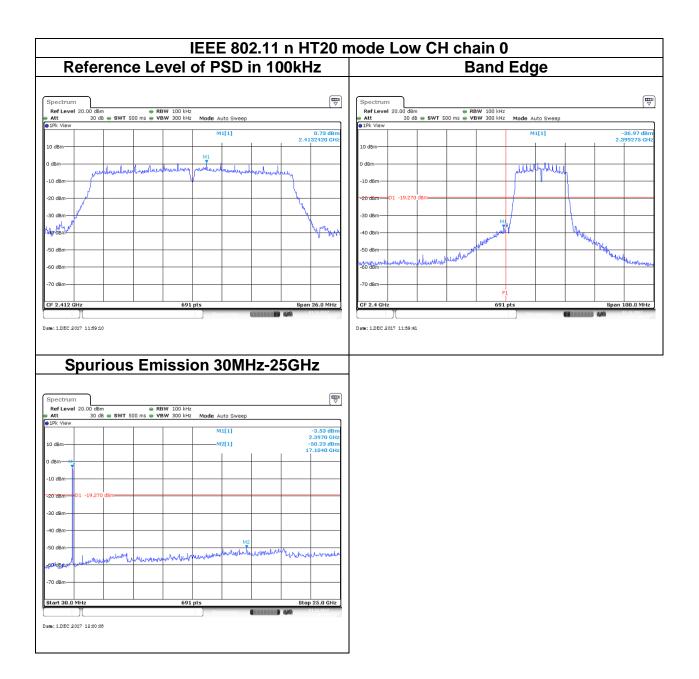
EESRF Compliance Certification Services Inc.





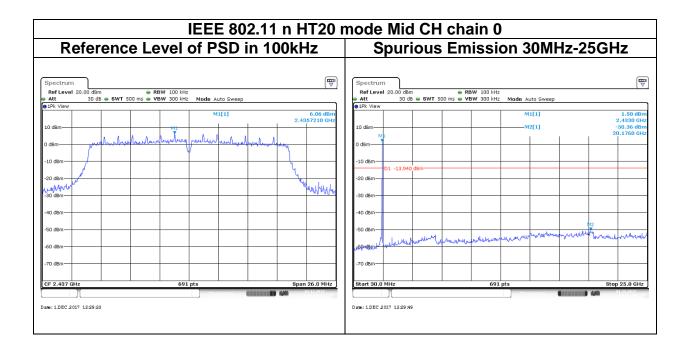


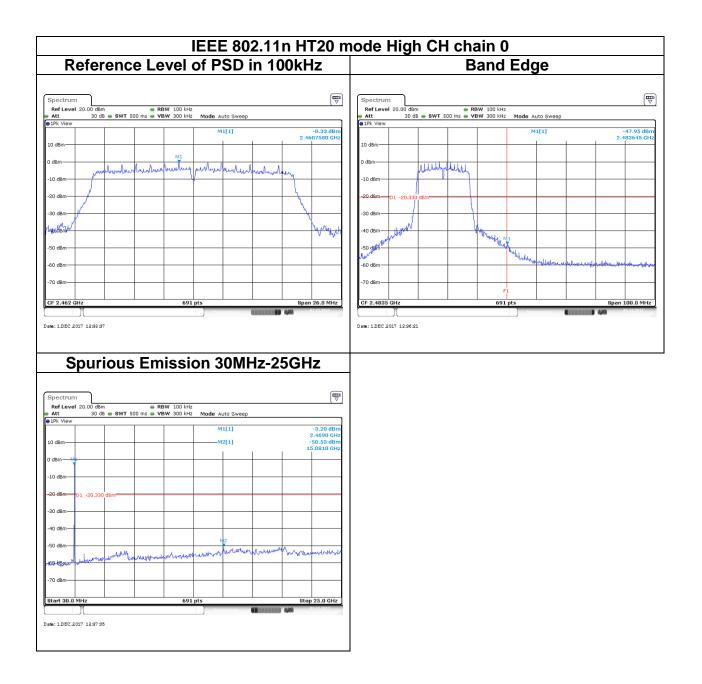


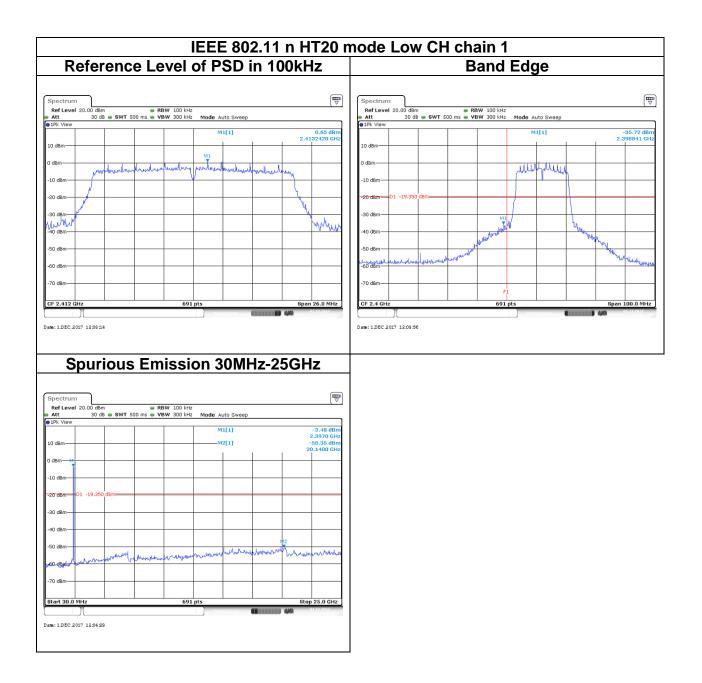


ISED NO: 4491A-WCBN3507R

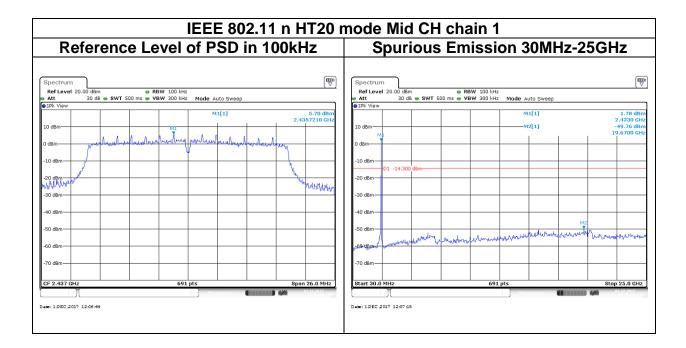
EESRF Compliance Certification Services Inc.



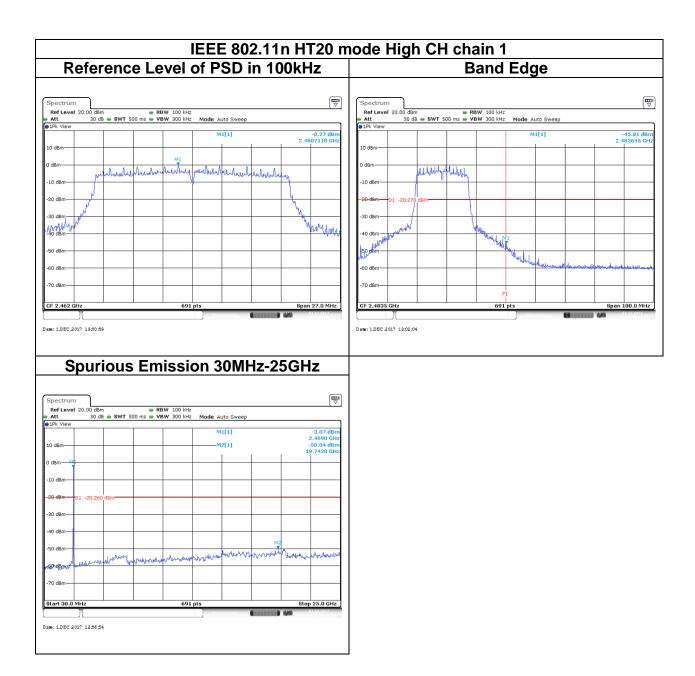


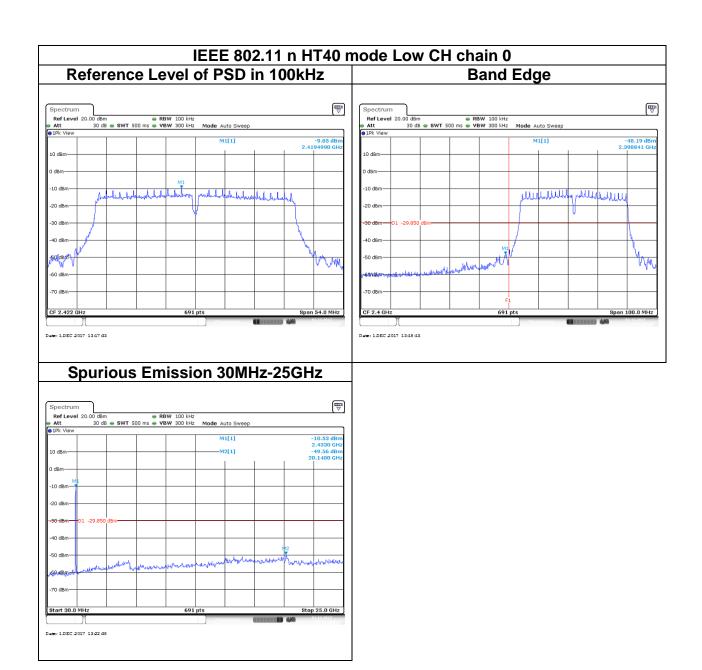




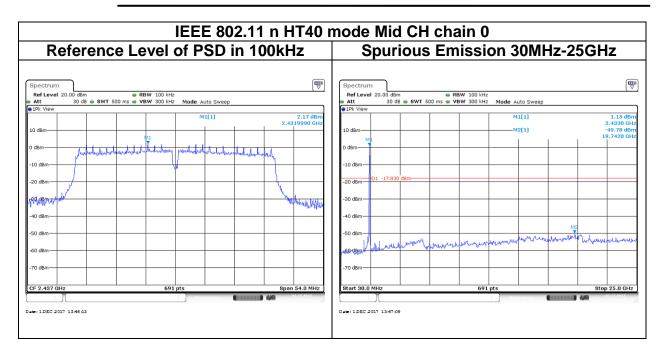


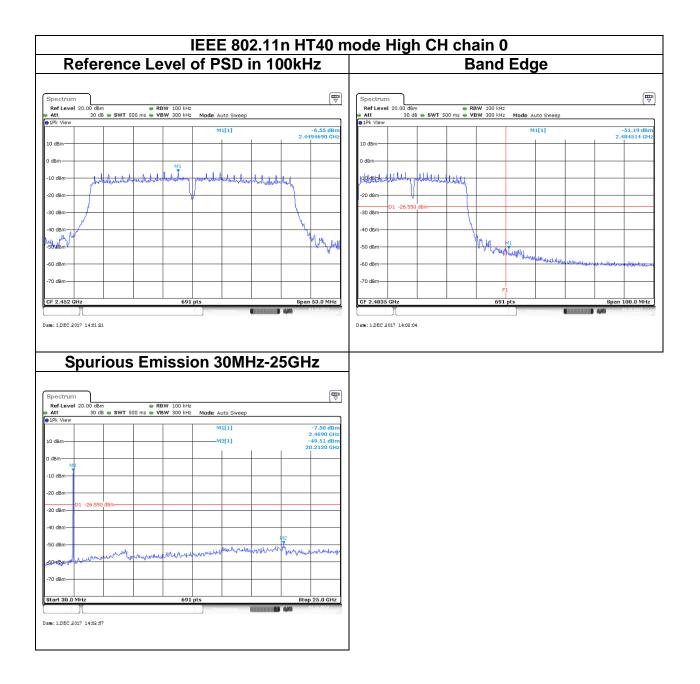


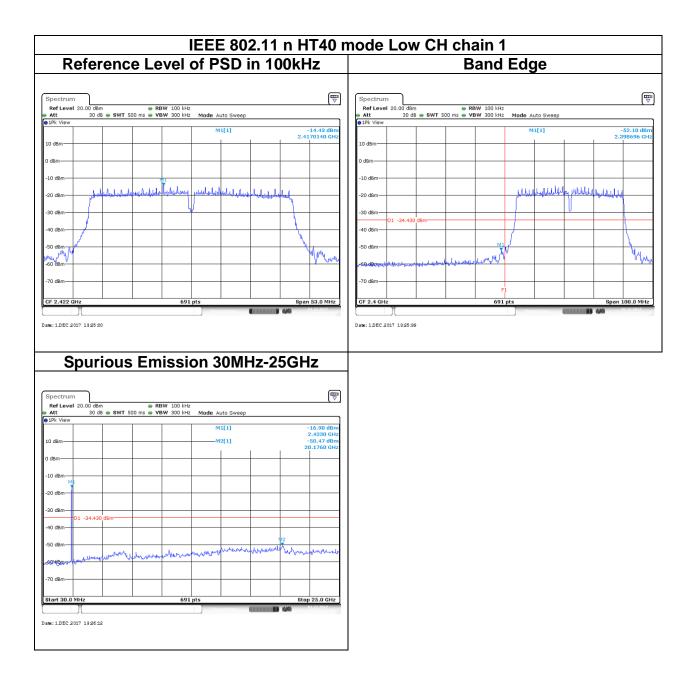




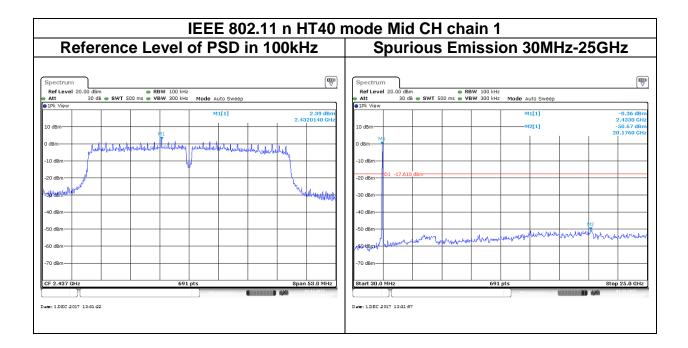
Report No.: T171129W02-RP1

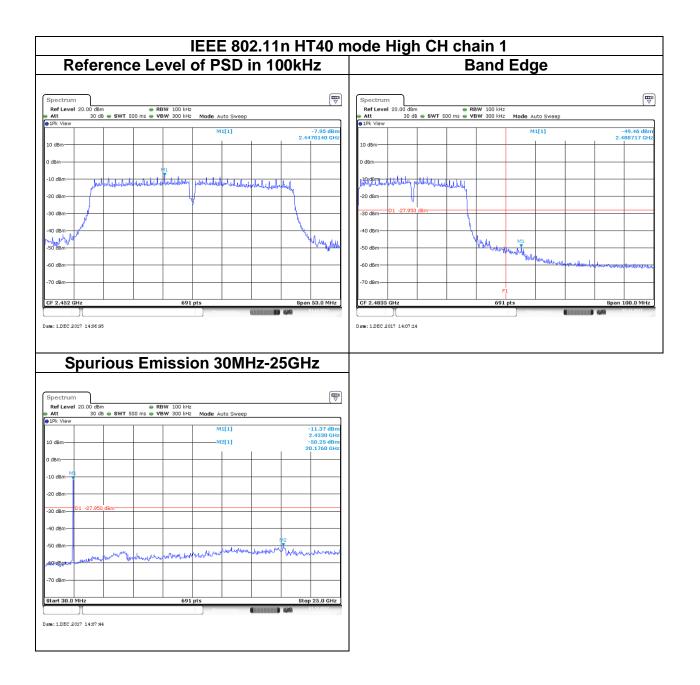












5.6 RADIATION BANDEDGE AND SPURIOUS EMISSION

5.6.1 Test Limit

FCC according to §15.247(d), §15.209 and §15.205,

IC according to RSS-247 section 5.5, RSS-Gen, Section 8.9 and 8.10

In any 100 kHz bandwidth outside the authorized frequency band, all harmonic and spurious must be least 20 dB below the highest emission level with the authorized frequency band. Radiation emission which fall in the restricted bands must also follow the FCC section 15.209 as below limit in table.

Below 30 MHz

| Frequency | Field Strength (microvolts/m) | Magnetic H-Field (microamperes/m) | Measurement Distance (metres) |
|---------------|----------------------------------|---|-------------------------------------|
| 9-490 kHz | 2,400/F (F in kHz) | 2,400/F (F in kHz) | 300 |
| 490-1,705 kHz | 24,000/F (F in kHz) | 24,000/F (F in kHz) | 30 |
| 1.705-30 MHz | 30 | N/A | 30 |

Above 30 MHz

| Frequency | Field Strength (microvolts/m) | Measurement Distance (metres) |
|-----------|----------------------------------|-------------------------------------|
| 30-88 | 100 | 3 |
| 88-216 | 150 | 3 |
| 216-960 | 200 | 3 |
| Above 960 | 500 | 3 |

5.6.2 Test Procedure

Test method Refer as KDB 662911 D01 v02 r01, KDB 558074 D01 V04, Section 12.1.

1. The EUT is placed on a turntable, Above 1 GHz is 1.5m and below 1 GHz is 0.8m above ground plane. The EUT Configured un accordance with ANSI C63.10, and the EUT set in a continuous mode.

2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level. And EUT is set 3m away from the receiving antenna, which is scanned from 1m to 4m above the ground plane to find out the highest emissions. Measurement are made polarized in both the vertical and the horizontal positions with antenna.

3. Span shall wide enough to full capture the emission measured. The SA from 9kHz to 26.5GHz set to the low, Mid and High channels with the EUT transmit.

Note: No emission found between lowest internal used/generated frequency to 30MHz (9KHz~30MHz)

Remark:

Although these tests were performed other than open area test site, adequate comparison measurements were confirmed against 30 m open are test site. Therefore sufficient tests were made to demonstrate that the alternative site produces results that correlate with the ones of tests made in an open field based on KDB 937606.

- 4. The SA setting following :
 - (1) Below 1G : RBW = 100kHz, VBW ≥ 3 RBW, Sweep = Auto, Detector = Peak, Trace = Max hold.
 - (2) Above 1G :
 - (2.1) For Peak measurement : RBW = 1MHz, VBW ≥ 3 RBW, Sweep = Auto, Detector = Peak, Trace = Max hold.
 - (2.2) For Average measurement : RBW = 1MHz, VBW

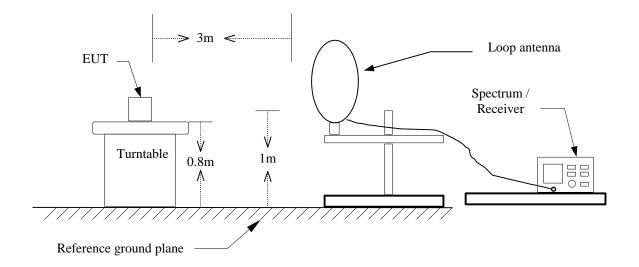
If Duty Cycle \geq 98%, VBW=10Hz.

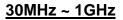
[·]If Duty Cycle < 98%, VBW=1/T.

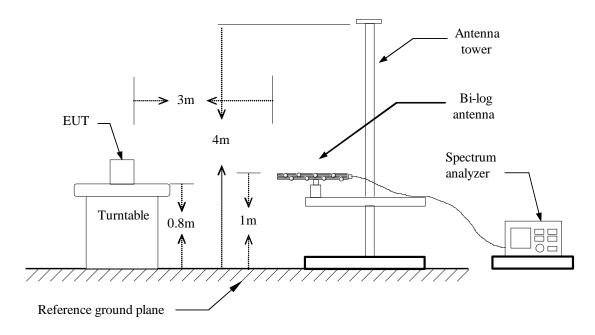
| Configuration | Duty Cycle (%) | T(ms) | 1/T (kHz) | VBW Setting |
|---------------|----------------|--------|-----------|-------------|
| 802.11b | 99% | 8.7700 | - | 10Hz |
| 802.11g | 90% | 1.5000 | 0.667 | 680Hz |
| 802.11n HT20 | 91% | 1.4200 | 0.704 | 750Hz |
| 802.11n HT40 | 82% | 0.7200 | 1.389 | 1.5kHz |

5.6.3 Test Setup

<u>9kHz ~ 30MHz</u>



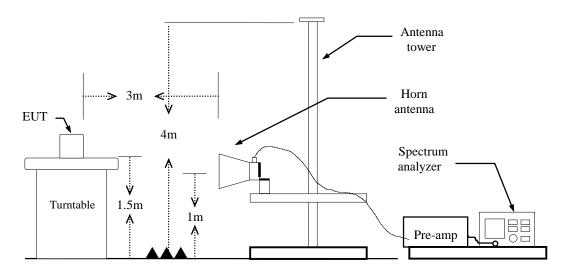




 Compliance Certification Services Inc.

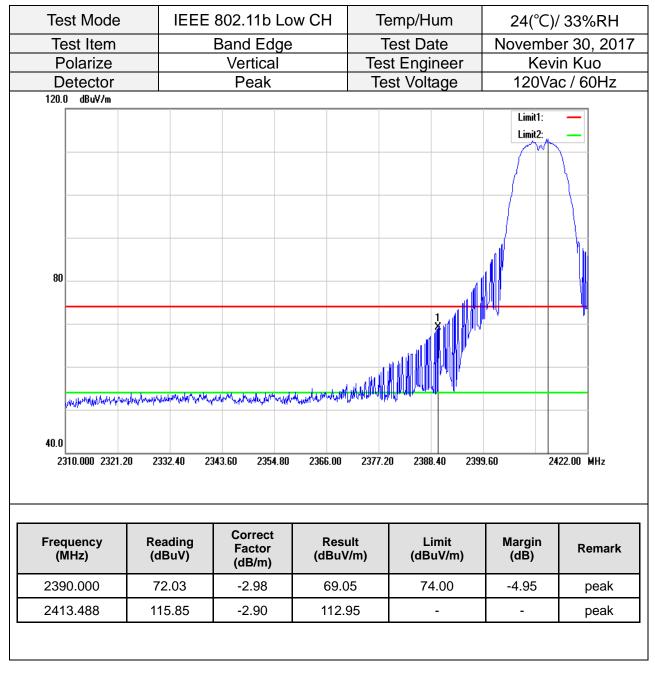
 FCC ID: PPQ-WCBN3507R
 ISED NO: 4491A-WCBN3507R

Above 1 GHz

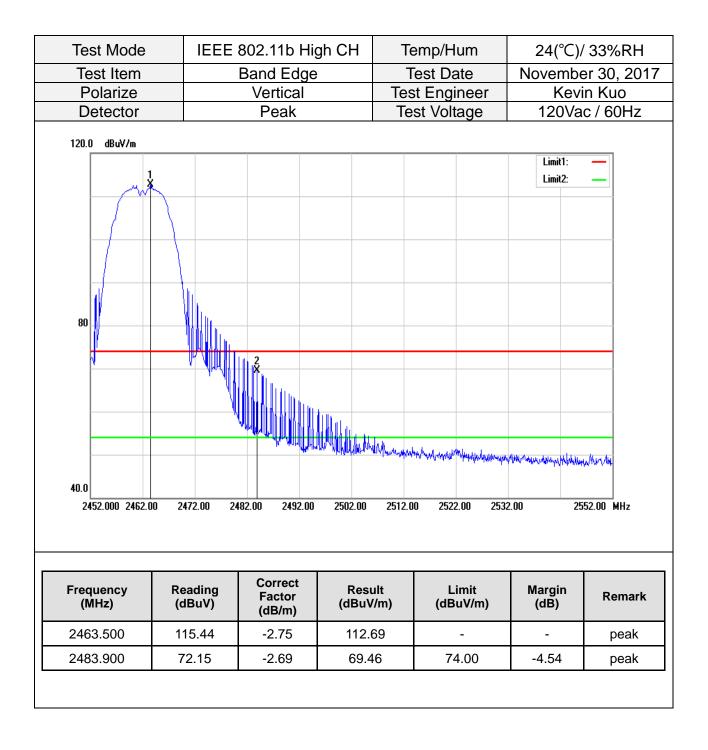


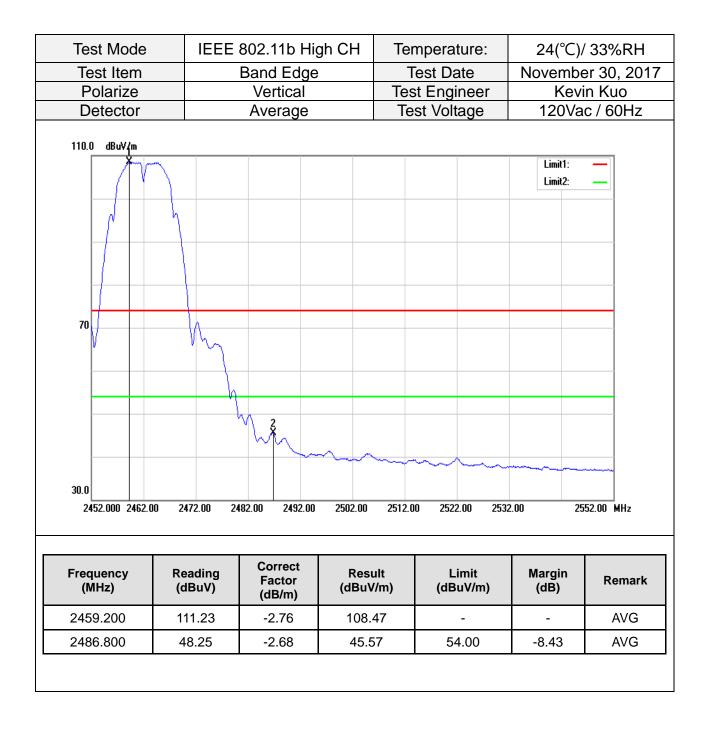
5.6.4 Test Result

Band Edge Test Data



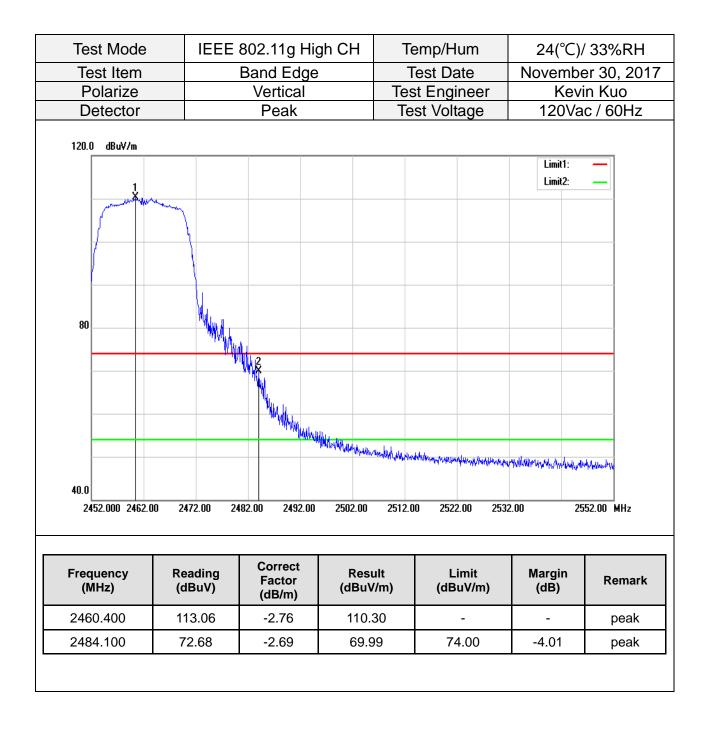
| Test Mode | IEEE | 802.11b Lo | W CH | lemperature: | | / 33%RH |
|---------------------|-------------------|-----------------------------|--------------------|-------------------|-----------------|------------|
| Test Item | | Band Edge | | Test Date | November 30, 20 | |
| Polarize | | Vertical | Т | est Engineer | | in Kuo |
| Detector | | Average | | Test Voltage | 120Va | c / 60Hz |
| 120.0 dBu¥/m | | | | | | |
| | | | | | Limit1: | — |
| | | | | | Limit2: | |
| | | | | | | |
| | | | | | | 4 |
| 00 | | | | | | |
| 80 | | | | | | |
| | | | | | \mathcal{N} | ₩ |
| | | | | | | |
| 40.0 | | | | | | |
| 40.0 2310.000 2321. | 20 2332.40 2 | 343.60 2354.80 | 2366.00 23 | 77.20 2388.40 239 | 9.60 24 | 122.00 MHz |
| | | | | | | |
| Frequency (MHz) | Reading (dBuV) | Correct Factor (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
| 2390.000 | 51.06 | -2.98 | 48.08 | 54.00 | -5.92 | AVG |
| 2414.720 | 111.78 | -2.90 | 108.88 | - | - | AVG |
| | | | | | | |





| Test Mode | IEEE | 802.11g Lo | w CH | Ter | mp/Hum | 24(°C) | / 33%RH |
|-------------------------|-------------------|---|---------------|--|-------------------------|--------------------|------------------------|
| Test Item | | Band Edge |) | | st Date | | er 30, 20 ⁻ |
| Polarize | | Vertical | | | Engineer | | in Kuo |
| Detector | | Peak | | Tes | t Voltage | 120Va | c / 60Hz |
| 120.0 dBuV/m | | | | | | Limit1: Limit2: | |
| 80 | | un of ferture to the ferture of the out | dar.Jahranga | - ALARAN AND AND AND AND AND AND AND AND AND A | white the second second | | |
| 40.0 2310.000 2321.2 | 20 2332.40 2 | 2343.60 2354.80 | 2366.00 | 2377.20 | 2388.40 2 | 399.60 24 | 422.00 MHz |
| Frequency (MHz) | Reading (dBuV) | Correct Factor (dB/m) | Rest (dBuV | | Limit (dBuV/m) | Margin (dB) | Remark |
| 2390.000 | 71.81 | -2.98 | 68.8 | 33 | 74.00 | -5.17 | peak |
| 2412.144 | 110.95 | -2.91 | 108. | 04 | - | - | peak |
| | | | | | | | |

| Test Mode | IEEE | 802.11g Lo | | | perature: | 24(°C)/ 33%RH | | |
|--------------------|-------------------|-----------------------------|---------------|---------|-------------------|----------------|-----------|--|
| Test Item | | Band Edge | • | | st Date | Novembe | | |
| Polarize | | Vertical | | | Engineer | | n Kuo | |
| Detector | | Average | | Tes | t Voltage | 120Va | c / 60Hz | |
| 110.0 dBuV/m | | | | | | Limit1: | — | |
| 70 | | | | | | | | |
| 30.0 | 20 2332.40 | 2343.60 2354.80 | 2366.00 | 2377.20 | 2388.40 239 | 9.60 24 | 22.00 MHz | |
| Frequency (MHz) | Reading (dBuV) | Correct Factor (dB/m) | Resı (dBuV | | Limit (dBuV/m) | Margin (dB) | Remark | |
| 2390.000 | 53.87 | -2.98 | 50.8 | 9 | 54.00 | -3.11 | AVG | |
| 2410.240 | 100.56 | -2.92 | 97.6 | 64 | - | - | AVG | |
| | | | | | | | | |



| Test Mode | IEEE | 802.11g Hi | gh CH | Ten | nperature: | 24(°C) |)/ 33%RH | |
|------------------------|-------------------|-----------------------------|---------------|---------|-------------------|--------------------|-----------------|--|
| Test Item | | Band Edge | ; | | est Date | | November 30, 20 | |
| Polarize | | Vertical | | | t Engineer | | /in Kuo | |
| Detector | | Average | | Tes | st Voltage | 120Va | ac / 60Hz | |
| 110.0 dBu¥/m 1 | | | | | | Limit1: Limit2: | | |
| 70 | | 2 | | | | | | |
| 30.0 2452.000 2462. | 00 2472.00 2 | 482.00 2492.00 | 2502.00 | 2512.00 |) 2522.00 | 2532.00 2 | 2552.00 MHz | |
| Frequency (MHz) | Reading (dBuV) | Correct Factor (dB/m) | Resı (dBuV | | Limit (dBuV/m) | Margin (dB) | Remark | |
| 2461.000 | 103.03 | -2.76 | 100.2 | 27 | - | - | AVG | |
| 2483.500 | 53.19 | -2.69 | 50.5 | 0 | 54.00 | -3.50 | AVG | |
| | | | | | | | | |

| Test Mode | IEEE 802.2 | 1n HT20 L | ow CH | Те | mp/Hum | | 24(°C)/ | ′ 33%RH |
|--|--|--|---------------------------|---------|------------------|---------|--------------------|------------|
| Test Item | | and Edge | | | est Date | | | er 12, 201 |
| Polarize | | Vertical | | | t Enginee | | | Chuang |
| Detector | | Peak | | Tes | st Voltage | Э | 120Va | c / 60Hz |
| 120.0 dBuV/m | | | | | | | Limit1: Limit2: | |
| _{สุทรภ} ามสาวที่สุนที่เหนือสุนิทร 40.0 2310.000 2321. | <u>ատեւմ հայիստուն։</u> 20 2332.40 23 | y /h.alddia/c.ianul/wa/May 43.60 2354.80 | (Maxw)haaaaaya 2366.00 | 2377.20 | | 2399.60 |) 24 | 22.00 MHz |
| Frequency (MHz) | Reading (dBuV) | Correct Factor (dB/m) | Resi (dBuV | | Limit (dBuV/n | | Margin (dB) | Remark |
| 2389.632 | 73.76 | -2.98 | 70.7 | '8 | 74.00 | | -3.22 | peak |
| 2409.792 | 111.72 | -2.92 | 108. | 80 | - | | - | peak |
| | | | | - | | | | |

| Test Mode | IEEE 802.1 | 1n HT20 Hi | gh CH | Te | mp/Hu | um | | / 33%RH |
|-------------------------------------|-------------------------------------|--|---|-----------------|----------------|--------------------------|--|----------------|
| Test Item | | nd Edge | | | est Da | | Decemb | er 12, 2017 |
| Polarize | \\ | /ertical | | Test Engineer | | | | Chuang |
| Detector | | Peak | | Tes | st Volta | age | 120Va | ac / 60Hz |
| 120.0 dBuV/m | | 2 | | | | | | |
| | | whether | Marganete | | | | | |
| | | | A TO FOR THE AND A TO A T | the property of | nuruhlanthuyuh | Mulluhan | and manifest the second s | erron with the |
| 40.0 | | | | | | | | |
| 2452.000 2462 Frequency (MHz) | .00 2472.00 24 Reading (dBuV) | 82.00 2492.00 Correct Factor (dB/m) | 2502.00 Resu (dBuV | | Li | .00 2532 mit JV/m) | 2.00 2 Margin (dB) | Remark |
| 2462.000 | 112.09 | -2.76 | 109.3 | 33 | | - | - | peak |
| 2483.900 | 75.00 | -2.69 | 72.3 | 31 | 74 | .00 | -1.69 | peak |
| | | | | | | | | |

| Test Mode | IEEE 802.1 | 1n HT20 Hi | gh CH | Temp | perature: | 24(°C)/ | 33%RH |
|--------------------|-------------------|-----------------------------|-----------------|---------|-------------------|--------------------|-------------------------|
| Test Item | | ind Edge | | | st Date | | er 12, 201 [°] |
| Polarize | | /ertical | | | Engineer | Jerry | Chuang |
| Detector | A | verage | | Test | Voltage | 120Va | c / 60Hz |
| 110.0 dBu¥/m | | | | | | Limit1: | |
| 1 | mum | | | | | Limit1: Limit2: | |
| | | | | | | | |
| 70 | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| 30.0 | | | | | | | |
| 2452.000 2462. | 00 2472.00 24 | 482.00 2492.00 | 2502.00 | 2512.00 | 2522.00 2532 | 2.00 25 | 52.00 MHz |
| Frequency (MHz) | Reading (dBuV) | Correct Factor (dB/m) | Resul (dBuV/ | | Limit (dBuV/m) | Margin (dB) | Remark |
| | 100.77 | -2.76 | 98.01 | | - | - | AVG |
| 2461.300 | | | | | | | |

| Test Mode | IEEE 802. | 11n HT40 L | ow CH | Temp/H | lum | 24(°C)/ | ′ 33%RH |
|-------------------------|---|---|-------------------|-------------|---------------|------------------------------|-----------|
| Test Item | Ba | and Edge | | Test Da | ate | December 12, 20 ² | |
| Polarize | | Vertical | | Test Eng | | Jerry | Chuang |
| Detector | | Peak | | Test Vol | tage | 120Va | c / 60Hz |
| 120.0 dBuV/m | | | | | 2 | | |
| 40.0 2310.000 2323.2 | ณมุโกฟ _ฟ (การประชา 0 2336.40 2: | waylwyw 45 m 10 m 1 | 2376.00 | 2389.20 240 | 2.40 2415 | 5.60 24 | 42.00 MHz |
| | | | | | | | |
| Frequency (MHz) | Reading (dBuV) | Correct Factor (dB/m) | Result (dBuV/r | | imit uV/m) | Margin (dB) | Remark |
| 2390.000 | 73.99 | -2.98 | 71.01 | 7 | 4.00 | -2.99 | peak |
| | | -2.90 | 101.80 | <u> </u> | | - | peak |

| Test Mode | IEEE 802. | 11n HT40 L | ow CH Te | mperature: | 24(°C)/ 33%RH | |
|--------------------|-------------------|---------------------------|--------------------|-------------------|--------------------|-----------|
| Test Item | | and Edge | | Test Date | December 12, 201 | |
| Polarize | | Vertical | | st Engineer | | Chuang |
| Detector | | Average | Te | est Voltage | 120Vac / 60Hz | |
| 110.0 dBuV/m | | | | phy and a | Limit1: Limit2: | |
| 30.0 | | 349.60 2362.80 Correct | 2376.00 2389. | | | 42.00 MHz |
| Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
| 0000 000 | 56.08 | -2.98 | 53.10 | 54.00 | -0.90 | AVG |
| 2390.000 | | | | | | |

| | IEEE 802.11n HT40 High CH | | | Ter | np/Hum | 24(°C)/ 33%RH | |
|--------------------|---------------------------|-----------------------------|------------------|---------------|-----------------------------|--------------------|---------------------|
| Test Item | Ba | | Te | st Date | December 12, 201 | | |
| Polarize | Vertical | | | Test Engineer | | Jerry Chuang | |
| Detector | Peak | | | Tes | t Voltage | 120Vac / 60Hz | |
| 120.0 dBuV/m | | | 2 2 41/141 | | | Limit1: Limit2: | |
| 40.0 | 0 2456.00 24 | 68.00 2480.00 | 2492.00 | 2504.00 | чаличнитори 2516.00 2520 | | ⊾Лщиму 52.00 MHz |
| Frequency (MHz) | Reading (dBuV) | Correct Factor (dB/m) | Resu (dBuV/ | | Limit (dBuV/m) | Margin (dB) | Remark |
| 2456.840 | 109.15 | -2.78 | 106.3 | 37 | - | - | peak |
| | 74.35 | -2.67 | 71.6 | 8 | 74.00 | -2.32 | peak |

| V | nd Edge /ertical verage | Tes | Test Date st Engineer | Decembe Jerry (| |
|-------------------|-------------------------------|---|--|--|---|
| | | | | Jerry (| Chuand |
| A | verage | _ | | | |
| | | le | est Voltage | 120Va | c / 60Hz |
| | | | | Limit1: Limit2: | |
| | Same | | | | |
| 4.00 2456.00 24 | 68.00 2480.00 | 2492.00 2504.1 | 00 2516.00 252 | B.00 25 | 52.00 MHz |
| | | | | | |
| Reading (dBuV) | Correct Factor (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
| 99.81 | -2.79 | 97.02 | - | - | AVG |
| | -2.69 | 53.78 | 54.00 | -0.22 | AVG |
| | 4.00 2456.00 24 | 4.00 2456.00 2468.00 2480.00 Reading (dBuV) Correct Factor (dB/m) | Reading (dBuV) Correct Factor (dB/m) Result (dBuV/m) | No. No. <td>No. No. No.</td> | No. No. |

Below 1G Test Data

| Test Mode | | Mode 1 | | Temp | o/Hum | 24(°C)/ | / 33%RH |
|----------------------------------|-------------------|-----------------------------|-----------------|--------|-------------------|--------------------|------------|
| Test Item | | 30MHz-1GH | z | | Date | | er 2, 201 |
| Polarize | | Vertical | | | ngineer | | in Kuo |
| Detector | | Peak | | Test \ | /oltage | 120Va | c / 60Hz |
| 80.0 dBuV/m | i i | - i - i | i | | i. | | |
| | | | | | | Limit1: Margin: | _ |
| | | | | | | | |
| | | | | | | | |
| 30 | 1 X | 2 X | | | 4 X | | 6 X |
| | | | 3 X | | | | |
| | | | | | | | |
| | | | | | | | |
| -20 | | | | | | | |
| 30.000 127.00 | 224.00 | 321.00 418.00 | 515.00 | 612.00 | 709.00 806. | 00 10 |)00.00 MHz |
| Frequency (MHz) | Reading (dBuV) | Correct Factor (dB/m) | Resul (dBuV/ | | Limit (dBuV/m) | Margin (dB) | Remark |
| 240.4900 | 50.91 | -16.12 | 34.79 |) | 46.02 | -11.23 | peak |
| 345.2500 | 44.90 | -13.09 | 31.81 | | 46.02 | -14.21 | peak |
| 499.4800 | 33.39 | -8.50 | 24.89 | | 46.02 | -21.13 | peak |
| | 36.64 | -4.85 | 31.79 | | 46.02 | -14.23 | peak |
| 703.1800 | | | 0101 | | 46.02 | -11.41 | peak |
| 703.1800 719.6700 960.2300 | 39.26 36.69 | -4.65 | 34.61 | | 54.00 | | Poon |

| Test Mo | de | | Mode 1 | | Te | mp/Hum | 24(°C) | / 33%RF |
|----------------------|----------|-----------------|-----------------------------|----------------|--------|-------------------|--------------------|--------------|
| Test Ite | | 3 | 0MHz-1GF | | | est Date | Decemb | |
| Polariz | | | Horizontal | | | t Engineer | | in Kuo |
| Detect | or | | Peak | | Tes | st Voltage | 120Va | ic / 60Hz |
| 80.0 dBuV/ | 'm | | | | | | | |
| | | | | | | | Limit1: Margin: | |
| | | | | | | | | |
| | | | | | | | | F |
| 30 | | | | _ | | | | 6 X |
| | × | 2 ³ | | 4 5 X X | | | | |
| | | | | | | | | |
| | | | | | | | | |
| -20 | | | | | | | | |
| 30.000 1 | 127.00 2 | 224.00 32 | 1.00 418.00 | 515.00 | 612.00 | 709.00 806 | .00 10 | 000.00 MHz |
| Frequency (MHz) | | eading dBuV) | Correct Factor (dB/m) | Resu (dBuV/ | | Limit (dBuV/m) | Margin (dB | Remar |
| | | 43.64 | -16.69 | 26.9 | 5 | 43.52 | -16.57 | peak |
| 110.5100 | | 43.04 | | | | | | |
| 110.5100 240.4900 | | 43.04 39.46 | -16.12 | 23.3 | 4 | 46.02 | -22.68 | peak |
| | ; | | | | | 46.02 46.02 | -22.68 -20.74 | peak peak |
| 240.4900 | | 39.46 | -16.12 | 23.3 | 8 | | | |
| 240.4900 257.9500 | | 39.46 40.87 | -16.12 -15.59 | 23.3 25.2 | 8 | 46.02 | -20.74 | peak |

30MHz(9KHz~30MHz)

Above 1G Test Data

| Test Mode | | IEEE | 802.11b | Low CH | Te | emp/H | um | | C)/ 33%RH |
|----------------|--------|---------|------------------|--------------|---------|----------|-----------|---------|--------------|
| Test Item | | | Harmon | | | lest Da | | | nber 5, 201 |
| Polarize | | | Vertica | | | st Engi | | | ry Chuang |
| Detector | | Pea | k and Av | erage | Te | est Volt | age | 120 | Vac / 60Hz |
| 110.0 dBuV/m | | | | | | | | | |
| | | | | | | | | Limit1: | |
| | | | | | | | | Limit2 | · |
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| 70 | | | | | | | | | |
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| 30.0 | | | | | | | | | |
| 1000.000 3550. | 00 610 | 0.00 86 | 50.00 1120 | 0.00 13750.0 | 0 16300 | .00 1889 | 50.00 214 | DO.OO | 26500.00 MHz |
| | | | | | | | | | |
| Frequency | Rea | ading | Correct | Res | sult | L | imit | Margin | Damark |
| (MHz) | (dE | 3uV) ¯ | Factor (dB/m) | (dBu | V/m) | (dB | uV/m) | (dB) | Remark |
| 4827.000 | 43 | 3.96 | 4.38 | 48 | 34 | 74 | 4.00 | -25.66 | peak |
| N/A | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

Remark:

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit

| | IE | EE 802.11b l | | | emp/H | | - |)/ 33%RH |
|---|---------------------------------|---------------------------------------|--------------------------------|-------------------|---------------------------|----------------------------|--------------------------|------------------------|
| Test Item | | Harmoni | | | est Da | | | ber 5, 201 |
| Polarize Detector | | Horizonta Peak and Ave | | | <u>st Engi</u> st Volt | | | / Chuang /ac / 60Hz |
| Detector | | | ciago | | 31 VOI | ayc | 1200 | |
| 110.0 dBuV/m | | | | | | | Limit1: | |
| | | | | | | | Limit2: | _ |
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| | | | | | | | | 1 |
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| | | | | | | | | |
| 30.0 | 00 6100 00 | 8650.00 11200 | 0.00 13750.00 | 16300 | 00 1885 | 50.00 214 | 00.00 | 26500 00 MHz |
| 30.0 1000.000 3550. | 00 6100.00 | 8650.00 11200 |).00 13750.00 | 16300.0 | 00 1885 | 50.00 214 | 00.00 | 26500.00 MHz |
| | 00 6100.00 | | 0.00 13750.00 | 16300.1 | 00 1885 | 50.00 214 | 00.00 | 26500.00 MHz |
| | 00 6100.00 Reading (dBuV) | Correct | 0.00 13750.00 Resi (dBuV | ult | L | 50.00 214 imit uV/m) | 00.00 Margin (dB) | 26500.00 MHz Remark |
| 1000.000 3550. Frequency | Reading | G Correct Factor | Resu | ult //m) | L (dB | imit | Margin | |
| 1000.000 3550. Frequency (MHz) | Reading (dBuV) | G Correct Factor (dB/m) | Resu (dBuV | ult //m) | L (dB | imit uV/m) | Margin (dB) | Remark |
| 1000.000 3550. Frequency (MHz) 4827.000 | Reading (dBuV) | G Correct Factor (dB/m) | Resu (dBuV | ult //m) | L (dB | imit uV/m) | Margin (dB) | Remark |
| 1000.000 3550. Frequency (MHz) 4827.000 | Reading (dBuV) | G Correct Factor (dB/m) | Resu (dBuV | ult //m) | L (dB | imit uV/m) | Margin (dB) | Remark |
| 1000.000 3550. Frequency (MHz) 4827.000 | Reading (dBuV) | G Correct Factor (dB/m) | Resu (dBuV | ult //m) | L (dB | imit uV/m) | Margin (dB) | Remark |
| 1000.000 3550. Frequency (MHz) 4827.000 | Reading (dBuV) | G Correct Factor (dB/m) | Resu (dBuV | ult //m) | L (dB | imit uV/m) | Margin (dB) | Remark |
| 1000.000 3550. Frequency (MHz) 4827.000 | Reading (dBuV) | G Correct Factor (dB/m) | Resu (dBuV | ult //m) | L (dB | imit uV/m) | Margin (dB) | Remark |
| 1000.000 3550. Frequency (MHz) 4827.000 | Reading (dBuV) | G Correct Factor (dB/m) | Resu (dBuV | ult //m) | L (dB | imit uV/m) | Margin (dB) | Remark |
| 1000.000 3550. Frequency (MHz) 4827.000 N/A N/A emark: 1. Measu | Reading (dBuV) 42.05 | G Correct Factor (dB/m) 4.38 | Rest (dBuV 46.4 | ult //m) I3 | L (dB 74 | imit uV/m) 4.00 | Margin (dB) -27.57 | Remark peak |
| 1000.000 3550. Frequency (MHz) 4827.000 N/A N/A emark: 1. Measu funda | Reading (dBuV) 42.05 | G Correct Factor (dB/m) 4.38 | Rest (dBuV 46.4 | ult //m) I3 | L (dB 74 | imit uV/m) 4.00 | Margin (dB) -27.57 | Remark peak |

| Test Mode | IEEI | E 802.11b M | id CH | | emp/Hu | | | C)/ 33%RH |
|--|----------------------------|--------------------------------------|-----------------------|--------------------------|---------------------|----------------------------|--------------------------|------------------------|
| Test Item | | Harmonic | | | est Dat | | | <u>nber 5, 201</u> |
| Polarize | De | Vertical | | | t Engin | | | y Chuang |
| Detector | Pe | eak and Aver | rage | Ie | st Volta | ge | 120\ | /ac / 60Hz |
| 110.0 dBuV/m | | | | | | | | |
| | | | | | | | Limit1: | — |
| | | | | | | | Limit2: | |
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| 30.0 | | | | | | | | |
| 30.0 1000.000 3550.0 | 00 6100.00 | 8650.00 11200.0 | 0 13750.00 | 16300. | 00 18850. | 00 2140 | 00.00 | 26500.00 MHz |
| | 00 6100.00 | 8650.00 11200.0 | 0 13750.00 | 16300. | 00 18850. | 00 214(| 00.00 | 26500.00 MHz |
| | 00 6100.00 | | 0 13750.00 | 16300. | 00 18850. | 00 2140 |)0.00 | 26500.00 MHz |
| 1000.000 3550.1 | Reading | 8650.00 11200.0 Correct Factor | Resu | ılt | Lin | nit | Margin | 26500.00 MHz Remark |
| 1000.000 3550.0 | | Correct | | ılt | | nit | | |
| 1000.000 3550.1 | Reading | Correct Factor | Resu | ılt /m) | Lin | nit V/m) | Margin | |
| 1000.000 3550.1 Frequency (MHz) | Reading (dBuV) | Correct Factor (dB/m) | Resu (dBuV | ılt /m) | Lin (dBu' | nit V/m) | Margin (dB) | Remark |
| 1000.000 3550. Frequency (MHz) 4876.000 | Reading (dBuV) | Correct Factor (dB/m) | Resu (dBuV | ılt /m) | Lin (dBu' | nit V/m) | Margin (dB) | Remark |
| 1000.000 3550. Frequency (MHz) 4876.000 | Reading (dBuV) | Correct Factor (dB/m) | Resu (dBuV | ılt /m) | Lin (dBu' | nit V/m) | Margin (dB) | Remark |
| 1000.000 3550. Frequency (MHz) 4876.000 | Reading (dBuV) | Correct Factor (dB/m) | Resu (dBuV | ılt /m) | Lin (dBu' | nit V/m) | Margin (dB) | Remark |
| 1000.000 3550. Frequency (MHz) 4876.000 | Reading (dBuV) | Correct Factor (dB/m) | Resu (dBuV | ılt /m) | Lin (dBu' | nit V/m) | Margin (dB) | Remark |
| 1000.000 3550. Frequency (MHz) 4876.000 | Reading (dBuV) | Correct Factor (dB/m) | Resu (dBuV | ılt /m) | Lin (dBu' | nit V/m) | Margin (dB) | Remark |
| 1000.000 3550.1 Frequency (MHz) 4876.000 N/A | Reading (dBuV) | Correct Factor (dB/m) | Resu (dBuV | ılt /m) | Lin (dBu' | nit V/m) | Margin (dB) | Remark |
| 1000.000 3550.0 Frequency (MHz) 4876.000 N/A | Reading (dBuV) 45.36 | Correct Factor (dB/m) 4.47 | Resu (dBuV 49.8 | ılt /m) 3 | Lin (dBu' 74. | nit V/m) 00 | Margin (dB) -24.17 | Remark |
| 1000.000 3550.0 Frequency (MHz) 4876.000 N/A N/A Pmark: 1. Measu | Reading (dBuV) 45.36 | Correct Factor (dB/m) 4.47 | Resu (dBuV 49.8 | ılt /m) 3 | Lin (dBu' 74. | nit V/m) 00 | Margin (dB) -24.17 | Remark |
| 1000.000 3550.0 Frequency (MHz) 4876.000 N/A Pemark: 1. Measu funda | Reading (dBuV) 45.36 | Correct Factor (dB/m) 4.47 | Resu (dBuV 49.8 | Ilt /m) 3 the 1 | Lin (dBu' 74. | nit V/m) 00 monic | Margin (dB) -24.17 | Remark |

| | IE | EEE 802.11b N | | | mp/Hum | | | 33%RH |
|-----------------------------|--------------------------------|---------------------------------|-------------------------------|------------|--------------------------------|----------|----------------------|---------------------------|
| Test Item | | Harmonio | | | est Date | | | er 5, 2017 |
| Polarize Detector | | Horizonta Peak and Ave | | | t Enginee st Voltage | | | <u>Chuang</u> c / 60Hz |
| 110.0 dBuV/m | | | | | | | Limit1: Limit2: | |
| 70 | 1 X | | | | | | | |
| 30.0 1000.000 3550. | 00 6100.00 | 8650.00 11200. | .00 13750.00 | 16300.0 | 0 18850.00 | 21400.00 | 26 | 500.00 MHz |
| | 00 6100.00 Readin (dBuV) | g Correct | .00 13750.00 Resu (dBuV | ılt | 0 18850.00 Limit (dBuV/m | M | 26 largin (dB) | 500.00 MHz Remark |
| 1000.000 3550. Frequency | Readin | g Correct 9 Factor (dB/m) | Resu | ılt /m) | Limit |) M | largin | |

| Ta at Itana | | E 802.11b Hi | ghon | Temp/Hum | , , | / 33%RH |
|--------------------------------------|--------------------------------|-----------------------------|--------------------------------------|---|-----------------------------|---------------------------|
| Test Item | | Harmonic | | Test Date | | er 5, 201 |
| Polarize Detector | P | Vertical eak and Aver | | est Engineer Test Voltage | | <u>Chuang</u> c / 60Hz |
| 110.0 dBuV/m | | | | | Limit1: Limit2: | |
| | 1 | | | | | |
| 30.0 1000.000 3550. | | 8650.00 11200.00 | 0 13750.00 163 | 300.00 18850.00 21 | 400.00 26 | 500.00 MHz |
| | | Correct Factor | 0 13750.00 163 Result (dBuV/m) | 300.00 18850.00 21 Limit (dBuV/m) | 400.00 26 Margin (dB) | |
| 1000.000 3550. Frequency | 00 6100.00 Reading | Correct | Result | Limit | Margin | S500.00 MHz Remark |
| 1000.000 3550. Frequency (MHz) | 8 6100.00 Reading (dBuV) | Correct Factor (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |

| LERF | Comp | liance Certificat | ion Servi | ces Inc. | |
|----------|-----------|-------------------|-----------|-----------------|----------------------------|
| | FCC ID: F | PQ-WCBN3507R | ISED NO: | 4491A-WCBN3507R | Report No.: T171129W02-RP1 |
| | | | | | |
| Test Mod | le | IEEE 802.11b H | ligh CH | Temp/Hum | 24(°C)/ 33%RH |

| 110.0 dBuV/m Image: constrained and constraine | lest Mode | | EEE 802 | 2.11b H | ligh CH | | emp/H | | | C)/ 33% | |
|--|-----------|----------------|-----------|----------|-------------|-----------|---------|----------|----------------|------------|---------|
| Detector Peak and Average Test Voltage 120Vac / 60Hz 110.0 dBuV/m Limit1: | | | | | | | | | | | |
| 110.0 dBuV/m 110.0 dBuV 110.0 dBuV <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<> | | | | | | | | | | | |
| Trequency Reading Correct Factor (dB/m) Result (dBuV/m) Limit (dBuV/m) Margin (dB) Remark | | | | | | | | | Limit1 | : — | <u></u> |
| ID00.000 3550.00 6100.00 8650.00 11200.00 13750.00 16300.00 18850.00 21400.00 26500.00 MHz Frequency (MHz) Reading (dBuV) Correct Factor (dB/m) Result (dBuV/m) Limit (dBuV/m) Margin (dB) Remark 4925.000 44.91 4.55 49.46 74.00 -24.54 peak | 70 | | | | | | | | | | |
| Frequency (MHz)Reading (dBuV)Factor (dB/m)Result (dBuV/m)Limit (dBuV/m)Margin (dB)Remark Remark4925.00044.914.5549.4674.00-24.54peak | | .00 6100.0 | 10 8650.0 | 0 11200. | 00 13750.00 |) 16300.1 | 00 1885 | 0.00 214 | 00.00 | 26500.00 M | lHz |
| | | Readi (dBu' | ng V) | Factor | | | | | Margin (dB) | Re | mark |
| N/A | 4925.000 | 44.9 | 1 | 4.55 | 49.4 | 46 | 74 | 1.00 | -24.54 | . p | eak |
| | N/A | | | | | | | | | | |
| | | | | | | | | | | | |

Remark:

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit

| E | | 212 | Col |
|---|--|------|-----|
| | | 40.0 | FCC |

R Compliance Certification Services Inc.

FCC ID: PPQ-WCBN3507R ISED NO: 4491A-WCBN3507R

Report No.: T171129W02-RP1

| | | EE 802.11g L | | Temp/l | | | / 33%RH |
|---|-------------------------------|------------------------------------|---------------------------------|---------------------|-------------------------------|----------------------------|---------------------------|
| Test Item | | Harmoni | c | Test D | | | er 5, 201 |
| Polarize Detector | | Vertical Peak and Ave | erage | Test Eng Test Vo | | 120Va | <u>Chuang</u> c / 60Hz |
| 110.0 dBuV/m | | | | | | Limit1: | |
| | | | | | | Limit2: | |
| | | | | | | | |
| 70 | | | | | | | |
| | 1 X | | | | | | |
| | | | | | | | |
| 30.0 1000.000 3550. | 00 6100.00 | 8650.00 11200 | 0.00 13750.00 | 16300.00 18 | 850.00 214 | 00.00 26 | 500.00 MHz |
| | 00 6100.00 Readin (dBuV | g Correct | 0.00 13750.00 Resu (dBuV/ | lt | 850.00 214 Limit BuV/m) | 00.00 26 Margin (dB) | 500.00 MHz Remark |
| 1000.000 3550. Frequency (MHz) 4827.000 | Readin | g) Correct Factor (dB/m) | Resu | lt (m) (d | Limit | Margin | |
| 1000.000 3550. Frequency (MHz) | Readin (dBuV) | g Correct Factor (dB/m) | Resu (dBuV/ | lt (m) (d | Limit BuV/m) | Margin (dB) | Remark |
| 1000.000 3550. Frequency (MHz) 4827.000 | Readin (dBuV) | g Correct Factor (dB/m) | Resu (dBuV/ | lt (m) (d | Limit BuV/m) | Margin (dB) | Remark |
| 1000.000 3550. Frequency (MHz) 4827.000 N/A | Readin (dBuV) 41.41 | g Correct Factor (dB/m) | Resu (dBuV/ 45.79 | lt 'm) (d 9 | Limit BuV/m) 74.00 | Margin (dB) -28.21 | Remark |

| | | IEEE 802.11g Low CH Harmonic | | | mp/H | | | 24(°C)/ 33%RH December 5, 201 | | |
|--|----------------------------|-------------------------------------|-----------------------|------------------------------|------------------|--------------|--------------------------|----------------------------------|--|--|
| Test Item | | | | | est Da | | | | | |
| Polarize Detector | Р | Horizontal | | | Engii | | | Chuang | | |
| Detector | | eak and Ave | rage | Tes | st Volta | age | 12008 | ac / 60Hz | | |
| 110.0 dBuV/m | | | | | | | i | | | |
| | | | | | | | Limit1: Limit2: | | | |
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| 30.0 | 0 6100.00 | 9650.00 11200.0 | 10 12750 00 | 16200.0 | 0 1995 | 0.00 214 | 00.00 2 | C500.00 MHz | | |
| 30.0 1000.000 3550.0 | 00 6100.00 | 8650.00 11200.0 | 0 13750.00 | 16300.0 | 0 1885 | 0.00 214 | 00.00 2 | 6500.00 MHz | | |
| | DO 6100.00 | 8650.00 11200.0 | 0 13750.00 | 16300.0 | 0 1885 | 0.00 214 | 00.00 2 | 6500.00 MHz | | |
| 1000.000 3550.0 Frequency | Reading | Correct | Resu | ılt | Li | mit | Margin | | | |
| 1000.000 3550.0 | | | 1 | ılt | Li | | | 6500.00 MHz Remark | | |
| 1000.000 3550.0 Frequency | Reading | Correct Factor | Resu | ılt /m) | Li (dBu | mit | Margin | | | |
| 1000.000 3550.0 Frequency (MHz) | Reading (dBuV) | Correct Factor (dB/m) | Resu (dBuV | ılt /m) | Li (dBu | mit uV/m) | Margin (dB) | Remark | | |
| 1000.000 3550.0 Frequency (MHz) 4827.000 | Reading (dBuV) | Correct Factor (dB/m) | Resu (dBuV | ılt /m) | Li (dBu | mit uV/m) | Margin (dB) | Remark | | |
| 1000.000 3550.0 Frequency (MHz) 4827.000 | Reading (dBuV) | Correct Factor (dB/m) | Resu (dBuV | ılt /m) | Li (dBu | mit uV/m) | Margin (dB) | Remark | | |
| 1000.000 3550.0 Frequency (MHz) 4827.000 | Reading (dBuV) | Correct Factor (dB/m) | Resu (dBuV | ılt /m) | Li (dBu | mit uV/m) | Margin (dB) | Remark | | |
| 1000.000 3550.0 Frequency (MHz) 4827.000 | Reading (dBuV) | Correct Factor (dB/m) | Resu (dBuV | ılt /m) | Li (dBu | mit uV/m) | Margin (dB) | Remark | | |
| 1000.000 3550.0 Frequency (MHz) 4827.000 | Reading (dBuV) | Correct Factor (dB/m) | Resu (dBuV | ılt /m) | Li (dBu | mit uV/m) | Margin (dB) | Remark | | |
| 1000.000 3550.0 Frequency (MHz) 4827.000 N/A | Reading (dBuV) | Correct Factor (dB/m) | Resu (dBuV | ılt /m) | Li (dBu | mit uV/m) | Margin (dB) | Remark | | |
| 1000.000 3550.0 Frequency (MHz) 4827.000 N/A | Reading (dBuV) 39.59 | Correct Factor (dB/m) 4.38 | Resu (dBuV 43.9 | Ilt /m) 17 | Li (dBı 74 | mit JV/m) | Margin (dB) -30.03 | Remark peak | | |
| 1000.000 3550.0 Frequency (MHz) 4827.000 N/A N/A Pmark: 1. Measu | Reading (dBuV) 39.59 | Correct Factor (dB/m) 4.38 | Resu (dBuV 43.9 | Ilt /m) 17 | Li (dBı 74 | mit JV/m) | Margin (dB) -30.03 | Remark peak | | |
| 1000.000 3550.0 Frequency (MHz) 4827.000 N/A M/A Emark: 1. Measu funda | Reading (dBuV) 39.59 | Correct Factor (dB/m) 4.38 | Resu (dBuV 43.9 | ult /m) 17 17 17 | Li (dBu 74 | mit JV/m) | Margin (dB) -30.03 | Remark peak | | |

| Test Item | | EE 802.11g N | | | o/Hum | | / 33%RH |
|---|-------------------|-------------------------------|------------------|---------|--------------------|--------------------|----------------------|
| | | Harmonic | ; | | Date | | <u>er 5, 201</u> |
| Polarize Detector | | Vertical Peak and Ave | rage | | ngineer /oltage | | Chuang c / 60Hz |
| 110.0 dBuV/m | | | | | | Limit1: Limit2: | |
| | 1 | | | | | | |
| 30.0 1000.000 3550 Frequency (MHz) | Reading | Factor | Resul | | Limit | Margin | 500.00 MHz Remark |
| 1000.000 3550 Frequency (MHz) | Reading (dBuV) | G Correct Factor (dB/m) | Resul (dBuV/i | t m) | Limit (dBuV/m) | Margin (dB) | Remark |
| 1000.000 3550 Frequency | Reading | G Correct Factor | Resul | t m) | Limit | Margin | |

| Test Mode | IEE | EE 802.11g N | | | p/Hum | | / 33%RH |
|---------------------------------------|-------------------|-----------------------------|----------------|------------|---------------------|----------------------------|----------------------|
| Test Item Polarize | | Harmonic Horizontal | | | t Date | | er 5, 2017 Chuang |
| Detector | F | Peak and Ave | | | Engineer Voltage | | Chuang c / 60Hz |
| 110.0 dBuV/m | • | | luge | 1001 | voltage | 12070 | 07 00112 |
| | | | | | | Limit1: Limit2: | _ |
| 70 | | | | | | | |
| 1000.000 3550.0 | 00 6100.00 | 8650.00 11200.0 | 00 13750.00 | 16300.00 | 18850.00 214 | 00.00 26 | 500.00 MHz |
| 1000.000 3550.0 Frequency (MHz) | Reading (dBuV) | Corroct | Resu (dBuV | ılt | Limit (dBuV/m) | 00.00 26 Margin (dB) | 500.00 MHz Remark |
| Frequency (MHz) 4876.000 | Reading | Correct Factor | Resu | ılt /m) | Limit | Margin | |
| Frequency (MHz) | Reading (dBuV) | Correct Factor (dB/m) | Resu (dBuV/ | ılt /m) | Limit (dBuV/m) | Margin (dB) | Remark |

| | IEE | E 802.11g H | - | | emp/H | | | C)/ 33%RH |
|--|---------------------------------|---|------------------------------|-------------------|--------------------|----------------------------|--------------------------|-------------------------|
| Test Item | | Harmonic | > | | est Da | | | nber 5, 201 |
| Polarize Detector | D | Vertical eak and Ave | vrage | | st Engi st Volf | | | ry Chuang Vac / 60Hz |
| Delector | _ F | eak and Ave | lage | Ie | | aye | 120 | |
| 110.0 dBu¥/m | | | | | | | | |
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| 30.0 | | | | | | | | |
| 30.0 1000.000 3550.0 | 0 6100.00 | 8650.00 11200. | 00 13750.00 | 16300. | 00 188 | 50.00 214 | 00.00 | 26500.00 MHz |
| | 0 6100.00 | 8650.00 11200. | 00 13750.00 | 16300. | 00 188 | 50.00 214 | 00.00 | 26500.00 MHz |
| 1000.000 3550.0 | | | 00 13750.00 | 16300. | | | 1 | |
| | 00 6100.00 Reading (dBuV) | 8650.00 11200. Correct Factor (dB/m) | 00 13750.00 Rest (dBuV | ult | L | 50.00 214 imit uV/m) | 00.00 Margin (dB) | |
| 1000.000 3550.0 | Reading | Correct Factor | Resu | ult //m) | L (dB | imit | Margin | Remark |
| 1000.000 3550.0 Frequency (MHz) | Reading (dBuV) | Correct Factor (dB/m) | Resu (dBuV | ult //m) | L (dB | imit uV/m) | Margin (dB) | Remark |
| 1000.000 3550.0 Frequency (MHz) 4925.000 | Reading (dBuV) | Correct Factor (dB/m) | Resu (dBuV | ult //m) | L (dB | imit uV/m) | Margin (dB) | Remark |
| 1000.000 3550.0 Frequency (MHz) 4925.000 | Reading (dBuV) | Correct Factor (dB/m) | Resu (dBuV | ult //m) | L (dB | imit uV/m) | Margin (dB) | Remark |
| 1000.000 3550.0 Frequency (MHz) 4925.000 | Reading (dBuV) | Correct Factor (dB/m) | Resu (dBuV | ult //m) | L (dB | imit uV/m) | Margin (dB) | Remark |
| 1000.000 3550.0 Frequency (MHz) 4925.000 | Reading (dBuV) | Correct Factor (dB/m) | Resu (dBuV | ult //m) | L (dB | imit uV/m) | Margin (dB) | Remark |
| 1000.000 3550.0 Frequency (MHz) 4925.000 | Reading (dBuV) | Correct Factor (dB/m) | Resu (dBuV | ult //m) | L (dB | imit uV/m) | Margin (dB) | Remark |
| 1000.000 3550.0 Frequency (MHz) 4925.000 N/A | Reading (dBuV) | Correct Factor (dB/m) | Resu (dBuV | ult //m) | L (dB | imit uV/m) | Margin (dB) | Remark |
| 1000.000 3550.0 Frequency (MHz) 4925.000 N/A | Reading (dBuV) 43.50 | Correct Factor (dB/m) 4.55 | Rest (dBuV 48.0 | ult //m) 05 | L (dB 74 | imit uV/m) 4.00 | Margin (dB) -25.95 | Remark peak |
| 1000.000 3550.0 Frequency (MHz) 4925.000 N/A N/A emark: 1. Measu | Reading (dBuV) 43.50 | Correct Factor (dB/m) 4.55 | Rest (dBuV 48.0 | ult //m) 05 | L (dB 74 | imit uV/m) 4.00 | Margin (dB) -25.95 | Remark peak |
| 1000.000 3550.0 Frequency (MHz) 4925.000 N/A Pemark: 1. Measu fundat 2. For al | Reading (dBuV) 43.50 | Correct Factor (dB/m) 4.55 | Resu (dBuV 48.0 | ult //m) 05 | Oth ha | imit uV/m) 4.00 | Margin (dB) -25.95 | Remark |

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R= Compliance Certification Services Inc.

FCC ID: PPQ-WCBN3507R ISED NO: 4491A-WCBN3507R

| Test Mode | | IEEE | 802.11g | | H | Temp/F | | | / 33%RH |
|-----------------------|----------|---------------|----------------------------|-------------|------------------|--------------------------|-----------------|--------------------|-----------------------------|
| Test Item Polarize | | | Harmo Horizor | | т | <u>Test D</u> est Eng | | | <u>per 5, 201</u> Chuang |
| Detector | | Pe | ak and A | | | est Vol | | | ac / 60Hz |
| 110.0 dBu¥/m | | | | | | | | | |
| | | | | | | | | Limit1: Limit2: | _ |
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| | X | | | | | | | | |
| 30.0 | | | | | | | | | |
| 1000.000 3550.0 | 00 61 | 00.00 8 | 650.00 112 | 200.00 1379 | 50.00 163 | DO.OO 188 | 850.00 2140 | 10.00 2 | 6500.00 MHz |
| Frequency (MHz) | Re (d | ading BuV) | Correc Factor (dB/m) | . 1 | Result BuV/m) | | ₋imit BuV/m) | Margin (dB) | Remark |
| 4925.000 N/A | 4 | 2.10 | 4.55 | | 46.65 | 7 | 4.00 | -27.35 | peak |
| IN/A | | | | | | | | | |
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| emark: | | <u> </u> | | | | 104 | | | |
| | | | ncies tro iency. | m i GH | z to the | iuth h | armonic | of highest | [|

2. For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit



CELER Compliance Certification Services Inc.

FCC ID: PPQ-WCBN3507R ISED NO: 4491A-WCBN3507R Report No.: T171129W02-RP1

| est Mode | IEE | EE 802. | | | w CH | | emp/H | | | (°C)/ 339 | |
|--------------------|-------|-------------------|---------|----------------------|---------------|-------|---------|------------------------|-------------|--------------------|-------|
| Test Item | | | larmor | | | | lest Da | | | mber 1 | |
| Polarize | | | Vertica | | | | st Eng | | | erry Chu | |
| Detector | | Реак | and A | verage | ; | IE | st Vol | age | 12 | 0Vac/6 | OHZ |
| 110.0 dBuV/m | | | | | | | | | | | - |
| | | | | | | | | | Lin | iit1: — iit2: — | |
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| 30.0 | | 6100.00 | 8650.00 | 11200.00 | 13750.00 | 16300 | 00 100 | -0 00 - 2 - | 1400.00 | 26500.00 | |
| 1000.000 333 | 00.00 | 6100.00 | 0030.00 | 11200.00 | 13730.00 | 16300 | .00 100 | 50.00 2 [.] | 1400.00 | 26300.00 | MITZ |
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| Frequency (MHz) | | Reading (dBuV) | Fac | rect ctor 8/m) | Resi (dBuV | | | imit uV/m) | Marg (dB | in R | emark |
| 4820.000 | | 48.45 | 4. | 36 | 52.8 | 31 | 7 | 4.00 | -21.1 | 9 | peak |
| N/A | | | | | | | | | | | |
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- Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit

| Test Mode | IEEE 802. | .11n HT20 Lo | ow CH | Te | emp/H | um | 24(°C) |)/ 33%RH |
|--|------------------------------------|-------------------------------------|--------------------------|-------------------------|----------------|-----------------------|--------------------------|------------------------|
| Test Item | | Harmonic | | | est Da | | | oer 13, 201 |
| Polarize | | <u>Horizontal</u> | - | | t Engi | | | Chuang |
| Detector | Реак | and Averag | e | les | st Volt | age | 12008 | ac / 60Hz |
| 110.0 dBuV/m | | | | | | | | |
| | | | | | | | Limit1: Limit2: | — |
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| 30.0 | | | | | | | | |
| 30.0 1000.000 3550 | .00 6100.00 8 | 3650.00 11200.00 | 13750.00 | 16300.0 | 00 188 | 50.00 214 | 00.00 2 | 26500.00 MHz |
| | .00 6100.00 8 | 3650.00 11200.00 | 13750.00 | 16300.0 | 00 188 | 50.00 214 | 00.00 2 | 26500.00 MHz |
| 1000.000 3550 | | Correct | 13750.00 Resul | | | 50.00 214 imit | 00.00 2 Margin | |
| | .00 6100.00 8 Reading (dBuV) | | | lt | L | | | 26500.00 MHz Remark |
| 1000.000 3550 Frequency | Reading | Correct Factor | Resul | lt ′m) | L (dB | imit | Margin | |
| 1000.000 3550 Frequency (MHz) | Reading (dBuV) | Correct Factor (dB/m) | Resul (dBuV/ | lt ′m) | L (dB | imit uV/m) | Margin (dB) | Remark |
| 1000.000 3550 Frequency (MHz) 4827.000 | Reading (dBuV) | Correct Factor (dB/m) | Resul (dBuV/ | lt ′m) | L (dB | imit uV/m) | Margin (dB) | Remark |
| 1000.000 3550 Frequency (MHz) 4827.000 | Reading (dBuV) | Correct Factor (dB/m) | Resul (dBuV/ | lt ′m) | L (dB | imit uV/m) | Margin (dB) | Remark |
| 1000.000 3550 Frequency (MHz) 4827.000 | Reading (dBuV) | Correct Factor (dB/m) | Resul (dBuV/ | lt ′m) | L (dB | imit uV/m) | Margin (dB) | Remark |
| 1000.000 3550 Frequency (MHz) 4827.000 | Reading (dBuV) | Correct Factor (dB/m) | Resul (dBuV/ | lt ′m) | L (dB | imit uV/m) | Margin (dB) | Remark |
| 1000.000 3550 Frequency (MHz) 4827.000 | Reading (dBuV) | Correct Factor (dB/m) | Resul (dBuV/ | lt ′m) | L (dB | imit uV/m) | Margin (dB) | Remark |
| 1000.000 3550 Frequency (MHz) 4827.000 | Reading (dBuV) | Correct Factor (dB/m) | Resul (dBuV/ | lt ′m) | L (dB | imit uV/m) | Margin (dB) | Remark |
| 1000.000 3550 Frequency (MHz) 4827.000 N/A | Reading (dBuV) 44.36 | Correct Factor (dB/m) 4.38 | Resul (dBuV/ 48.74 | lt (m) 4 | L (dB 74 | imit uV/m) 4.00 | Margin (dB) -25.26 | Remark Peak |
| 1000.000 3550 Frequency (MHz) 4827.000 N/A N/A emark: 1. Meas | Reading (dBuV) 44.36 | Correct Factor (dB/m) 4.38 | Resul (dBuV/ 48.74 | lt (m) 4 | L (dB 74 | imit uV/m) 4.00 | Margin (dB) -25.26 | Remark Peak |
| 1000.000 3550 Frequency (MHz) 4827.000 4827.000 N/A emark: 1. Meas funda | Reading (dBuV) 44.36 | Correct Factor (dB/m) 4.38 | Resul (dBuV/ 48.74 | It 'm) 4 the 1 | L (dB 74 | imit uV/m) 4.00 | Margin (dB) -25.26 | Remark Peak |

| — | | 11n HT20 N | | | emp/H | um | 24(| °C)/ 33% | %RΠ |
|--|----------------------------|---|-------------------------------|------------------------|------------------------|-------------------------------|-----------------------------------|--------------------|---------------|
| Test Item | | larmonic | | | est Da | | | mber 5 | |
| Polarize | | Vertical | | | t Engi | | | rry Chu | |
| Detector | Peak | and Averag | ge | le | st Volt | age | 120 |)Vac / 6 | OHZ |
| 110.0 dBuV/m | | | | | | | | | |
| | | | | | | | Limit | | |
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| 20.0 | | | | | | | | | |
| 30.0 1000.000 3550. | 00 6100.00 80 | 650.00 11200.00 |) 13750.00 | 16300.0 | 00 1885 | i0.00 21 4 | 00.00 | 26500.00 | MHz |
| | 00 6100.00 84 | 650.00 11200.00 |) 13750.00 | 16300.0 | 00 1885 | 0.00 214 | 00.00 | 26500.00 | MHz |
| | 00 6100.00 84 | |) 13750.00 | 16300.0 | 00 1885 | i0.00 214 | 00.00 | 26500.00 | MHz |
| 1000.000 3550. Frequency | Reading | Correct Factor | Resu | ılt | Li | imit | Margi | n P | MHz |
| 1000.000 3550. Frequency (MHz) | Reading (dBuV) | Correct Factor (dB/m) | Resu (dBuV | ılt //m) | Li (dBi | imit uV/m) | Margi (dB) | n R | emark |
| 1000.000 3550. Frequency (MHz) 4869.000 | Reading (dBuV) 49.81 | Correct Factor (dB/m) 4.45 | Resu (dBuV 54.2 | ult 7/m) 26 | Li (dB) 74 | imit uV/m) 4.00 | Margi (dB) -19.74 | n Ri 4 I | emark Deak |
| 1000.000 3550. Frequency (MHz) 4869.000 4869.000 | Reading (dBuV) | Correct Factor (dB/m) | Resu (dBuV | ult 7/m) 26 | Li (dB) 74 | imit uV/m) | Margi (dB) | n Ri 4 I | emark |
| 1000.000 3550. Frequency (MHz) 4869.000 | Reading (dBuV) 49.81 | Correct Factor (dB/m) 4.45 | Resu (dBuV 54.2 | ult 7/m) 26 | Li (dB) 74 | imit uV/m) 4.00 | Margi (dB) -19.74 | n Ri 4 I | emark Deak |
| 1000.000 3550. Frequency (MHz) 4869.000 4869.000 | Reading (dBuV) 49.81 | Correct Factor (dB/m) 4.45 | Resu (dBuV 54.2 | ult 7/m) 26 | Li (dB) 74 | imit uV/m) 4.00 | Margi (dB) -19.74 | n Ri 4 I | emark Deak |
| 1000.000 3550. Frequency (MHz) 4869.000 4869.000 | Reading (dBuV) 49.81 | Correct Factor (dB/m) 4.45 | Resu (dBuV 54.2 | ult 7/m) 26 | Li (dB) 74 | imit uV/m) 4.00 | Margi (dB) -19.74 | n Ri 4 I | emark Deak |
| 1000.000 3550. Frequency (MHz) 4869.000 4869.000 | Reading (dBuV) 49.81 | Correct Factor (dB/m) 4.45 | Resu (dBuV 54.2 | ult 7/m) 26 | Li (dB) 74 | imit uV/m) 4.00 | Margi (dB) -19.74 | n Ri 4 I | emark Deak |
| 1000.000 3550. Frequency (MHz) 4869.000 4869.000 | Reading (dBuV) 49.81 | Correct Factor (dB/m) 4.45 | Resu (dBuV 54.2 | ult 7/m) 26 | Li (dB) 74 | imit uV/m) 4.00 | Margi (dB) -19.74 | n Ri 4 I | emark Deak |
| 1000.000 3550. Frequency (MHz) 4869.000 4869.000 | Reading (dBuV) 49.81 | Correct Factor (dB/m) 4.45 | Resu (dBuV 54.2 | ult 7/m) 26 | Li (dB) 74 | imit uV/m) 4.00 | Margi (dB) -19.74 | n Ri 4 I | emark Deak |
| 1000.000 3550. Frequency (MHz) 4869.000 4869.000 N/A N/A | Reading (dBuV) 49.81 | Correct Factor (dB/m) 4.45 4.45 | Rest (dBuV 54.2 43.4 | ult //m) 26 5 | Li (dB) 74 54 | imit uV/m) 4.00 4.00 | Margi (dB) -19.74 -10.55 | n Ri 4 I 5 / | emark Deak |

2. For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit

| Test Item | | 11n HT20 M | Id CH | Temp | o/Hum | 24(°C)/ | / 33%RH |
|--------------------|-------------------|-----------------------------|-------------------|----------|-------------------|--------------------|----------------|
| | | armonic | | | Date | | er 5, 2017 |
| Polarize | | orizontal | | | ngineer | | Chuang |
| Detector | Peak | and Average | e | Test V | /oltage | 120Va | c / 60Hz |
| 110.0 dBuV/m | | | | | | Limit1: Limit2: | _ |
| 70 | 1 | 650.00 11200.00 |) 13750.00 | 16300.00 | 18850.00 214 | 00.00 26 | 5500.00 MHz |
| | | | | | | • | |
| Frequency (MHz) | Reading (dBuV) | Correct Factor (dB/m) | Result (dBuV/m | | Limit (dBuV/m) | Margin (dB) | Remark |
| | | Factor | | | | | Remark peak |
| (MHz) | (dBuV) | Factor (dB/m) | (dBuV/m | | (dBuV/m) | (dB) | |

| Test Item | | 11n HT20 Hig | gh CH | Temp/Hur | n | 24(°C)/ 33%RH | | |
|---|-------------------|---------------------------------|--------------------|-----------------|-----------|--------------------|------------------------|--|
| iest item | | larmonic | | Test Date |) | Decemb | oer 13, 201 | |
| Polarize | | Vertical | | Test Engine | | | Chuang | |
| Detector | Peak | and Average | • | Test Voltag | je | 120Va | ac / 60Hz | |
| 110.0 dBuV/m | | | | | | Limit1: Limit2: | | |
| 70 | | | | | | | | |
| | × | | | | | | | |
| | | | | | | | | |
| 30.0 1000.000 35 Frequency | Reading | 8650.00 11200.00 Correct Factor | Result | 6300.00 18850.0 | it | Margin | 26500.00 MHz Remark | |
| 1000.000 35 Frequency (MHz) | Reading (dBuV) | Correct Factor (dB/m) | Result (dBuV/m) | Lim (dBuV | it /m) | Margin (dB) | Remark | |
| 1000.000 35 Frequency (MHz) 4925.000 | Reading | Correct Factor | Result | Lim | it /m) | Margin | | |
| 1000.000 35 Frequency (MHz) | Reading (dBuV) | Correct Factor (dB/m) | Result (dBuV/m) | Lim (dBuV | it /m) | Margin (dB) | Remark | |

| T (1) | | 1n HT20 Hi | gn CH | Temp/Hum | 24(°C)/ | 33%RH |
|--------------------|-------------------|-----------------------------|--------------------|--------------------|----------------|----------------|
| Test Item | | armonic | | Test Date | | er 13, 2017 |
| Polarize | | orizontal | | Test Engineer | | Chuang |
| Detector | Peak | and Average | 3 | Test Voltage | 120Va | c / 60Hz |
| 110.0 dBu∀/m | | | | | Limit1: | |
| | | | | | Limit2: | |
| 70 | | | | | | |
| 30.0 | X | | | | | |
| 1000.000 3550 |).00 6100.00 8 | 650.00 11200.00 | 13750.00 16 | 300.00 18850.00 21 | 400.00 26 | 500.00 MHz |
| | | T | | | | |
| Frequency (MHz) | Reading (dBuV) | Correct Factor (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
| | | Factor | | | | Remark peak |
| (MHz) 4918.000 | (dBuV) | Factor (dB/m) | (dBuV/m) | (dBuV/m) | (dB) | |

| | IEEE 8 | 02.11n HT4 | 0 Low CH | Ter | mp/Hum | 24(°C |)/ 33%RH |
|--|----------------------------------|--------------------------------|----------------------------|-------------------|---------------------------------|--------------------------|------------------------|
| Test Item | | Harmonic | ; | | st Date | | per 13, 201 |
| Polarize | | Vertical | | | Engineer | | / Chuang |
| Detector | Pe | eak and Ave | rage | Test | t Voltage | 120V | ac / 60Hz |
| 110.0 dBuV/m | | | | | | Limit1: | |
| 70 | | | | | | | |
| 30.0 | | | | | | | |
| 30.0 1000.000 355 Frequency (MHz) | 50.00 6100.00 Readin (dBuV | ng Correc | r Kesi | ult |) 18850.00 Limit (dBuV/m) | Margin | 26500.00 MHz Remark |
| 1000.000 355 | Readin | ng Correc () Facto (dB/m | ct Resu r (dBuV | ult //m) | Limit | Margin | |
| 1000.000 355 Frequency (MHz) | Readin (dBuV | ng Correc () Facto (dB/m | ct Resu r (dBuV | ult //m) | Limit (dBuV/m) | Margin (dB) | Remark |
| 1000.000 355 Frequency (MHz) 4848.000 | Readin (dBuV | ng Correc () Facto (dB/m | ct Resu r (dBuV | ult //m) | Limit (dBuV/m) | Margin (dB) | Remark |
| 1000.000 355 Frequency (MHz) 4848.000 | Readin (dBuV | ng Correc () Facto (dB/m | ct Resu r (dBuV | ult //m) | Limit (dBuV/m) | Margin (dB) | Remark |
| 1000.000 355 Frequency (MHz) 4848.000 | Readin (dBuV | ng Correc () Facto (dB/m | ct Resi r (dBuV | ult //m) | Limit (dBuV/m) | Margin (dB) | Remark |
| 1000.000 355 Frequency (MHz) 4848.000 | Readin (dBuV | ng Correc () Facto (dB/m | ct Resi r (dBuV | ult //m) | Limit (dBuV/m) | Margin (dB) | Remark |
| 1000.000 355 Frequency (MHz) 4848.000 | Readin (dBuV | ng Correc () Facto (dB/m | ct Resi r (dBuV | ult //m) | Limit (dBuV/m) | Margin (dB) | Remark |
| 1000.000 355 Frequency (MHz) 4848.000 | Readin (dBuV | ng Correc () Facto (dB/m | ct Resi r (dBuV | ult //m) | Limit (dBuV/m) | Margin (dB) | Remark |
| 1000.000 355 Frequency (MHz) 4848.000 | Readin (dBuV | ng Correc () Facto (dB/m | ct Resi r (dBuV | ult //m) | Limit (dBuV/m) | Margin (dB) | Remark |
| 1000.000 355 Frequency (MHz) 4848.000 N/A N/A | Readin (dBuV 41.31 | ng Facto (dB/m 4.43 | ct Rest r (dBuV 45.7 | ult //m) 74 | Limit (dBuV/m) 74.00 | Margin (dB) | Remark peak |
| 1000.000 355 Frequency (MHz) 4848.000 N/A N/A | Readin (dBuV 41.31 | ng Facto (dB/m 4.43 | om 1 GHz to | ult //m) 74 | Limit (dBuV/m) 74.00 | Margin (dB) -28.26 | Remark peak |
| 1000.000 355 Frequency (MHz) 4848.000 N/A N/A | Readin (dBuV 41.31 | ng Facto (dB/m 4.43 | om 1 GHz to | ult //m) 74 | Limit (dBuV/m) 74.00 | Margin (dB) -28.26 | Remark peak |

| Test Mode | IEEE 802. | 11n HT40 Lo | ow CH | Te | emp/H | um | 24(| °C)/ 3 | 33%RH |
|--|---|--|-----------------------------|-------------------------|----------------|----------------------------|------------------------|--------|--------------------|
| Test Item | | larmonic | | | est Da | | | | 13, 201 |
| Polarize | | lorizontal | | | t Engi | | | | huang |
| Detector | Peak | and Averag | е | Tes | st Volt | tage | 120 |)Vac | / 60Hz |
| 110.0 dBu∀/m | | | | | | | | | |
| | | | | | | | Limi | | - |
| | | | | | | | Limi | t2: - | |
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| 30.0 | 1 | | | | | | | | |
| 30.0 | | 550.00 11200.00 | 13750.00 | 16300.0 | 00 188 | 50.00 214 | 00.00 | 26500 | D.00 MHz |
| | | 550.00 11200.00 | 13750.00 | 16300.0 | 00 188 | 50.00 214 | 00.00 | 2650 | D.00 MHz |
| | | | 13750.00 | 16300.0 | 00 188 | 50.00 214 | 00.00 | 26500 | D.00 MHz |
| | | 550.00 11200.00 Correct Factor (dB/m) | 13750.00 Resul (dBuV/ | lt | L | 50.00 214 imit uV/m) | 00.00 Margi (dB) | n | D.00 MHz Remark |
| 1000.000 3550.0 Frequency | 00 6100.00 84 Reading | Correct Factor | Resu | lt ′m) | L (dB | imit | Margi | n | |
| 1000.000 3550.0 Frequency (MHz) | 0 6100.00 80 Reading (dBuV) | Correct Factor (dB/m) | Resu (dBuV/ | lt ′m) | L (dB | imit uV/m) | Margi (dB) | n | Remark |
| 1000.000 3550.0 Frequency (MHz) 4844.000 | 0 6100.00 80 Reading (dBuV) | Correct Factor (dB/m) | Resu (dBuV/ | lt ′m) | L (dB | imit uV/m) | Margi (dB) | n | Remark |
| 1000.000 3550.0 Frequency (MHz) 4844.000 | 0 6100.00 80 Reading (dBuV) | Correct Factor (dB/m) | Resu (dBuV/ | lt ′m) | L (dB | imit uV/m) | Margi (dB) | n | Remark |
| 1000.000 3550.0 Frequency (MHz) 4844.000 | 0 6100.00 80 Reading (dBuV) | Correct Factor (dB/m) | Resu (dBuV/ | lt ′m) | L (dB | imit uV/m) | Margi (dB) | n | Remark |
| 1000.000 3550.0 Frequency (MHz) 4844.000 | 0 6100.00 80 Reading (dBuV) | Correct Factor (dB/m) | Resu (dBuV/ | lt ′m) | L (dB | imit uV/m) | Margi (dB) | n | Remark |
| 1000.000 3550.0 Frequency (MHz) 4844.000 | 0 6100.00 80 Reading (dBuV) | Correct Factor (dB/m) | Resu (dBuV/ | lt ′m) | L (dB | imit uV/m) | Margi (dB) | n | Remark |
| 1000.000 3550.0 Frequency (MHz) 4844.000 | 0 6100.00 80 Reading (dBuV) | Correct Factor (dB/m) | Resu (dBuV/ | lt ′m) | L (dB | imit uV/m) | Margi (dB) | n | Remark |
| 1000.000 3550.0 Frequency (MHz) 4844.000 N/A emark: | 00 6100.00 80 Reading (dBuV) 37.88 | Correct Factor (dB/m) 4.41 | Resul (dBuV/ 42.29 | lt m) 9 | L (dB 74 | imit uV/m) 4.00 | Margi (dB) -31.7 | n 1 | Remark |
| 1000.000 3550.0 Frequency (MHz) 4844.000 N/A emark: 1. Measu | Reading (dBuV) 37.88 | Correct Factor (dB/m) 4.41 | Resul (dBuV/ 42.29 | lt m) 9 | L (dB 74 | imit uV/m) 4.00 | Margi (dB) -31.7 | n 1 | Remark |
| Intervention Intervention Frequency (MHz) 4844.000 N/A N/A emark: 1. 1. Measu fundal | 00 6100.00 80 Reading (dBuV) 37.88 | Correct Factor (dB/m) 4.41 | Resul (dBuV/ 42.29 | It m) 9 the 10 | L (dB 74 | imit uV/m) 4.00 | Margi (dB) -31.7 | n | Remark peak |

| | 1222. | 11n HT40 N | | | emp/H | | | °C)/ 33% | |
|---|------------------------------------|---|-------------------------------|-------------------------|----------------------|-------------------------------|-----------------------------------|----------|---------------|
| Test Item | | larmonic | | | est Da | | | mber 5 | |
| Polarize | | Vertical | | | t Engi | | | rry Chu | |
| Detector | Peak | and Averag | ge | les | st Volt | age | 120 |)Vac / 6 | OHZ |
| 110.0 dBuV/m | | | | | | | | | |
| | | | | | | | Limit | | |
| | | | | | | | Limit | 2: — | |
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| 30.0 | | | | | | | | | |
| 30.0 1000.000 3550. | 00 6100.00 86 | 550.00 11200.00 |) 13750.00 | 16300.0 | 00 188 | 50.00 214 | 00.00 | 26500.00 | MHz |
| | 00 6100.00 86 | 550.00 11200.00 |) 13750.00 | 16300.0 | 00 188 | 50.00 214 | 00.00 | 26500.00 | MHz |
| 1000.000 3550. | | 550.00 11200.00 Correct | | | | | 1 | | MHz |
| | 00 6100.00 84 Reading (dBuV) | Correct Factor |) 13750.00 Rest (dBuV | ılt | L | 50.00 214 imit uV/m) | 00.00 Margii (dB) | n | MHz |
| 1000.000 3550. Frequency (MHz) | Reading (dBuV) | Correct Factor (dB/m) | Resu (dBuV | ılt //m) | L (dB | imit uV/m) | Margii (dB) | n R | emark |
| 1000.000 3550. Frequency (MHz) 4876.000 | Reading (dBuV) 49.86 | Correct Factor (dB/m) 4.47 | Resu (dBuV 54.3 | ult //m) 33 | L (dB | imit uV/m) 4.00 | Margin (dB) -19.67 | n R | emark Deak |
| 1000.000 3550. Frequency (MHz) 4876.000 4876.000 | Reading (dBuV) | Correct Factor (dB/m) | Resu (dBuV | ult //m) 33 | L (dB | imit uV/m) | Margii (dB) | n R | emark |
| 1000.000 3550. Frequency (MHz) 4876.000 | Reading (dBuV) 49.86 | Correct Factor (dB/m) 4.47 | Resu (dBuV 54.3 | ult //m) 33 | L (dB | imit uV/m) 4.00 | Margin (dB) -19.67 | n R | emark Deak |
| 1000.000 3550. Frequency (MHz) 4876.000 4876.000 | Reading (dBuV) 49.86 | Correct Factor (dB/m) 4.47 | Resu (dBuV 54.3 | ult //m) 33 | L (dB | imit uV/m) 4.00 | Margin (dB) -19.67 | n R | emark Deak |
| 1000.000 3550. Frequency (MHz) 4876.000 4876.000 | Reading (dBuV) 49.86 | Correct Factor (dB/m) 4.47 | Resu (dBuV 54.3 | ult //m) 33 | L (dB | imit uV/m) 4.00 | Margin (dB) -19.67 | n R | emark Deak |
| 1000.000 3550. Frequency (MHz) 4876.000 4876.000 | Reading (dBuV) 49.86 | Correct Factor (dB/m) 4.47 | Resu (dBuV 54.3 | ult //m) 33 | L (dB | imit uV/m) 4.00 | Margin (dB) -19.67 | n R | emark Deak |
| 1000.000 3550. Frequency (MHz) 4876.000 4876.000 | Reading (dBuV) 49.86 | Correct Factor (dB/m) 4.47 | Resu (dBuV 54.3 | ult //m) 33 | L (dB | imit uV/m) 4.00 | Margin (dB) -19.67 | n R | emark Deak |
| 1000.000 3550. Frequency (MHz) 4876.000 4876.000 N/A | Reading (dBuV) 49.86 | Correct Factor (dB/m) 4.47 4.47 | Rest (dBuV 54.3 46.4 | ult //m) 33 32 | L (dB 74 54 | imit uV/m) 4.00 4.00 | Margii (dB) -19.67 -7.58 | n Ri | emark Deak |

2. For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit

| Test Mode | IEEE 802.1 | 11n HT40 M | lid CH | Te | emp/H | um | 24(| °C)/ 33% | RH |
|--|----------------------------|--|-----------------------------|--------------------------|----------------|----------------------------|-------------------------|---------------|-------------|
| Test Item | | armonic | | | est Da | | | mber 5, | |
| Polarize | | orizontal | | | st Engi | | | rry Chua | |
| Detector | Peak | and Average | e | Te | st Volt | age | 120 |)Vac / 60 |)Hz |
| 110.0 dBuV/m | | | | | | | | | |
| | | | | | | | Limit | | |
| | | | | | | | Limit | t2: <u> </u> | |
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| 20.0 | | | | | | | | | |
| 30.0 | .00 6100.00 8 | 650.00 11200.00 |) 13750.00 | 16300. | .00 188 | 50.00 214 | 00.00 | 26500.00 M | Hz |
| | .00 6100.00 8 | 650.00 11200.00 |) 13750.00 | 16300. | .00 188 | 50.00 214 | 00.00 | 26500.00 M | Hz |
| | .00 6100.00 84 | |) 13750.00 | 16300. | .00 188 | 50.00 214 | 00.00 | 26500.00 M | Hz |
| | .00 6100.00 84 | 650.00 11200.00 Correct Factor (dB/m) |) 13750.00 Resu (dBuV | ılt | L | 50.00 214 imit uV/m) | 00.00 Margi (dB) | n Bo | Hz |
| 1000.000 3550 Frequency | Reading | Correct Factor | Resu | ılt /m) | L (dB | imit | Margi | n Rei | |
| 1000.000 3550 Frequency (MHz) | Reading (dBuV) | Correct Factor (dB/m) | Resu (dBuV/ | ılt /m) | L (dB | imit uV/m) | Margi (dB) | n Rei | mark |
| 1000.000 3550 Frequency (MHz) 4869.000 | Reading (dBuV) | Correct Factor (dB/m) | Resu (dBuV/ | ılt /m) | L (dB | imit uV/m) | Margi (dB) | n Rei | mark |
| 1000.000 3550 Frequency (MHz) 4869.000 | Reading (dBuV) | Correct Factor (dB/m) | Resu (dBuV/ | ılt /m) | L (dB | imit uV/m) | Margi (dB) | n Rei | mark |
| 1000.000 3550 Frequency (MHz) 4869.000 | Reading (dBuV) | Correct Factor (dB/m) | Resu (dBuV/ | ılt /m) | L (dB | imit uV/m) | Margi (dB) | n Rei | mark |
| 1000.000 3550 Frequency (MHz) 4869.000 | Reading (dBuV) | Correct Factor (dB/m) | Resu (dBuV/ | ılt /m) | L (dB | imit uV/m) | Margi (dB) | n Rei | mark |
| 1000.000 3550 Frequency (MHz) 4869.000 | Reading (dBuV) | Correct Factor (dB/m) | Resu (dBuV/ | ılt /m) | L (dB | imit uV/m) | Margi (dB) | n Rei | mark |
| 1000.000 3550 Frequency (MHz) 4869.000 N/A | Reading (dBuV) | Correct Factor (dB/m) | Resu (dBuV/ | ılt /m) | L (dB | imit uV/m) | Margi (dB) | n Rei | mark |
| 1000.000 3550 Frequency (MHz) 4869.000 N/A | Reading (dBuV) 45.61 | Correct Factor (dB/m) 4.45 | Resu (dBuV/ 50.0 | llt /m) 6 | L (dB 74 | imit uV/m) 4.00 | Margi (dB) -23.94 | n Rei | mark |
| 1000.000 3550 Frequency (MHz) 4869.000 N/A emark: 1. Meas | Reading (dBuV) 45.61 | Correct Factor (dB/m) 4.45 | Resu (dBuV/ 50.0 | llt /m) 6 | L (dB 74 | imit uV/m) 4.00 | Margi (dB) -23.94 | n Rei | mark |
| 1000.000 3550 Frequency (MHz) 4869.000 N/A emark: 1. Meas funda | Reading (dBuV) 45.61 | Correct Factor (dB/m) 4.45 | Resu (dBuV/ 50.0 | Ilt /m) 6 the 1 | Oth ha | imit uV/m) 4.00 | Margi (dB) -23.9 | n Rei 4 pe | mark eak |

| | | 002.11 | n HT40 H | igh CH | Te | emp/H | um | 24(| °C)/ 33% | 6RH |
|--|------------------|----------------------|-------------------------------------|---|-------------------|------------------|-----------------------|--------------------------|----------|---------------|
| Test Item | | | armonic | | | est Da | | | nber 13 | |
| Polarize | | | ertical | | | st Engi | | | ry Chu | |
| Detector | ł | Peak a | nd Averag | e | le | st Volt | age | 120 |)Vac / 6 | 0Hz |
| 110.0 dBuV/m | | | | | | | | | | |
| | | | | | | | | Limit | 1: — | |
| | | | | | | | | Limit | 2: _ | |
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| 30.0 | | | | | | | | | | |
| 30.0 1000.000 35 | 50.00 610 | 0.00 86 | 650.00 11200. | 00 13750.00 | 16300. | .00 1885 | 50.00 214 | 00.00 | 26500.00 | ĦHz |
| | 50.00 610 | 0.00 86 | 550.00 11200. | 00 13750.00 | 16300. | .00 1885 | <u>50.00</u> 214 | 00.00 | 26500.00 | MHz |
| 1000.000 35 | | | | | | | | | | M Hz |
| 1000.000 35 | Rea | ding | Correct Factor | Resi | ult | L | imit | Margii | | 4Hz emark |
| 1000.000 35 Frequency (MHz) | Rea (dE | iding BuV) | Correct Factor (dB/m) | Resu (dBuV | ult //m) | Li (dB | imit uV/m) | Margii (dB) | n Re | emark |
| 1000.000 35 Frequency (MHz) 4904.000 | Rea (dE | ding | Correct Factor | Resi | ult //m) | Li (dB | imit | Margii | n Re | |
| 1000.000 35 Frequency (MHz) | Rea (dE | iding BuV) | Correct Factor (dB/m) | Resu (dBuV | ult //m) | Li (dB | imit uV/m) | Margii (dB) | n Re | emark |
| 1000.000 35 Frequency (MHz) 4904.000 | Rea (dE | iding BuV) | Correct Factor (dB/m) | Resu (dBuV | ult //m) | Li (dB | imit uV/m) | Margii (dB) | n Re | emark |
| 1000.000 35 Frequency (MHz) 4904.000 | Rea (dE | iding BuV) | Correct Factor (dB/m) | Resu (dBuV | ult //m) | Li (dB | imit uV/m) | Margii (dB) | n Re | emark |
| 1000.000 35 Frequency (MHz) 4904.000 | Rea (dE | iding BuV) | Correct Factor (dB/m) | Resu (dBuV | ult //m) | Li (dB | imit uV/m) | Margii (dB) | n Re | emark |
| 1000.000 35 Frequency (MHz) 4904.000 | Rea (dE | iding BuV) | Correct Factor (dB/m) | Resu (dBuV | ult //m) | Li (dB | imit uV/m) | Margii (dB) | n Re | emark |
| 1000.000 35 Frequency (MHz) 4904.000 | Rea (dE | iding BuV) | Correct Factor (dB/m) | Resu (dBuV | ult //m) | Li (dB | imit uV/m) | Margii (dB) | n Re | emark |
| 1000.000 35 Frequency (MHz) 4904.000 N/A | Rea (dE | iding BuV) | Correct Factor (dB/m) | Resu (dBuV | ult //m) | Li (dB | imit uV/m) | Margii (dB) | n Re | emark |
| 1000.000 35 Frequency (MHz) 4904.000 N/A | Rea (dE 39 | 0.43 | Correct Factor (dB/m) 4.51 | Rest (dBuV 43.9 | ult //m))4 | 24 (dB) 74 | imit uV/m) 4.00 | Margii (dB) -30.06 | n R(| emark |
| 1000.000 35 Frequency (MHz) 4904.000 N/A emark: 1. Mea | Rea (dE 39 | ding BuV) 0.43 | Correct Factor (dB/m) 4.51 | Rest (dBuV 43.9 | ult //m))4 | 24 (dB) 74 | imit uV/m) 4.00 | Margii (dB) -30.06 | n R(| emark |
| 1000.000 35 Frequency (MHz) 4904.000 N/A emark: 1. Mea func | Rea (dE 39 | ding BuV) 0.43 | Correct Factor (dB/m) 4.51 | Rest (dBuV 43.9 43.9 1 1 1 1 0 | ult //m) 04 | Oth ha | imit uV/m) 4.00 | Margin (dB) -30.06 | n R(| emark beak |

| | IEEE 802.7 | 11n HT40 Hiợ | gh CH | Temp/Hum | 24(°C)/ | 33%RH |
|---|------------------------------------|---|------------------------------------|--|-----------------------------|----------------------|
| Test Item | | Harmonic | | Test Date | | er 13, 2017 |
| Polarize | | lorizontal | | est Engineer | | Chuang |
| Detector | Peak | and Average | 9 | Test Voltage | 120Va | c / 60Hz |
| 110.0 dBu¥/m | | | | | Limit1: Limit2: | |
| 70 | | | | | | |
| 30.0 1000.000 35 | 50.00 6100.00 | 8650.00 11200.00 | 13750.00 163 | 00.00 18850.00 21 | 400.00 26 | 500.00 MHz |
| | 50.00 6100.00 Reading (dBuV) | 8650.00 11200.00 Correct Factor (dB/m) | 13750.00 163 Result (dBuV/m) | 00.00 18850.00 21 Limit (dBuV/m) | 400.00 26 Margin (dB) | 500.00 MHz Remark |
| 1000.000 355 | Reading | Correct Factor | Result | Limit | Margin | |
| 1000.000 35 Frequency (MHz) | Reading (dBuV) | Correct Factor (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
| 1000.000 353 Frequency (MHz) 4904.000 | Reading (dBuV) | Correct Factor (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
| 1000.000 353 Frequency (MHz) 4904.000 | Reading (dBuV) | Correct Factor (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
| 1000.000 353 Frequency (MHz) 4904.000 | Reading (dBuV) | Correct Factor (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
| 1000.000 353 Frequency (MHz) 4904.000 | Reading (dBuV) | Correct Factor (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
| 1000.000 353 Frequency (MHz) 4904.000 | Reading (dBuV) | Correct Factor (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
| 1000.000 353 | Reading (dBuV) | Correct Factor (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
| 1000.000 353 Frequency (MHz) 4904.000 N/A | Reading (dBuV) 38.64 | Correct Factor (dB/m) 4.51 | Result (dBuV/m) 43.15 | Limit (dBuV/m) 74.00 | Margin (dB) -30.85 | Remark peak |
| 1000.000 353 Frequency (MHz) 4904.000 N/A emark: 1. Mea | Reading (dBuV) 38.64 | Correct Factor (dB/m) 4.51 | Result (dBuV/m) 43.15 | Limit (dBuV/m) | Margin (dB) -30.85 | Remark peak |
| 1000.000 353 Frequency (MHz) 4904.000 N/A emark: 1. Mea func | Reading (dBuV) 38.64 | Correct Factor (dB/m) 4.51 | Result (dBuV/m) 43.15 | Limit (dBuV/m) 74.00 | Margin (dB) -30.85 | Remark peak |