

Applicant: Shenzhen EDUP Electronics Technology Co.,Ltd.

Product: Co-screen Device

Model No.: EH-WD9905, EH-WD9902, EH-WD9903, EH-WD9906,

EH-WD9907

Trademark: EDUP, EDUP HOME, EDUP LOVE, WISE TIGER

Test Standards: FCC Part 15.247

Test result:

It is herewith confirmed and found to comply with the

requirements set up by ANSI C63.10, FCC Part 15.247 for

the evaluation of electromagnetic compatibility

Approved By

Terry lang

Terry Tang

Manager

Dated: April 21, 2023

Results appearing herein relate only to the sample tested The technical reports is issued errors and omissions exempt and is subject to withdrawal at

SHENZHEN TIMEWAY TESTING LABORATORIES

Zone C, 1st Floor, Block B, Jun Xiang Da Building, Zhongshan Park Road West, Tong Le Village, Nanshan District, Shenzhen, China

Tel (755) 83448688, Fax (755) 83442996, E-Mail:info@timeway-lab.com

Date: 2023-04-21



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Special Statement:

The testing quality ability of our laboratory meet with "Quality Law of People's Republic of China" Clause 19.

The testing quality system of our laboratory meet with ISO/IEC-17025 requirements, which is approved by CNAL. This approval result is accepted by MRA of APLAC.

Our test facility is recognized, certified, or accredited by the following organizations:

CNAL-LAB Code: L2292

The EMC Laboratory has been assessed and in compliance with CNAL/AC01:2002 accreditation criteria for testing Laboratories (identical to ISO/IEC 17025:2017 General Requirements) for the Competence of testing Laboratories.

FCC-Registration No.: 744189

The EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications commission. The acceptance letter from the FCC is maintained in our files. Registration No.: 744189.

Industry Canada (IC) — Registration No.:5205A

The EMC Laboratory has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 5205A.

A2LA (Certification Number:5013.01)

The EMC Laboratory has been accredited by the American Association for Laboratory Accreditation (A2LA). Certification Number:5013.01

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Test Report Conclusion

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1.0 General Details

1.1 Test Lab Details

Name: SHENZHEN TIMEWAY TESTING LABORATORIES.

Address: Zone C, 1st Floor, Block B, Jun Xiang Da Building, Zhongshan Park Road West, Tong Le

Village, Nanshan District, Shenzhen, China

Telephone: (755) 83448688 Fax: (755) 83442996

Site Listed with Federal Communications commission (FCC)

Registration Number: 744189 For 3m Anechoic Chamber

Site Listed with Industry Canada of Ottawa, Canada

Registration Number: IC: 5205A

For 3m Anechoic Chamber

1.2 Applicant Details

Applicant: Shenzhen EDUP Electronics Technology Co.,Ltd.

Address: 6 Floor, #6 Building, No.48, Kangzheng Road Liantang Industrial Area, Buji Town,

Shenzhen, China

Telephone: -Fax: --

1.3 Description of EUT

Product: Co-screen Device

Manufacturer: Shenzhen EDUP Electronics Technology Co.,Ltd.

Address: 6 Floor, #6 Building, No.48, Kangzheng Road Liantang Industrial Area, Buji

Town, Shenzhen, China

Trademark: EDUP

Additional Trademark: EDUP HOME, EDUP LOVE, WISE TIGER

Model Number: EH-WD9905

Additional Model Number: EH-WD9902, EH-WD9903, EH-WD9906, EH-WD9907

Hardware Version: V1.0

Software Version: RTL8723FU MP Cersion 0.0001.1020.2018

Serial No.: N/A

Rating: DC5.0V, 1A

Type of Modulation IEEE 802.11b: DSSS (CCK, QPSK, DBPSK)

IEEE 802.11g/n (HT20, HT40): OFDM (64QAM, 16QAM, QPSK, BPSK)

Frequency range IEEE 802.11b/g/n (HT20): 2412-2462MHz;

IEEE 802.11n HT40: 2422-2452MHz

Channel Spacing 5MHz for IEEE 802.11b/g/n (HT20, HT40)

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IEEE 802.11b: 11, 5.5, 2, 1 Mbps Air Data Rate

IEEE 802.11g: 54, 48,36, 24, 18, 12, 9, 6 Mbps

IEEE 802.11n HT20/HT40: mcs0-mcs7

Frequency Selection By software

Channel Number IEEE 802.11b/g/n (HT20): 11 Channels;

IEEE 802.11n (HT40): 7 Channels;

Antenna: Integral antenna with gain 3.04dBi Max (Get from the antenna specification)

Submitted Sample: 2 Samples

1.5 Test Duration

2023-04-13 to 2023-04-21

1.6 Test Uncertainty

Conducted Emissions Uncertainty = 3.6dB

Radiated Emissions below 1GHz Uncertainty =4.7dB

Radiated Emissions above 1GHz Uncertainty =6.0dB

Conducted Power Uncertainty =6.0dB

Occupied Channel Bandwidth Uncertainty =5%

Note: The measurement uncertainty is for coverage factor of k=2 and a level of confidence of 95%.

1.7 Test Engineer

The sample tested by

Print Name: Andy Xing

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| 2.0 Test Equipment | | | | | |
|--------------------|--------------|--------------|--------------|--------------|------------|
| Instrument Type | Manufacturer | Model | Serial No. | Date of Cal. | Due Date |
| ESPI Test Receiver | R&S | ESPI 3 | 100379 | 2022-07-15 | 2023-07-14 |
| LISN | R&S | EZH3-Z5 | 100294 | 2022-07-18 | 2023-07-17 |
| LISN | R&S | EZH3-Z5 | 100253 | 2022-07-18 | 2023-07-17 |
| Impuls-Begrenzer | R&S | ESH3-Z2 | 100281 | 2022-07-18 | 2023-07-17 |
| Loop Antenna | EMCO | 6507 | 00078608 | 2022-07-18 | 2025-07-17 |
| Spectrum | R&S | FSIQ26 | 100292 | 2022-07-15 | 2023-07-14 |
| Horn Antenna | A-INFO | LB-180400-KF | J211060660 | 2022-07-18 | 2025-07-17 |
| Horn Antenna | R&S | BBHA 9120D | 9120D-631 | 2022-07-18 | 2024-07-17 |
| Power meter | Anritsu | ML2487A | 6K00003613 | 2022-07-18 | 2023-07-17 |
| Power sensor | Anritsu | MA2491A | 32263 | 2022-07-18 | 2023-07-17 |
| Bilog Antenna | Schwarebeck | VULB9163 | 9163/340 | 2022-07-18 | 2025-07-17 |
| 9*6*6 Anechoic | | | N/A | 2022-07-26 | 2025-07-25 |
| EMI Test Receiver | RS | ESVB | 826156/011 | 2022-07-15 | 2023-07-14 |
| EMI Test Receiver | RS | ESCS 30 | 834115/006 | 2022-07-15 | 2023-07-14 |
| Spectrum | HP/Agilent | E4407B | MY50441392 | 2022-07-15 | 2023-07-14 |
| Spectrum | RS | FSP | 1164.4391.38 | 2022-07-15 | 2023-07-14 |
| RF Cable | Zhanadi | ZT26-NJ-NJ-8 | | 2022-07-15 | 2023-07-14 |
| RF Cable | Zhengdi | M/FA | | | |
| RF Cable | Zhengdi | 7m | | 2022-07-15 | 2023-07-14 |
| Pre-Amplifier | Schwarebeck | BBV9743 | #218 | 2022-07-15 | 2023-07-14 |
| Pre-Amplifier | HP/Agilent | 8449B | 3008A00160 | 2022-07-15 | 2023-07-14 |
| LISN | SCHAFFNER | NNB42 | 00012 | 2022-08-18 | 2023-07-17 |

2.2 Automation Test Software

For Conducted Emission Test

| Name | Version |
|--------|-------------------|
| EZ-EMC | Ver.EMC-CON 3A1.1 |

For Radiated Emissions

| Name | Version |
|---|---------|
| EMI Test Software BL410-EV18.91 | V18.905 |
| EMI Test Software BL410-EV18.806 High Frequency | V18.06 |

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3. DESCRIPTION OF TEST MODES

IEEE 802.11b, 802.11g, 802.11n (HT20) mode

The EUT had been tested under operating condition. There are three channels have been tested as following:

| Channel | Frequency (MHz) |
|---------|-----------------|
| Low | 2412 |
| Middle | 2437 |
| High | 2462 |

IEEE 802.11b mode: 1Mbps data rate (worst case) was chosen for full testing. IEEE 802.11g mode: 6Mbps data rate (worst case) was chosen for full testing. IEEE 802.11n (HT20) mode: mcs0 (worst case) were chosen for full testing;

IEEE 802.11n (HT40) mode

The EUT had been tested under operating condition. There are three channels have been tested as following:

| Channel | Frequency (MHz) |
|---------|-----------------|
| Low | 2422 |
| Middle | 2437 |
| High | 2452 |

IEEE 802.11n (HT40) mode: mcs0 data rate (worst case) were chosen for full testing

Note: During the test, the duty cycle was set up to >98%

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3.0 **Technical Details**

3.1 **Summary of test results**

| Standard | Test Type | Result | Notes |
|------------------------------------|----------------------------------|--------|----------|
| FCC Part 15, Paragraph15.203 | Antenna Requirement | Pass | Complies |
| FCC Part 15, Paragraph15.207 | Conducted Emission Test | Pass | Complies |
| | Spectrum bandwidth of a | Pass | Complies |
| FCC Part 15 Subpart C | Orthogonal Frequency | | |
| Paragraph 15.247(a)(2) Limit | Division Multiplex System | | |
| 1 urugrupii 1012 i / (u)(2) 2iiiii | Limit: 6dB | | |
| | bandwidth>500kHz | | |
| FCC Part 15, Paragraph | Maximum peak output | Pass | |
| 15.247(b) | power | | Complies |
| 13.247(0) | Limit: max. 30dBm | | |
| FCC Part 15, Paragraph | Transmitter Radiated | Pass | Complies |
| 15.109,15.205 & 15.209 | Emission | | |
| | Limit: Table 15.209 | | |
| FCC Part 15, Paragraph | Power Spectral Density | Pass | Complies |
| 15.247(e) | Limit: max. 8dBm/3kHz | | |
| FCC Part 15, Paragraph | Out of Band Emission and | Pass | Complies |
| 15.247(d) | Restricted Band | | |
| | Radiation | | |
| | Limit: 20dB less than | | |
| | peak value of fundamental | | |
| | frequency | | |
| | Restricted band limit: | | |
| | Table 15.209 | | |

3.2 **Test Standards**

FCC Part 15 Subpart & Subpart C, Paragraph 15.247

4.0 **EUT Modification**

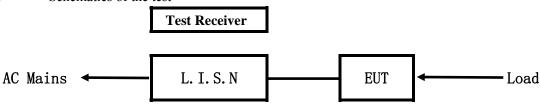
No modification by SHENZHEN TIMEWAY TESTING LABORATORIES.

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5.0 Power Line Conducted Emission Test

5.1 Schematics of the test

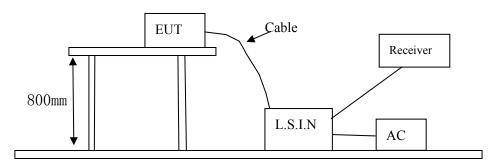


EUT: Equipment Under Test

5.2 Test Method and test Procedure

The EUT was tested according to ANSI C63.10-2013. The Frequency spectrum from 0.15 MHz to 30MHz was investigated. The LISN used was 50 ohm/50 uH as specified by section 5.1 of ANSI C63.10 -2013.

Test Voltage: 120V~, 60Hz Block diagram of Test setup



5.3 Configuration of the EUT

The EUT was configured according to ANSI C63.10-2013. All interface ports were connected to the appropriate peripherals. All peripherals and cables are listed below.

A. EUT

| Device | Manufacturer | Model | FCC ID |
|------------------|--|---|----------------|
| Co-screen Device | Shenzhen EDUP Electronics Technology Co.,Ltd. | EH-WD9905, EH-WD9902, EH-WD9903, EH-WD9906, EH-WD9907 | 2AHRD-EHWD9905 |

B. Internal Device

| Device | Manufacturer | Model | FCC ID/DOC |
|--------|--------------|-------|------------|
| N/A | | | |

C. Peripherals

| Device | Manufacturer | Model | FCC ID/DOC | Cable |
|--------|--------------|-------|------------|-------|
| PC | ThinkPad | R4 | | |

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5.4 EUT Operating Condition

Operating condition is according to ANSI C63.10-2013.

- A Setup the EUT and simulators as shown on follow
- B Enable AF signal and confirm EUT active to normal condition

5.5 Power line conducted Emission Limit according to Paragraph 15.207

| Frequency | Limits (c | lB μV) |
|------------------|------------------|---------------|
| (MHz) | Quasi-peak Level | Average Level |
| $0.15 \sim 0.50$ | 66.0~56.0* | 56.0~46.0* |
| $0.50 \sim 5.00$ | 56.0 | 46.0 |
| 5.00 ~ 30.00 | 60.0 | 50.0 |

Notes:

- 1. *Decreasing linearly with logarithm of frequency.
- 2. The tighter limit shall apply at the transition frequencies

5.6 Test Results

The frequency spectrum from 0.15MHz to 30MHz was investigated. All reading are quasi-peak values with a resolution bandwidth of 9kHz.

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A: Conducted Emission on Live Terminal (150kHz to 30MHz)

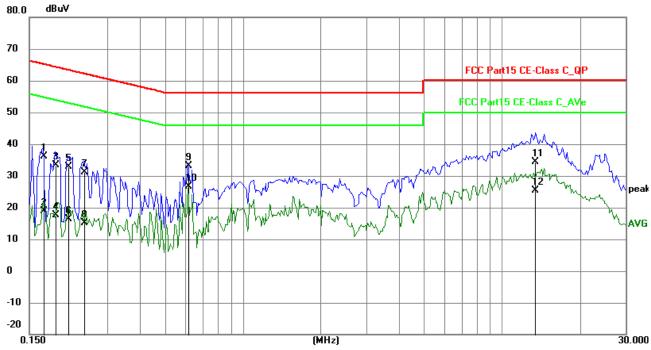
EUT Operating Environment

Temperature: 26°C Humidity: 65%RH Atmospheric Pressure: 101 kPa

EUT set Condition: Keep WIFI Transmitting

Results: Pass

Please refer to following diagram for individual



| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB) | Level (dBuV) | Limit (dBuV) | Margin (dB) | Detector | P/F |
|-----|--------------------|----------------|----------------|-----------------|-----------------|----------------|----------|-----|
| 1 | 0.1695 | 26.43 | 9.77 | 36.20 | 64.98 | -28.78 | QP | Р |
| 2 | 0.1695 | 9.06 | 9.77 | 18.83 | 54.98 | -36.15 | AVG | Р |
| 3 | 0.1890 | 23.66 | 9.76 | 33.42 | 64.08 | -30.66 | QP | Р |
| 4 | 0.1890 | 7.87 | 9.76 | 17.63 | 54.08 | -36.45 | AVG | Р |
| 5 | 0.2124 | 23.19 | 9.75 | 32.94 | 63.11 | -30.17 | QP | Р |
| 6 | 0.2124 | 6.53 | 9.75 | 16.28 | 53.11 | -36.83 | AVG | Р |
| 7 | 0.2436 | 21.35 | 9.75 | 31.10 | 61.97 | -30.87 | QP | Р |
| 8 | 0.2436 | 5.42 | 9.75 | 15.17 | 51.97 | -36.80 | AVG | Р |
| 9 | 0.6141 | 23.26 | 9.78 | 33.04 | 56.00 | -22.96 | QP | Р |
| 10 | 0.6141 | 16.82 | 9.78 | 26.60 | 46.00 | -19.40 | AVG | Р |
| 11 | 13.4754 | 24.15 | 10.31 | 34.46 | 60.00 | -25.54 | QP | Р |
| 12 | 13.4754 | 15.00 | 10.31 | 25.31 | 50.00 | -24.69 | AVG | Р |

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B: Conducted Emission on Neutral Terminal (150kHz to 30MHz)

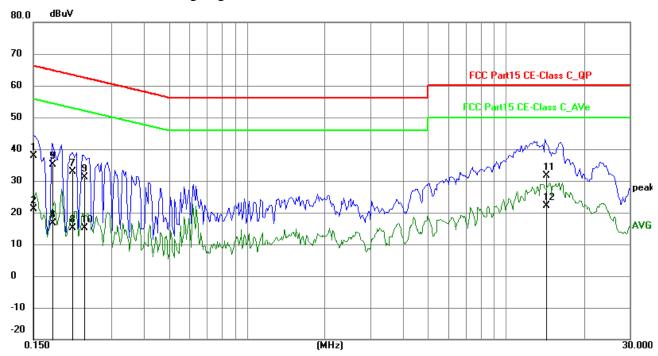
EUT Operating Environment

Humidity: 65%RH Atmospheric Pressure: 101 kPa Temperature: 26°C

EUT set Condition: Keep WIFI Transmitting

Results: Pass

Please refer to following diagram for individual



| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB) | Level (dBuV) | Limit (dBuV) | Margin (dB) | Detector | P/F |
|-----|--------------------|-------------------|----------------|-----------------|-----------------|----------------|----------|-----|
| 1 | 0.1500 | 27.98 | 9.79 | 37.77 | 66.00 | -28.23 | QP | Р |
| 2 | 0.1500 | 11.28 | 9.79 | 21.07 | 56.00 | -34.93 | AVG | Р |
| 3 | 0.1773 | 25.31 | 9.77 | 35.08 | 64.61 | -29.53 | QP | Р |
| 4 | 0.1773 | 6.74 | 9.77 | 16.51 | 54.61 | -38.10 | AVG | Р |
| 5 | 0.1773 | 25.31 | 9.77 | 35.08 | 64.61 | -29.53 | QP | Р |
| 6 | 0.1773 | 6.82 | 9.77 | 16.59 | 54.61 | -38.02 | AVG | Р |
| 7 | 0.2124 | 23.24 | 9.75 | 32.99 | 63.11 | -30.12 | QP | Р |
| 8 | 0.2124 | 5.40 | 9.75 | 15.15 | 53.11 | -37.96 | AVG | Р |
| 9 | 0.2358 | 21.45 | 9.75 | 31.20 | 62.24 | -31.04 | QP | Р |
| 10 | 0.2358 | 5.33 | 9.75 | 15.08 | 52.24 | -37.16 | AVG | Р |
| 11 | 14.3256 | 21.18 | 10.35 | 31.53 | 60.00 | -28.47 | QP | Р |
| 12 | 14.3256 | 11.76 | 10.35 | 22.11 | 50.00 | -27.89 | AVG | Р |

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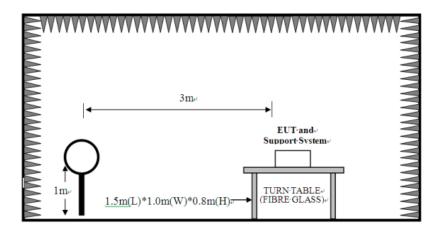


6 Radiated Emission Test

- 6.1 Test Method and test Procedure:
- (1) The EUT was tested according to ANSI C63.10-2013. The radiated test was performed at Timeway EMC Laboratory. This site is on file with the FCC laboratory division, Registration No. 744189
- (2) The EUT, peripherals were put on the turntable which table size is 1m x 1.5 m, table high 0.8 m. All set up is according to ANSI C63.10-2013.
- (3) The frequency spectrum from 30 MHz to 25 GHz was investigated. All readings from 30 MHz to 1 GHz are Quasi-peak values with a resolution bandwidth of 120 kHz. F For measurement above 1GHz, peak values with RBW=1MHz VBW=3MHz and PK detector. AV value with RBW=1MHz, VBW=3MHz and RMS detector. Measurements were made at 3 meters.
- (4) The antenna high is varied from 1 m to 4 m high to find the maximum emission for each frequency.
- (5) Maximizing procedure was performed on the six (6) highest emissions to ensure EUT compliance is with all installation combinations. All data was recorded in the peak detection mode. Quasi-peak readings was performed only when an emission was found to be marginal (within -4 dB of specification limit), and are distinguished with a "QP" in the data table.
- (6) The antenna polarization: Vertical polarization and Horizontal polarization.

Block diagram of Test setup

For radiated emissions from 9kHz to 30MHz



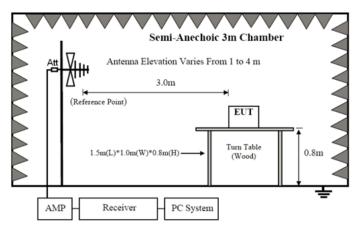
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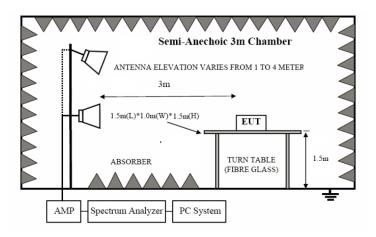
Date: 2023-04-21



For radiated emissions from 30MHz to1GHz



For radiated emissions above 1GHz



- 6.2 Configuration of The EUT
 Same as section 5.3 of this report
- 6.3 EUT Operating Condition

 Same as section 5.4 of this report.
- 6.4 Radiated Emission Limit

All emission from a digital device, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strength specified below:

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Frequencies in restricted band are complied to limit on Paragraph 15.209

| | 1 | 8 1 |
|-----------------------|--------------|-----------------------------------|
| Frequency Range (MHz) | Distance (m) | Field strength (dB μ V/m) |
| 0.009-0.049 | 3 | 20log(2400/F(kHz)) +40log (300/3) |
| 0.490-1.705 | 3 | 20log(24000/F(kHz)) +40log (30/3) |
| 1.705-30 | 3 | 69.5 |
| 30-88 | 3 | 40.0 |
| 88-216 | 3 | 43.5 |
| 216-960 | 3 | 46.0 |
| Above 960 | 3 | 54.0 |

Note:

- 1. RF Voltage (dBuV) = 20 log RF Voltage (uV)
- 2. In the Above Table, the tighter limit applies at the band edges.
- 3. Distance refers to the distance in meters between the measuring instrument antenna and the EUT
- 4. All scanning using PK detector. And the final emission level was get using QP detector for frequency range from 30-1000MHz.As to 1G-25G, the final emission level got using PK. For fundamental measurement, PK detector used.
- 5. For radiated emissions from 9kHz to 30MHz, the emission level is much less than the limit for more than 20dB. No necessary to take down the record.
- 6. Worse case were recorded in the test report. 802.11g was the worst case.

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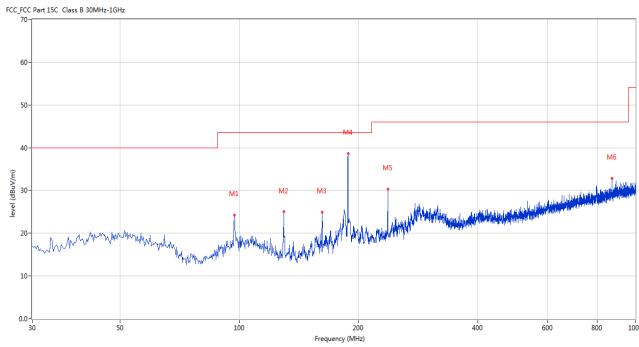


Test result General Radiated Emission Data and Harmonics Radiated Emission Data

Radiated Emission In Horizontal (30MHz----1000MHz)

EUT set Condition: **Keep Transmitting**

Results: Pass



| No. | Frequency | Results | Factor | Limit | Over Limit | Detector | Table (o) | Height | ANT | Verdict |
|-----|-----------|----------|--------|----------|------------|----------|-----------|--------|------------|---------|
| | (MHz) | (dBuV/m) | (dB) | (dBuV/m) | (dB) | | | (cm) | | |
| 1 | 97.156 | 24.32 | -13.90 | 43.5 | -19.18 | Peak | 177.00 | 100 | Horizontal | Pass |
| 2 | 129.400 | 24.99 | -16.81 | 43.5 | -18.51 | Peak | 237.00 | 100 | Horizontal | Pass |
| 3 | 161.887 | 24.90 | -16.40 | 43.5 | -18.60 | Peak | 248.00 | 100 | Horizontal | Pass |
| 4 | 188.070 | 38.62 | -14.46 | 43.5 | -4.88 | Peak | 79.00 | 100 | Horizontal | Pass |
| 5 | 237.043 | 30.26 | -12.37 | 46.0 | -15.74 | Peak | 73.00 | 100 | Horizontal | Pass |
| 6 | 873.447 | 32.83 | -2.15 | 46.0 | -13.17 | Peak | 226.00 | 100 | Horizontal | Pass |

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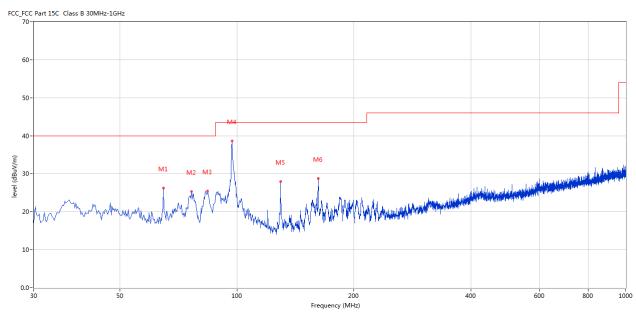


Test result General Radiated Emission Data and Harmonics Radiated Emission Data

Radiated Emission In Vertical (30MHz----1000MHz)

EUT set Condition: **Keep Transmitting**

Results: Pass



| No. | Frequency | Results | Factor | Limit | Over Limit | Detector | Table | Height | ANT | Verdict |
|-----|-----------|----------|--------|----------|------------|----------|--------|--------|----------|---------|
| | (MHz) | (dBuV/m) | (dB) | (dBuV/m) | (dB) | | (o) | (cm) | | |
| 1 | 64.669 | 26.28 | -13.49 | 40.0 | -13.72 | Peak | 262.00 | 100 | Vertical | Pass |
| 2 | 76.306 | 25.30 | -17.58 | 40.0 | -14.70 | Peak | 251.00 | 100 | Vertical | Pass |
| 3 | 84.064 | 25.43 | -16.72 | 40.0 | -14.57 | Peak | 23.00 | 100 | Vertical | Pass |
| 4 | 97.156 | 38.66 | -13.90 | 43.5 | -4.84 | Peak | 51.00 | 100 | Vertical | Pass |
| 5 | 129.400 | 27.95 | -16.81 | 43.5 | -15.55 | Peak | 201.00 | 100 | Vertical | Pass |
| 6 | 161.645 | 28.79 | -16.39 | 43.5 | -14.71 | Peak | 201.00 | 100 | Vertical | Pass |

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Operation Mode: Transmitting under CH01 for 802.11b mode

| Frequency (MHz) | Level@3m (dB \u03b4 V/m) | Antenna Polarity | Limit@3m (dB \(\mu \text{V/m} \) |
|-----------------|--------------------------|------------------|-----------------------------------|
| 4824.00 | 61.8 (PK) / 45.9 (AV) | Н | 74(Peak)/ 54(AV) |
| 4824.00 | 57.3 (PK) / 41.6 (AV) | V | 74(Peak)/ 54(AV) |
| 7236.00 | - | H/V | 74(Peak)/ 54(AV) |
| 9648.00 | | H/V | 74(Peak)/ 54(AV) |
| 12060 | 1 | H/V | 74(Peak)/ 54(AV) |
| 14472 | 1 | H/V | 74(Peak)/ 54(AV) |
| 16884 | - | H/V | 74(Peak)/ 54(AV) |
| 19296 | ı | H/V | 74(Peak)/ 54(AV) |
| 21708 | | H/V | 74(Peak)/ 54(AV) |
| 24120 | | H/V | 74(Peak)/ 54(AV) |

Operation Mode: Transmitting under CH06 for 802.11b mode

| Frequency (MHz) | Level@3m (dB \u03b4 V/m) | Antenna Polarity | Limit@3m (dB \(\mu \)V/m) |
|-----------------|--------------------------|------------------|----------------------------|
| 4874.00 | 60.9 (PK)/ 45.1 (AV) | Н | 74(Peak)/ 54(AV) |
| 4874.00 | 56.7 (PK)/ 41.3 (AV) | V | 74(Peak)/ 54(AV) |
| 7311.00 | - | H/V | 74(Peak)/ 54(AV) |
| 9748.00 | - | H/V | 74(Peak)/ 54(AV) |
| 12185 | - | H/V | 74(Peak)/ 54(AV) |
| 14622 | 1 | H/V | 74(Peak)/ 54(AV) |
| 17059 | • | H/V | 74(Peak)/ 54(AV) |
| 19496 | - | H/V | 74(Peak)/ 54(AV) |
| 21933 | - | H/V | 74(Peak)/ 54(AV) |
| 24370 | | H/V | 74(Peak)/ 54(AV) |

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Operation Mode: Transmitting under CH11 for 802.11b mode

| Frequency (MHz) | Level@3m (dB μ V/m) | Antenna Polarity | Limit@3m (dB µ V/m) |
|-----------------|----------------------|------------------|---------------------|
| 4924 | 60.6 (PK)/ 45.3 (AV) | Н | 74(Peak)/ 54(AV) |
| 4924 | 57.1 (PK)/ 41.8 (AV) | V | 74(Peak)/ 54(AV) |
| 7368 | | H/V | 74(Peak)/ 54(AV) |
| 9848 | | H/V | 74(Peak)/ 54(AV) |
| 12310 | | H/V | 74(Peak)/ 54(AV) |
| 14772 | | H/V | 74(Peak)/ 54(AV) |
| 17234 | | H/V | 74(Peak)/ 54(AV) |
| 19696 | | H/V | 74(Peak)/ 54(AV) |
| 22158 | | H/V | 74(Peak)/ 54(AV) |
| 24620 | | H/V | 74(Peak)/ 54(AV) |

Note: 1. Level = Reading + AF + Cable - Preamp + Filter - Dist, Margin = Level - Limit

- 2. Remark "---" means that the emissions level is too low to be measured
- 3. For 802.11b mode at 1Mbps
- 4. For radiated Emissions from 18-25GHz and below 30MHz, it is only the floor noise and less than the limit for more than 20dB. No necessary to take down.
- 5. Note: the final peak measurement results less than the AV limit. No necessary to take down the final AV measurement result

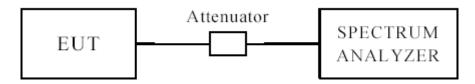
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7.0 6dB Bandwidth Measurement

7.1 Test Setup



7.2 Limits of 6dB Bandwidth Measurement

The minimum of 6dB Bandwidth Measurement is >500 kHz

7.3 Test Procedure

- 1. Set resolution bandwidth (RBW) = 100 kHz
- 2. Set the video bandwidth (VBW) \geq 3 x RBW.
- 3. Detector = Peak.
- 4. Trace mode = max hold.
- 5. Sweep = auto couple.
- 6. Allow the trace to stabilize.
- 7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

7.4 Test Result

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6dB Occupied Bandwidth

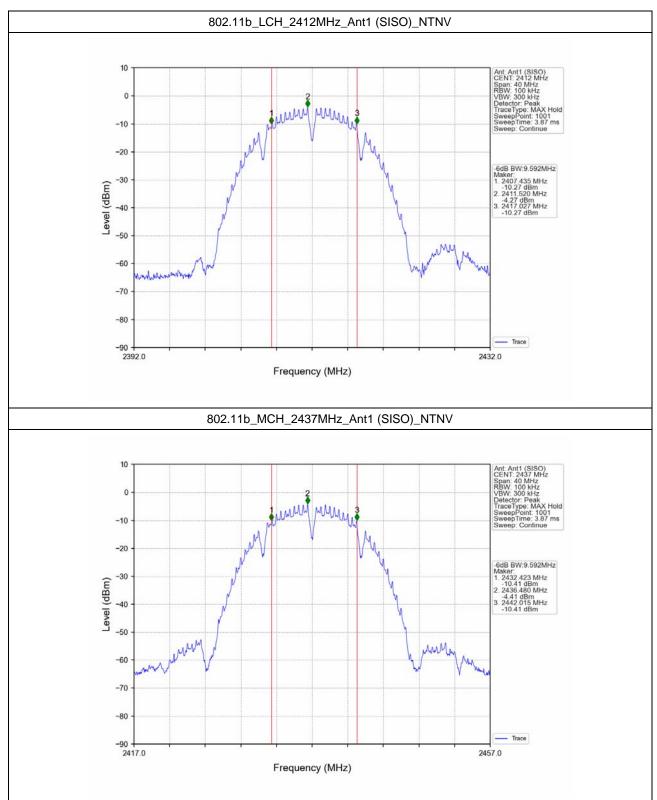
| Mode | TX | Frequency | | 6dB Bandv | \ | |
|-------------------|------|-----------|-----|-----------|-------|---------|
| | Туре | (MHz) | ANT | Result | Limit | Verdict |
| | | 2412 | 1 | 9.592 | >=0.5 | Pass |
| 802.11b | SISO | 2437 | 1 | 9.592 | >=0.5 | Pass |
| | | 2462 | 1 | 9.123 | >=0.5 | Pass |
| 802.11g | | 2412 | 1 | 15.122 | >=0.5 | Pass |
| | SISO | 2437 | 1 | 15.116 | >=0.5 | Pass |
| | | 2462 | 1 | 15.096 | >=0.5 | Pass |
| 000 11n | SISO | 2412 | 1 | 15.056 | >=0.5 | Pass |
| 802.11n | | 2437 | 1 | 15.066 | >=0.5 | Pass |
| (HT20) | | 2462 | 1 | 15.121 | >=0.5 | Pass |
| 802.11n (HT40) | | 2422 | 1 | 31.350 | >=0.5 | Pass |
| | SISO | 2437 | 1 | 32.573 | >=0.5 | Pass |
| | | 2452 | 1 | 32.563 | >=0.5 | Pass |

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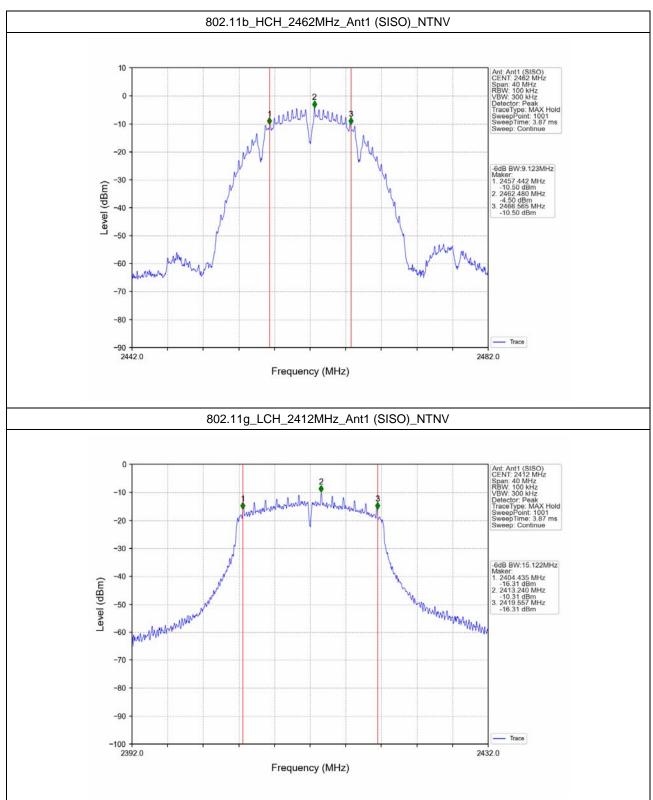
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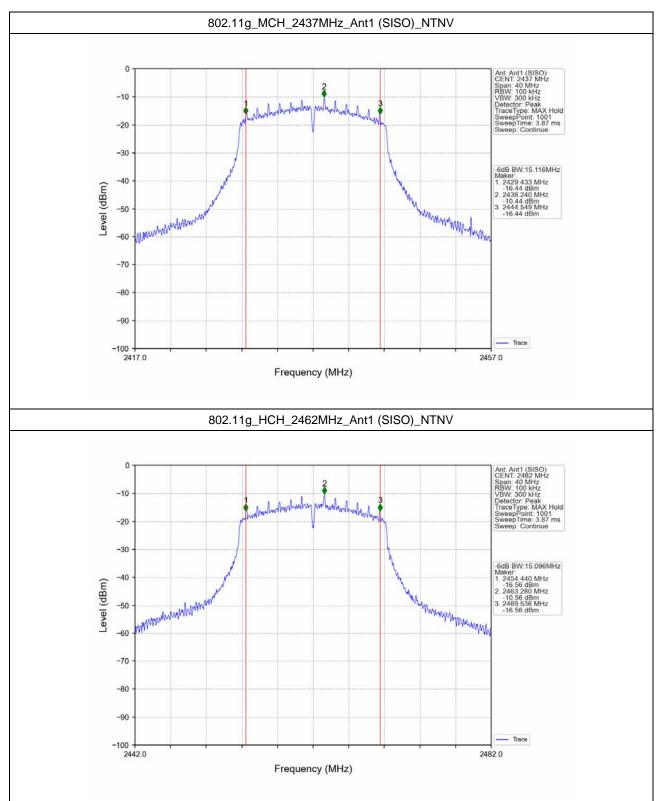
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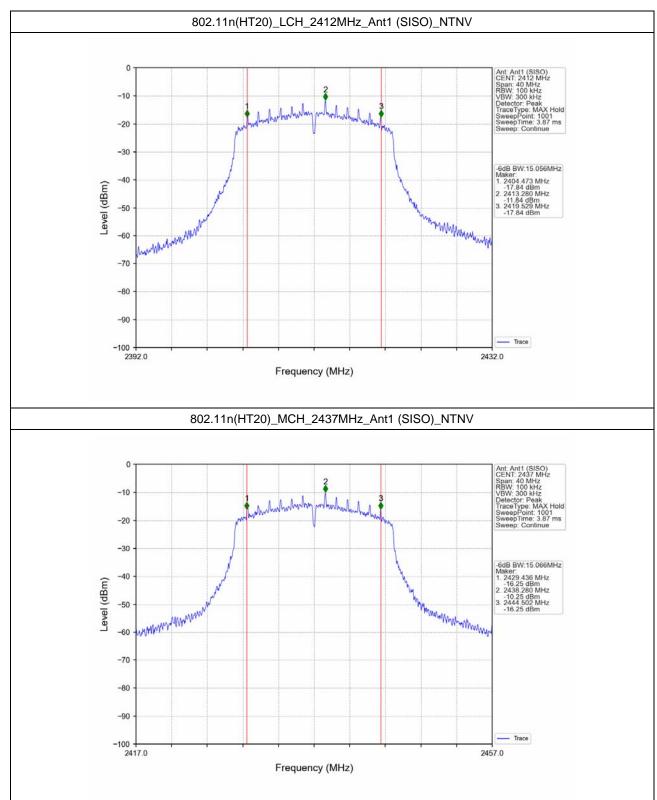
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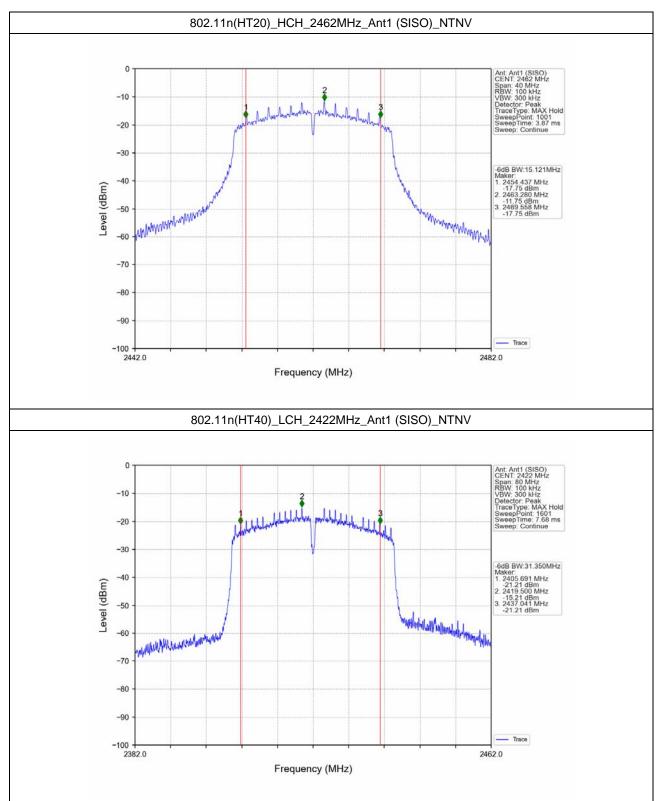
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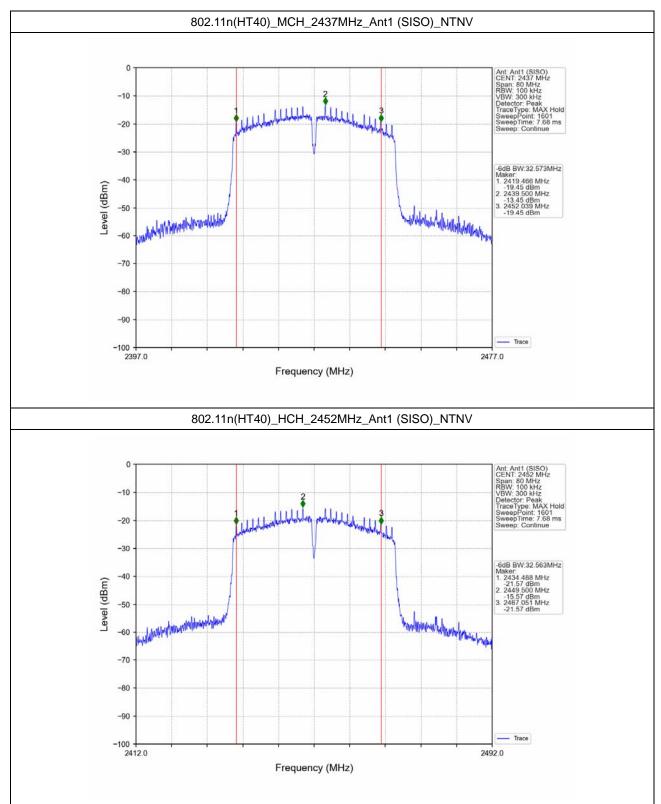
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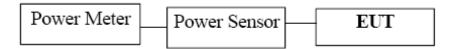
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8. Maximum Output Power

8.1 Test Setup



8.2 Limits of Maximum Output Power

The Maximum Output Power Measurement is 30dBm.

8.3 Test Procedure

The RF power output was measured with a Power meter connected to the RF Antenna connector (conducted measurement) while EUT was operating in transmit mode at the appropriate centre frequency.

Note: The PK power was measured

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8.4Test Results

| Mode | TX | Frequency Maximum Peak Conducted Output Power (| | | \/ordiot |
|----------|------|---|------|-------|----------|
| | Туре | (MHz) | ANT1 | Limit | Verdict |
| | | 2412 | 7.45 | <=30 | Pass |
| 802.11b | SISO | 2437 | 7.27 | <=30 | Pass |
| | | 2462 | 7.09 | <=30 | Pass |
| | SISO | 2412 | 7.02 | <=30 | Pass |
| 802.11g | | 2437 | 6.86 | <=30 | Pass |
| | | 2462 | 6.63 | <=30 | Pass |
| 000 44 = | | 2412 | 4.74 | <=30 | Pass |
| 802.11n | SISO | 2437 | 6.50 | <=30 | Pass |
| (HT20) | | 2462 | 5.41 | <=30 | Pass |
| 000 44 = | | 2422 | 4.97 | <=30 | Pass |
| 802.11n | SISO | 2437 | 6.90 | <=30 | Pass |
| (HT40) | | 2452 | 4.62 | <=30 | Pass |

Note: 1. At finial test to get the worst-case emission at msc0 of 11n HT40 for CH03, CH06 and CH09

2. The result basic equation calculation as follow: Power Output = Power Reading + Cable loss + Attenuator

3. The worse case was recorded

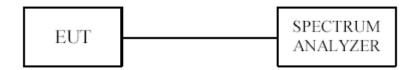
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9. Power Spectral Density Measurement

9.1 Test Setup



9.2 Limits of Power Spectral Density Measurement

The Maximum Power Spectral Density Measurement is 8dBm/3kHz.

9.3 Test Procedure

- 1. Use this procedure when the maximum peak conducted output power in the fundamental emission is used to demonstrate compliance.
- 2. Set the RBW = 3 kHz.
- 3. Set the VBW \geq 10 kHz.
- 4. Set the span to 1.5 times the DTS channel bandwidth.
- 5. Detector = peak.
- 6. Sweep time = auto couple.
- 7. Trace mode = max hold.
- 8. Allow trace to fully stabilize.
- 9. Use the peak marker function to determine the maximum amplitude level.
- 10. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.
- 11. The resulting peak PSD level must be $\leq 8 \text{ dBm/3kHz}$.

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9.4Test Result

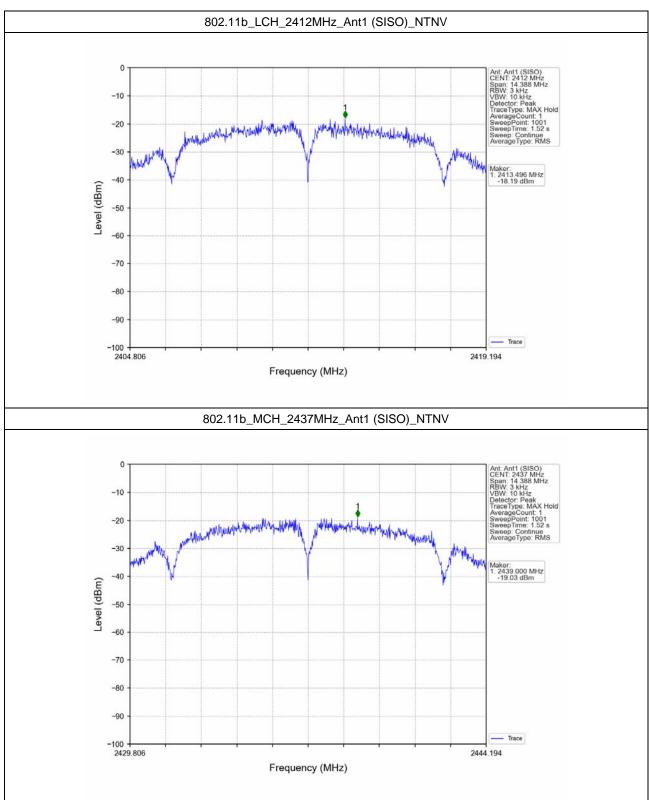
| Mada | TX | Frequency | Maximum PSI | \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ | |
|-------------------|------|-----------|-------------|---------------------------------------|---------|
| Mode | Type | (MHz) | ANT1 | Limit | Verdict |
| | | 2412 | -18.19 | <=8 | Pass |
| 802.11b | SISO | 2437 | -19.03 | <=8 | Pass |
| | | 2462 | -18.72 | <=8 | Pass |
| | SISO | 2412 | -24.79 | <=8 | Pass |
| 802.11g | | 2437 | -24.82 | <=8 | Pass |
| | | 2462 | -25.76 | <=8 | Pass |
| 000 11n | SISO | 2412 | -26.49 | <=8 | Pass |
| 802.11n | | 2437 | -24.74 | <=8 | Pass |
| (HT20) | | 2462 | -26.49 | <=8 | Pass |
| 000 11n | | 2422 | -29.72 | <=8 | Pass |
| 802.11n (HT40) | SISO | 2437 | -28.18 | <=8 | Pass |
| | | 2452 | -30.22 | <=8 | Pass |

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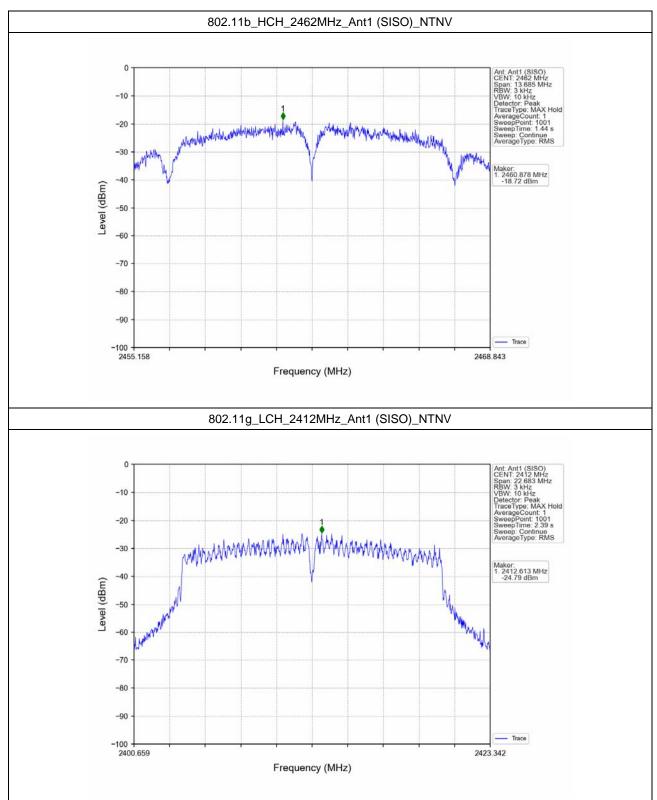
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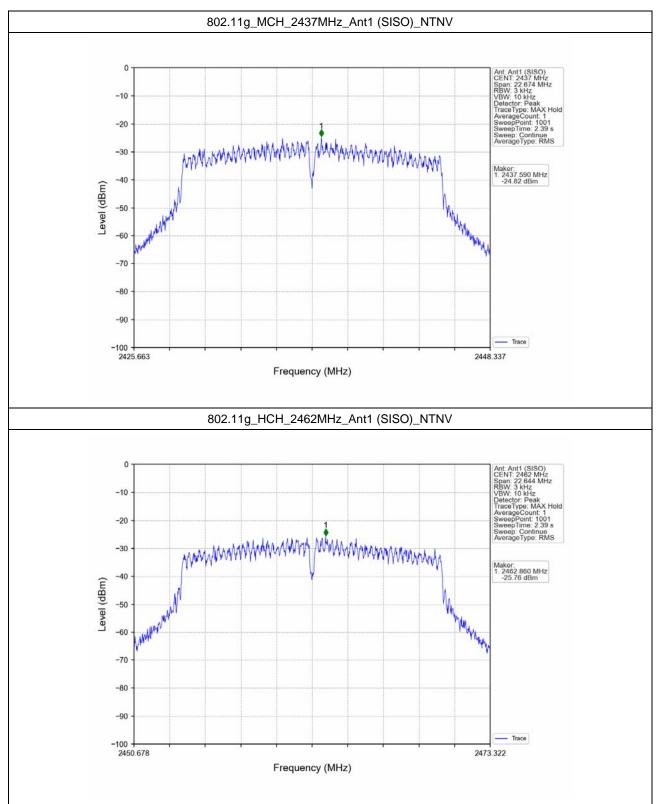
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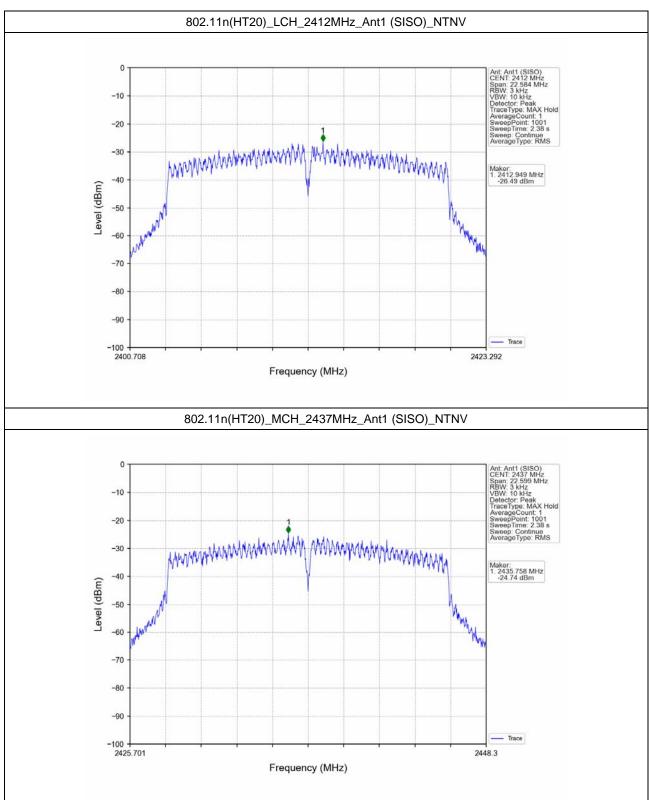
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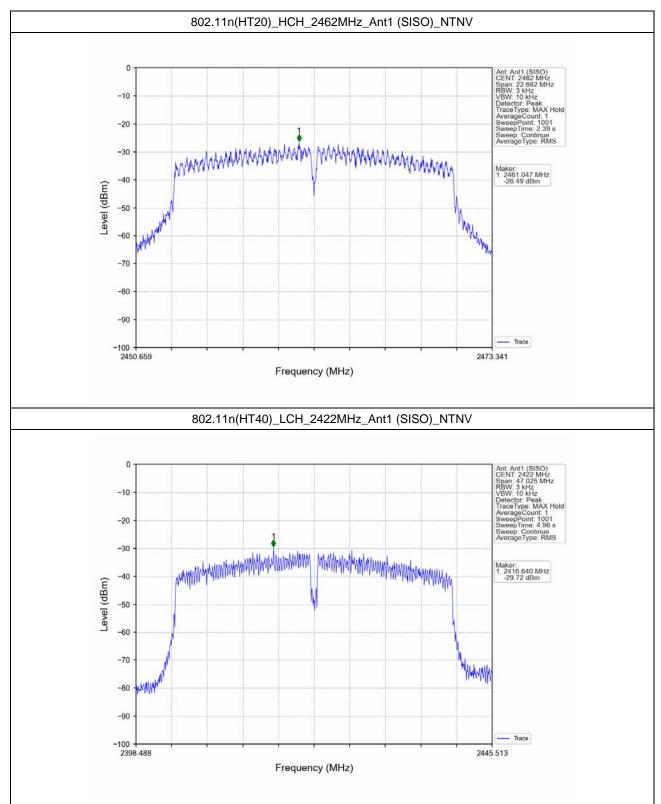
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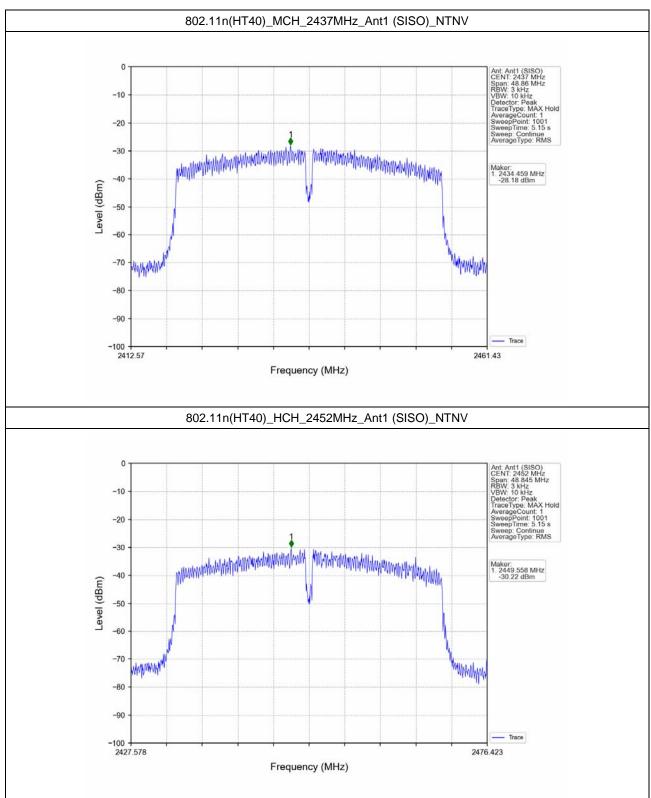
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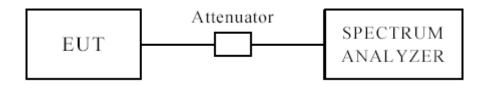
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10 Out of Band Measurement 10.1 Test Setup for band edge



The restricted band requirement based on radiated emission test; please see the clause 6 for the test setup

10.2 Limits of Out of Band Emissions Measurement

- 1. Below –20dB of the highest emission level of operating band (in 100kHz Resolution Bandwidth).
- 2. Fall in the restricted bands listed in section 15.205. The maximum permitted average field strength is listed in section 15.209.

10.3 Test Procedure

For signals in the restricted bands above and below the 2.4-2.483GHz allocated band a measurement was made of radiated emission test. (Peak values with RBW=VBW=1MHz and PK detector. AV value with RBW=1MHz, VBW=10Hz and PK detector)

For bandage test, the spectrum set as follows: RBW=100, VBW=300 kHz. A conducted measurement used

10.4 Test Result

Please see next pages

Note: 1. For band-edge measurement, the frequency from 30MHz-25GHz was tested. And It met the FCC rule.

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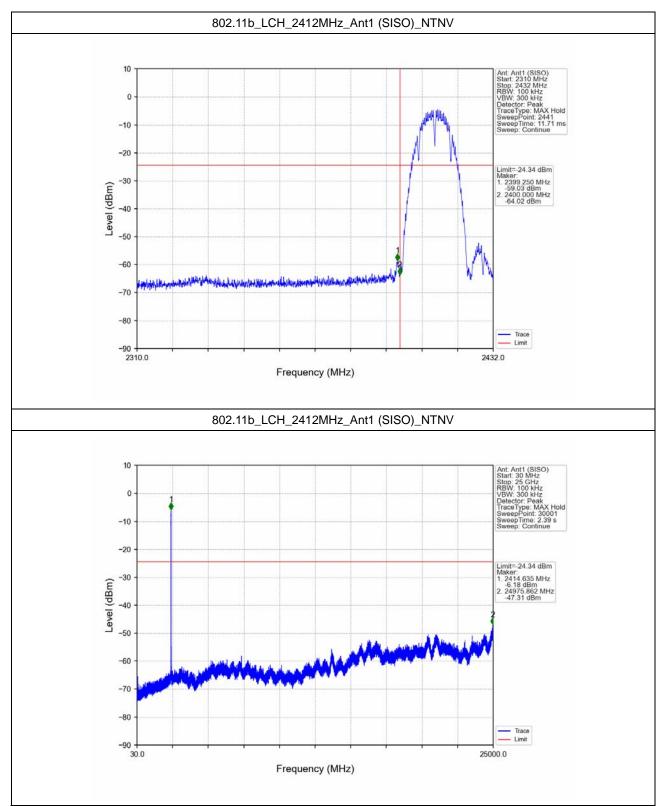


| Mada | TX | Frequency | ANIT | Level of Reference | Limit | \ |
|----------|-------------------|-----------|------|--------------------|--------|---------|
| Mode | Mode Type | (MHz) | ANT | (dBm) | (dBm) | Verdict |
| | | 2412 | 1 | -4.34 | -24.34 | Pass |
| 802.11b | SISO | 2437 | 1 | -4.34 | -24.34 | Pass |
| | | 2462 | 1 | -4.34 | -24.34 | Pass |
| | | 2412 | 1 | -10.49 | -30.49 | Pass |
| 802.11g | SISO | 2437 | 1 | -10.49 | -30.49 | Pass |
| | | 2462 | | -10.49 | -30.49 | Pass |
| 000 44 = | | 2412 | 1 | -10.29 | -30.29 | Pass |
| | 802.11n (HT20) | SISO 2437 | | -10.29 | -30.29 | Pass |
| (П120) | | 2462 | 1 | -10.29 | -30.29 | Pass |
| 000 11n | | 2422 | 1 | -13.42 | -33.42 | Pass |
| 802.11n | SISO | SISO 2437 | | -13.42 | -33.42 | Pass |
| (HT40) | | 2452 | 1 | -13.42 | -33.42 | Pass |

Note1: Refer to FCC Part 15.247 (d) and ANSI C63.10-2013, the channel contains the maximum PSD level was used to establish the reference level.

Date: 2023-04-21





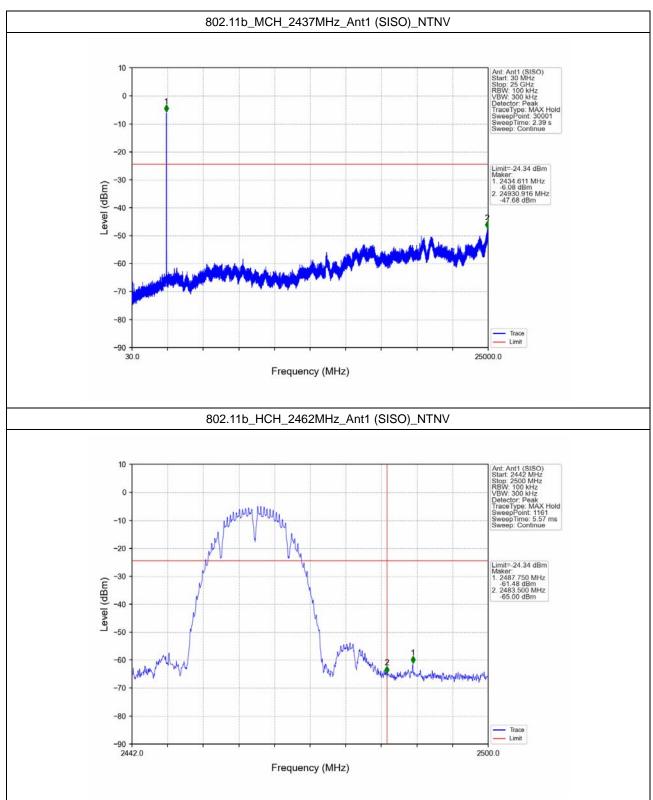
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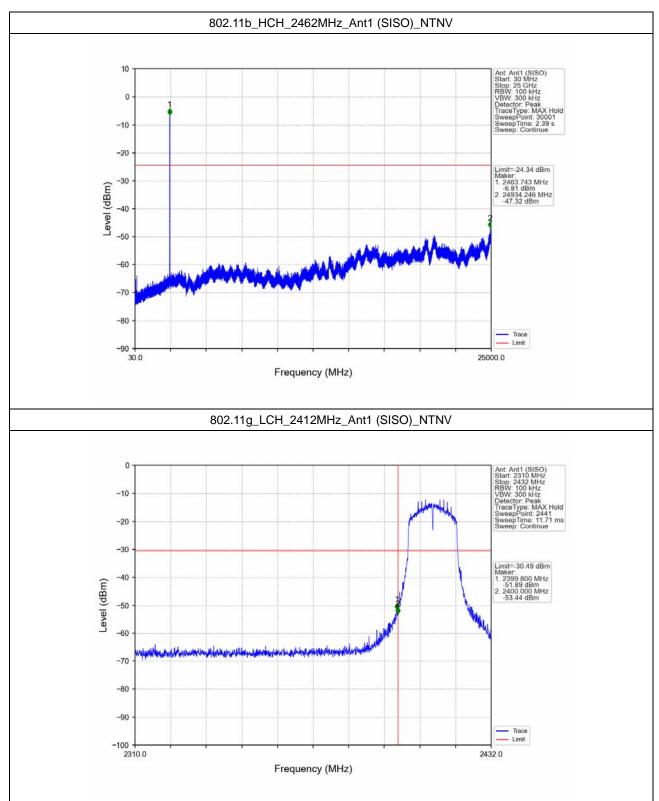
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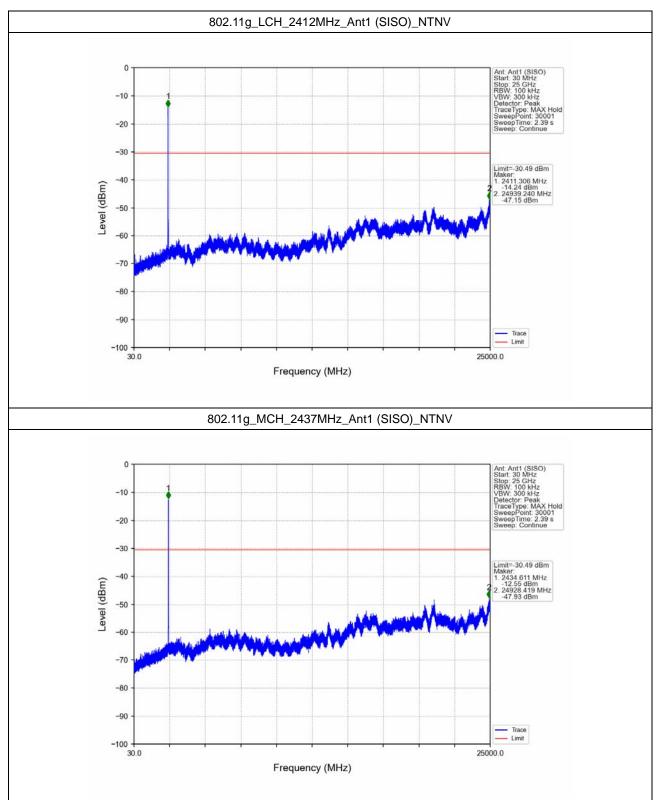
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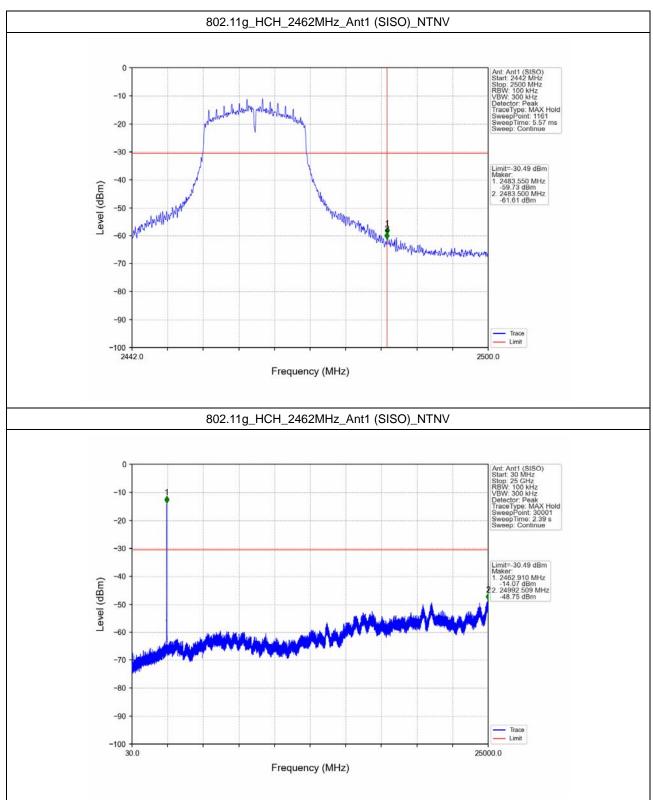
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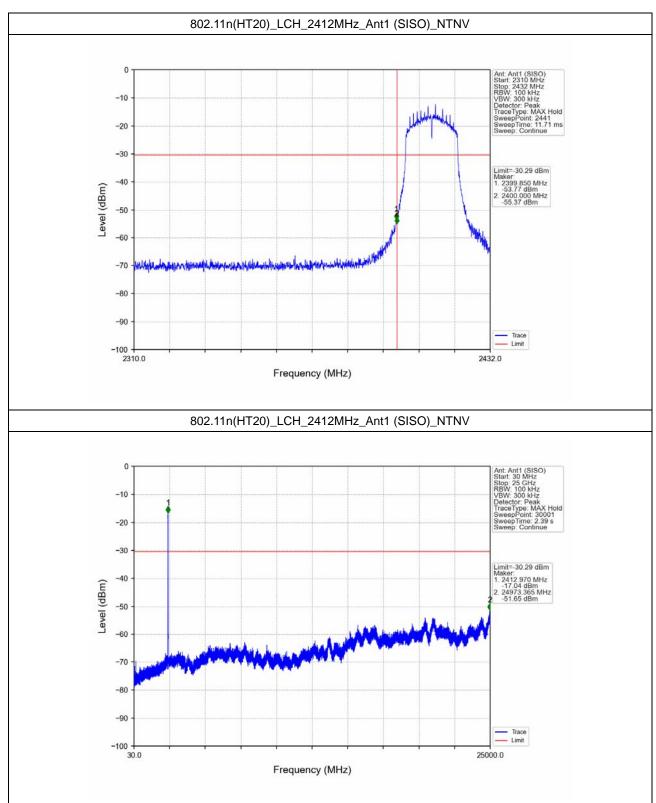
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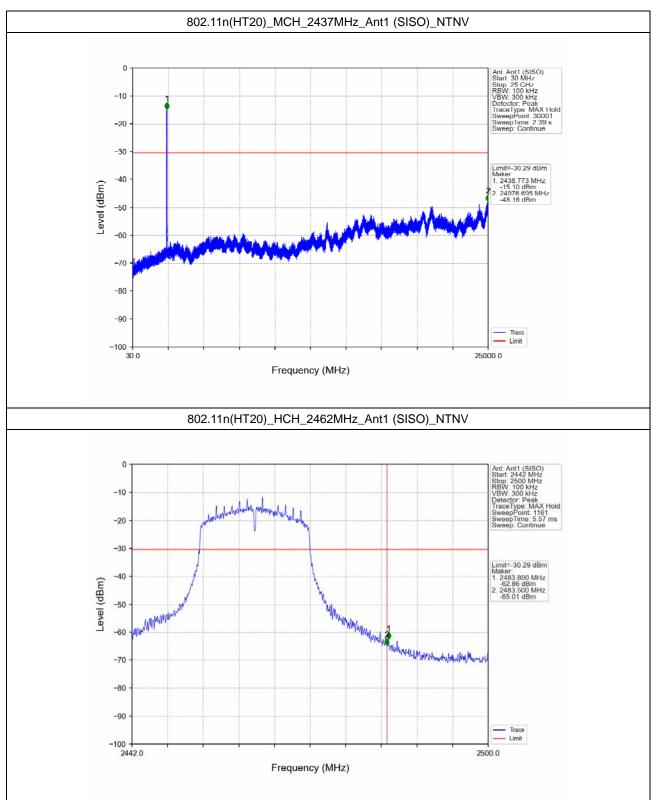
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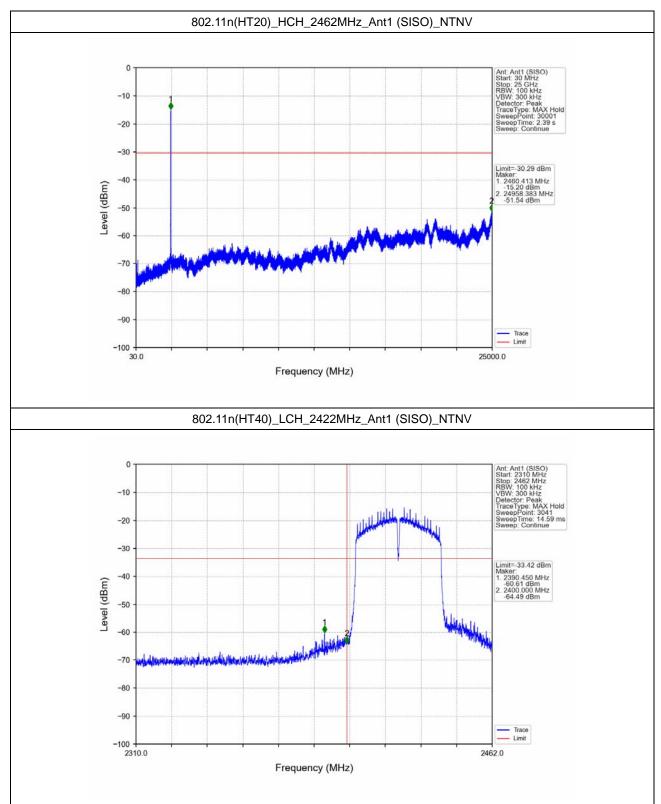
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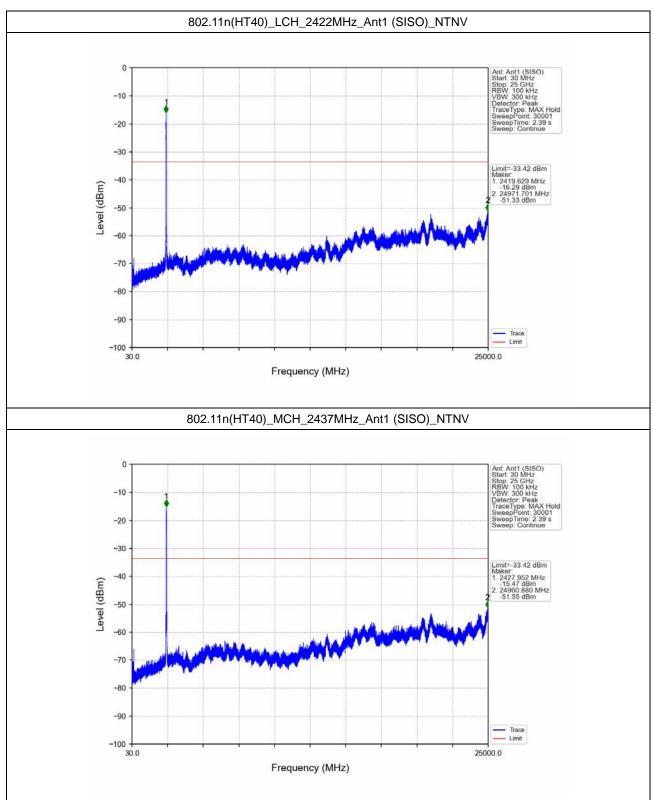
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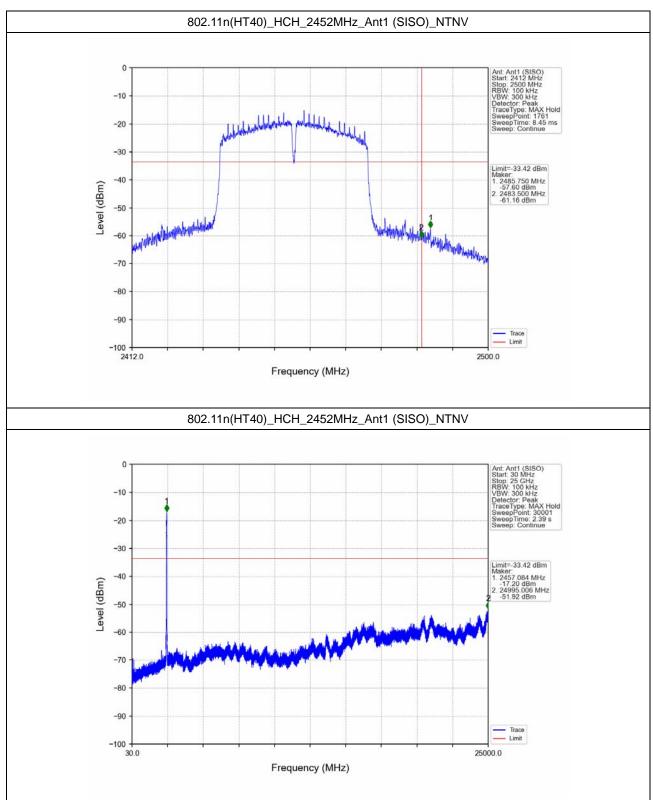
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10.5 Restricted band Measurement

| EUT | Co-screen Device | | | Мо | del | EH-WD9905 | | |
|--------------|---------------------------------------|-------|-------|--------------|------------|-----------------|--|--|
| Mode | Keeping Transmitting | | | Test Voltage | | DC3.7V | | |
| Temperature | 24 deg. C, | | | Humidity | | 56% RH | | |
| Test Result: | Pass | | | Dete | ector | PK | | |
| | 802.11b mode, Low Channel, Horizontal | | | | | | | |
| 2390 | PK (dBµV/m) | 40.97 | т:. | Limit | | $74(dB\mu V/m)$ | | |
| | AV (dBμV/m) | | Lli | | | 54(dBµV/m) | | |
| | 802.11b mode, Low Channel, Vertical | | | | | | | |
| 2390 | PK (dBµV/m) | 38.87 | Limit | | 74(dBµV/m) | | | |
| | AV (dBμV/m) | | | IIII | 54(dBµV/m) | | | |

10.5 Restricted band Measurement

| EUT | Co-screen Device | | | Model | | EH-WD9905 | |
|--|--------------------------------------|-------|-------|--------------|-----------------|-----------------|--|
| Mode | Keeping Transmitting | | | Test Voltage | | DC3.7V | |
| Temperature | 24 deg. C, | | | Humidity | | 56% RH | |
| Test Result: | Pass | | | Det | ector | PK | |
| 802.11b mode, High Channel, Horizontal | | | | | | | |
| 2483.5 | PK (dBμV/m) | 41.03 | т :: | T | | $74(dB\mu V/m)$ | |
| | AV $(dB\mu V/m)$ | | Limit | | $54(dB\mu V/m)$ | | |
| | 802.11b mode, High Channel, Vertical | | | | | | |
| 2483.5 | PK (dBµV/m) | 38.82 | Limit | | 74(dBµV/m) | | |
| | AV $(dB\mu V/m)$ | | | | $54(dB\mu V/m)$ | | |

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10.5 Restricted band Measurement

| EUT | Co-screen Device | | | Model | | EH-WD9905 | |
|---------------------------------------|----------------------|------------|-------|--------------|------------|-----------------|--|
| Mode | Keeping Transmitting | | | Test Voltage | | DC3.7V | |
| Temperature | | 24 deg. C, | | Humidity | | 56% RH | |
| Test Result: | Pass | | | Det | tector | PK | |
| 802.11g mode, Low Channel, Horizontal | | | | | | | |
| 2390 | PK (dBµV/m) | 44.02 | т. | | | $74(dB\mu V/m)$ | |
| | AV (dBμV/m) | | Limit | | 54(dBμV/m) | | |
| 802.11g mode, Low Channel Vertical | | | | | | | |
| 2390 | PK (dBµV/m) | 42.55 | Limit | | | $74(dB\mu V/m)$ | |
| | AV (dBμV/m) | | Lli | IIII | | 54(dBμV/m) | |

10.5 Restricted band Measurement

| Co-screen Device | | | N | 1odel | EH-WD9905 | | |
|--|-------------------------------------|--|---|--|---|--|--|
| Keeping Transmitting | | | Test | Voltage | DC3.7V | | |
| 24 deg. C, | | | Hu | midity | 56% RH | | |
| Pass | | | De | etector | PK | | |
| 802.11g mode, High Channel, Horizontal | | | | | | | |
| PK (dBμV/m) | 45.81 | т. | | | 74(dBμV/m) | | |
| AV (dBμV/m) | | Limit | | 54(dBµV/m) | | | |
| 802.11g mode, High Channel, Vertical | | | | | | | |
| PK (dBμV/m) | 43.26 | T ' ', | | 74(dBμV/m) | | | |
| AV (dBμV/m) | | Limi | It | | 54(dBμV/m) | | |
| | PK (dBμV/m) AV (dBμV/m) PK (dBμV/m) | $\begin{tabular}{lll} Keeping Transmitting & 24 deg. C, & \\ & Pass & \\ \hline & 802.11g mode, High C \\ \hline PK (dB\mu V/m) & 45.81 & \\ AV (dB\mu V/m) & & \\ \hline & 802.11g mode, High C \\ \hline PK (dB\mu V/m) & 43.26 & \\ \hline \end{tabular}$ | $\begin{tabular}{l lllllllllllllllllllllllllllllllllll$ | $\begin{tabular}{cccccccccccccccccccccccccccccccccccc$ | Keeping Transmitting Test Voltage 24 deg. C, Humidity Pass Detector 802.11g mode, High Channel, Horizontal PK (dBμV/m) Limit 802.11g mode, High Channel, Vertical PK (dBμV/m) 43.26 Limit | | |

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10.5 Restricted band Measurement

| EUT | Co-screen Device | | | Model | | EH-WD9905 | |
|--|---|-------|-------|--------------|-----------------|-----------------|--|
| Mode | Keeping Transmitting | | | Test Voltage | | DC3.7V | |
| Temperature | 24 deg. C, | | | Humidity | | 56% RH | |
| Test Result: | Pass | | | De | tector | PK | |
| 802.11n HT20 mode, Low Channel, Horizontal | | | | | | | |
| 2390 | PK (dBμV/m) | 44.67 | т:. | T | | $74(dB\mu V/m)$ | |
| | AV (dBμV/m) | | Limit | | $54(dB\mu V/m)$ | | |
| | 802.11n HT20 mode, Low Channel Vertical | | | | | | |
| 2390 | PK (dBμV/m) | 42.83 | Limit | | | 74(dBμV/m) | |
| | AV (dBμV/m) | | | IIII | | 54(dBμV/m) | |

Restricted band Measurement 10.5

| EUT | Co-screen Device | | | Model | | EH-WD9905 | | |
|---|---|-------|-------|----------|------------|-----------------|--|--|
| Mode | Keeping Transmitting | | | | Voltage | DC3.7V | | |
| Temperature | 24 deg. C, | | | Humidity | | 56% RH | | |
| Test Result: | Pass | | | De | etector | PK | | |
| 802.11n HT20 mode, High Channel, Horizontal | | | | | | | | |
| 2483.5 | PK (dBµV/m) | 46.90 | т : | | | $74(dB\mu V/m)$ | | |
| | AV (dBμV/m) | | Limit | | 54(dBμV/m) | | | |
| | 802.11n HT20 mode, High Channel, Vertical | | | | | | | |
| 2483.5 | PK (dBμV/m) | 44.17 | Limit | | 74(dBμV/m) | | | |
| | AV (dBμV/m) | | | | | $54(dB\mu V/m)$ | | |

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10.5 Restricted band Measurement

| EUT | Co-screen Device | | | Model | | EH-WD9905 | |
|--|---|-------|-------|--------------|------------|-----------------|--|
| Mode | Keeping Transmitting | | | Test Voltage | | DC3.7V | |
| Temperature | 24 deg. C, | | | Humidity | | 56% RH | |
| Test Result: | Pass | | | De | tector | PK | |
| 802.11n HT40 mode, Low Channel, Horizontal | | | | | | | |
| 2390 | PK (dBμV/m) | 47.31 | Limit | | | $74(dB\mu V/m)$ | |
| | AV (dBμV/m) | | | | 54(dBµV/m) | | |
| | 802.11n HT40 mode, Low Channel Vertical | | | | | | |
| 2390 | PK (dBμV/m) | 44.58 | Limit | | | 74(dBμV/m) | |
| | AV (dBμV/m) | | LII | IIIIt | | $54(dB\mu V/m)$ | |

10.5 Restricted band Measurement

| Co-screen Device | | | M | Iodel | EH-WD9905 | | |
|---|---|----------------------|---|--|---|--|--|
| Keeping Transmitting | | | Test | Voltage | DC3.7V | | |
| 24 deg. C, | | | Hu | midity | 56% RH | | |
| Pass | | | De | etector | PK | | |
| 802.11n HT40 mode, High Channel, Horizontal | | | | | | | |
| PK (dBμV/m) | 50.63 | | | | 74(dBμV/m) | | |
| AV (dBμV/m) | | Limit | | 54(dBµV/m) | | | |
| 802.11n HT40 mode, High Channel, Vertical | | | | | | | |
| PK (dBμV/m) | 47.89 | т | ., | | 74(dBμV/m) | | |
| AV (dBμV/m) | | Limi | It | | 54(dBμV/m) | | |
| | 802 PK (dBμV/m) AV (dBμV/m) 802 PK (dBμV/m) | Keeping Transmitting | $\begin{tabular}{l lllllllllllllllllllllllllllllllllll$ | Keeping TransmittingTest24 deg. C,HuPassDe802.11n HT40 mode, High Channel, HorizonPK (dBμV/m)50.63Limit802.11n HT40 mode, High Channel, VerticalPK (dBμV/m)47.89 | Keeping TransmittingTest Voltage24 deg. C,HumidityPassDetector802.11n HT40 mode, High Channel, HorizontalPK (dBμV/m)50.63LimitAV (dBμV/m)Limit802.11n HT40 mode, High Channel, VerticalPK (dBμV/m)47.89 | | |

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11.0 Antenna Requirement

11.1 Standard Applicable

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

And according to FCC 47 CFR Section 15.247 (b), if transmitter antennas of directional gain greater than 6 dBi are used, the power shall be reduced by the mount in dB that the directional gain of the antenna exceeds 6 dBi.

11.2 Antenna Connected construction

Integral antenna with gain 3.04dBi Max (Get from the antenna specification)

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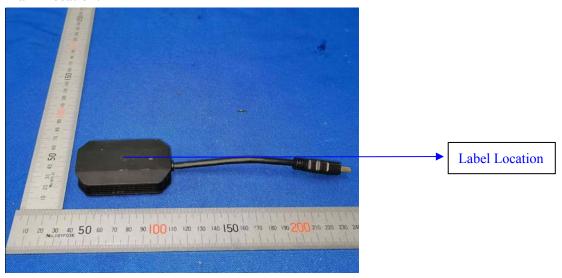
12.0 FCC ID Label

FCC ID: 2AHRD-EHWD9905

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation

The label must not be a stick-on paper label. The label on these products must be permanently affixed to the product and readily visible at the time of purchase and must last the expected lifetime of the equipment not be readily detachable.

Mark Location:



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13.0 Photo of testing

Conducted Emission Test Setup:



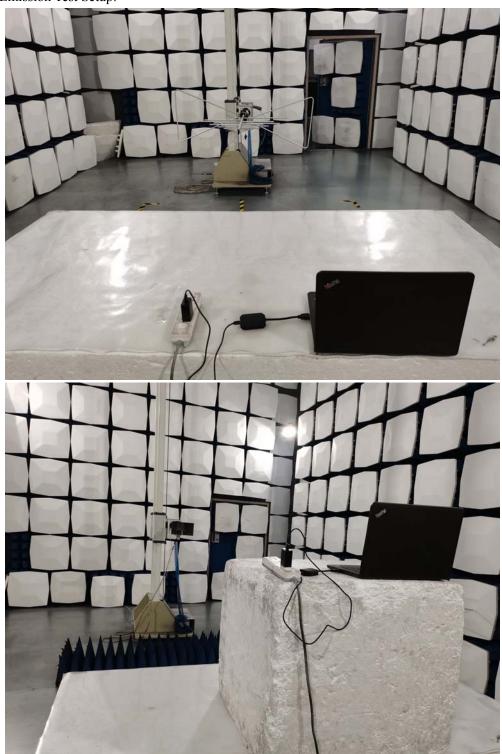
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Radiated Emission Test Setup:



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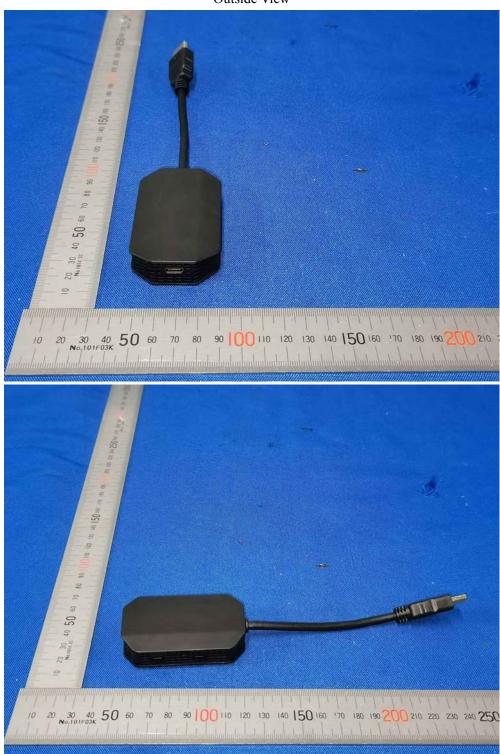
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Outside View



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Outside View



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Inside view



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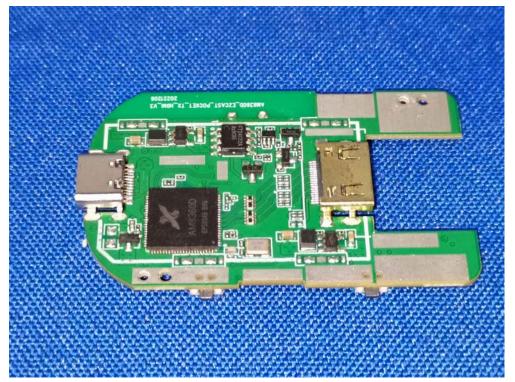
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Inside view



-End of the report-