# FCC Part 15C Test Report

# FCC ID: 2AGDZRLC-410WS

| | |
|---|---|
| Product Name: | WiFi IP Camera |
| Trademark: | reolink |
| Model Name : | RLC-410WS, RLC-411WS |
| Prepared For :<br>Address : | **Reolink Digital Technology Co., Ltd.**<br>A218, ShiWaiTaoYuan ChuanyiYuan , 1st of PingShan Road , Xili , NanShan , Shenzhen,China |
| Prepared By :<br>Address : | **Shenzhen BCTC Technology Co., Ltd.**<br>No.101,Yousong Road,Longhua New District, Shenzhen,China |
| Test Date: | Dec. 16 - Dec. 29, 2015 |
| Date of Report : | Dec. 30, 2015 |
| Report No.: | BCTC-151216585 |

# VERIFICATION OF COMPLIANCE

| | |
|---|---|
| **Applicant's name** ..... | **Reolink Digital Technology Co., Ltd.** |
| Address..... | A218, ShiWaiTaoYuan ChuanyiYuan , 1st of PingShan Road , Xili , NanShan , Shenzhen,China |
| **Manufacture's Name** ... | **Reolink Digital Technology Co., Ltd.** |
| Address..... | A218, ShiWaiTaoYuan ChuanyiYuan , 1st of PingShan Road , Xili , NanShan , Shenzhen,China |

**Product description**

| | |
|---|---|
| Product name ..... | WiFi IP Camera |
| Trademark..... | reolink |
| Model Name: | RLC-410WS, RLC-411WS |
| Test procedure | FCC Part15.407 |
| Standards | ANSI C63.10-2013<br>KDB789033 D02 General UNII Test Procedures New Rules v01 |

This device described above has been tested by BCTC, and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.

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Test Result **Pass**

Testing Engineer : Eric Yang

(Eric Yang)

Technical Manager : Sophie Lee

(Sophia Lee)

Authorized Signatory : Carson. Zhang

(Carson. Zhang)

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# 1.TEST SUMMARY

| Test Items | Test Requirement | Result |
|---|---|---|
| Conducted Emissions | 15.207 | PASS |
| Radiated Emissions | 15.407(b), 15.209 | PASS |
| 26dB bandwidth and 99%dB Bandwidth | 15.403(i)<br>15.407(e) | PASS |
| Power density | 15.407 (a) | PASS |
| Maximum Peak Output Power | 15.407 (a) | PASS |
| Emissions from out of band | 15.407 (b) | PASS |
| Transmission in case of Absence of Information | 15.407(c) | PASS |
| Frequency Stability | 15.407(g) | PASS |
| Antenna Requirement | 15.203 | PASS |

# 2.GENERAL PRODUCT INFORMATION

## 2.1. Product Function

Refer to Technical Construction Form and User Manual.

## 2.2. Description of Device (EUT)

| | |
|---|---|
| Product Name: | WiFi IP Camera |
| Trade Name: | reolink |
| Model No.: | RLC-410WS, RLC-411WS |
| Model Difference | The product is different for RLC-410WS has B2 cylindrical shell(L*W=9.0*6.5mm), RLC-411WS has B7 cylindrical shell(L*W=16.5*8.1mm).<br>RLC-410WS has 4mm lens, RLC-411WS has HD electric zoom lens. |
| Operation Frequency: | 5745-5805MHz |
| Channel numbers: | See channel list |
| Modulation technology: | 64QAM, 16QAM, QPSK, BPSK for OFDM |
| Data speed (IEEE 802.11a): | 6Mbps, 9Mbps, 12Mbps, 18Mbps, 24Mbps,<br>36Mbps, 48Mbps,54Mbps |
| Data speed (IEEE 802.11n): | Up to 150Mbps |
| Antenna Type: | External antenna |
| Antenna gain: | 3.0dBi |
| Power supply: | DC 12V from adapter |
| Adapter: | Model:CS-1201000<br>I/P:AC 100-240V 50/60Hz<br>O/P:DC 12V/1A |

| Channel List for 802.11a/n(20) | | | |
|---|---|---|---|
| Channel | Frequency (MHz) | Channel | Frequency (MHz) |
| 149 | 5745 | 161 | 5805 |
| 153 | 5765 | | |
| 157 | 5785 | | |

## 2.3. Test Supporting System

None.

## 2.4. Independent Operation Modes

The basic operation modes are:

These is Digital Transmission system (DTS) and have modulation OFDM, DSSS, DBPSK, DQPSK, CCK, 16QAM, 64QAM. According exploratory test, EUT will have maximum output power in those data rate (802.11a/n: MCS0), so those data rate were used for all test. The equipment enables high-speed access without wires to network assets. This adapter uses the IEEE 802.11 protocol to enable wireless communications between the host and Wireless rooter.

802.11a/n(20)

| Frequency | Band 4 |
|---|---|
| Low | 5745MHz |
| Middle | 5785MHz |
| High | 5805MHz |

Note: for conducted emission test, we pretest all mode,the worst mode was 802.11a channel 149.
for radiated emissions test, we pretest all mode,the worst mode was 802.11a/n20
The worst mode's data was recording and show in the test report.

## 2.5. Test Sites

### 2.5.1. Test Facilities

Lab Qualifications : FCC Registration No.:187086

## 2.6. List of Test and Measurement Instruments

Conduction test equipment

| Item | Kind of Equipment | Manufacturer | Type No. | Serial No. | Last calibration | Calibrated until | Calibration period |
|---|---|---|---|---|---|---|---|
| 1 | Test Receiver | R&S | ESCI | 1166.5950K03-101165-ha | 2015.07.06 | 2016.07.05 | 1 year |
| 2 | LISN | R&S | NSLK8126 | 8126466 | 2015.08.24 | 2016.08.23 | 1 year |
| 3 | LISN | R&S | NSLK8126 | 8126487 | 2015.08.24 | 2016.08.23 | 1 year |
| 4 | 50Ω Coaxial Switch | Anritsu | MP59B | 6200264417 | 2015.07.06 | 2016.07.05 | 1 year |
| 5 | RF cables | R&S | R204 | R20X | 2015.07.06 | 2016.07.05 | 1 year |

Radiation test, Band-edge test and 6db bandwith test equipment

| Item | Kind of equipment | Manufacturer | Type No. | Serial No. | Last calibration | Calibrated until | Calibration period |
|---|---|---|---|---|---|---|---|
| 1 | Spectrum Analyzer | Agilent | E4407B | MY45108040 | 2015.07.06 | 2016.07.05 | 1 year |
| 2 | Test Receiver | R&S | ESPI | 101318 | 2015.07.06 | 2016.07.05 | 1 year |
| 3 | Bilog Antenna | R&S | VULB 9168 | VULB9168-438 | 2015.07.06 | 2016.07.05 | 1 year |
| 4 | 50Ω Coaxial Switch | Anritsu | MP59B | 6200264416 | 2015.07.06 | 2016.07.05 | 1 year |
| 5 | Spectrum Analyzer | ADVANTEST | R3132 | 150900201 | 2015.07.06 | 2016.07.05 | 1 year |
| 6 | Horn Antenna | R&S | HF906 | 10027 | 2015.07.06 | 2016.07.05 | 1 year |
| 7 | Horn Ant | Schwarzbeck | BBHA 9170 | 9170-181 | 2015.07.06 | 2016.07.05 | 1 year |
| 8 | Amplifier | R&S | BBV9743 | 9743-019 | 2015.12.22 | 2016.12.21 | 1 year |
| 9 | Loop Antenna | ARA | PLA-1030/B | 1029 | 2015.07.06 | 2016.07.05 | 1 year |
| 10 | RF cables | R&S | R203 | R20X | 2015.07.06 | 2016.07.05 | 1 year |
| 11 | Antenna connector | Florida RFLabs | Lab-Fle | RF 01# | 2015.07.06 | 2016.07.05 | 1 year |
| 12 | Power Metter | ANRITSU | ML2487A | 6K00001568 | 2015.07.06 | 2016.07.05 | 1 year |
| 13 | Power Sensor (AV) | ANRITSU | ML2491A | 030989 | 2015.07.06 | 2016.07.05 | 1 year |
| 14 | Signal Analyzer | Agilent | N9010A | MY48030494 | 2015.07.06 | 2016.07.05 | 1 year |

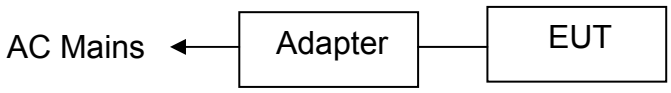
# 3. TEST SET-UP AND OPERATION MODES

## 3.1. Principle of Configuration Selection

**Emission:** The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the Operating Instructions.

## 3.2. Block Diagram of Test Set-up

System Diagram of Connections between EUT and Simulators




*(EUT: WiFi IP Camera )*

## 3.3. Test Operation Mode and Test Software

None.

## 3.4. Special Accessories and Auxiliary Equipment

## 3.5. Countermeasures to Achieve EMC Compliance

None.

# 4. EMISSION TEST RESULTS

## 4.1. Conducted Emission Measurement

POWER LINE CONDUCTED EMISSION Limits (Frequency Range 150KHz-30MHz)

| FREQUENCY (MHz) | Class B (dBuV) | | Standard |
|---|---|---|---|
| | Quasi -peak | Average | |
| 0.15 -0.5 | 66 - 56 * | 56 - 46 * | FCC |
| 0.50 -5.0 | 56.00 | 46.00 | FCC |
| 5.0 -30.0 | 60.00 | 50.00 | FCC |

Note:

(1) The tighter limit applies at the band edges.

(2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

The following table is the setting of the receiver

| **Receiver** Parameters | Setting |
|---|---|
| Attenuation | 10 dB |
| Start Frequency | 0.15 MHz |
| Stop Frequency | 30 MHz |
| IF Bandwidth | 9 kHz |

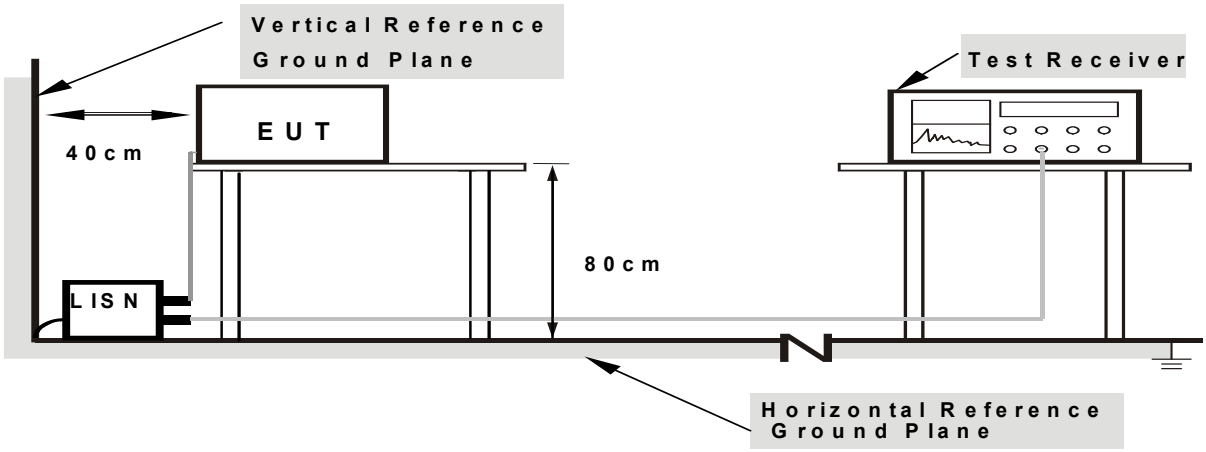
### 4.1.1. TEST PROCEDURE

a. The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
d. LISN at least 80 cm from nearest part of EUT chassis.
e. For the actual test configuration, please refer to the related Item –EUT Test Photos.

### 4.1.2. DEVIATION FROM TEST STANDARD

No deviation

### 4.1.3. TEST SETUP




Note: 1.Support units were connected to second LISN.
2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

### 4.1.4. EUT OPERATING CONDITIONS

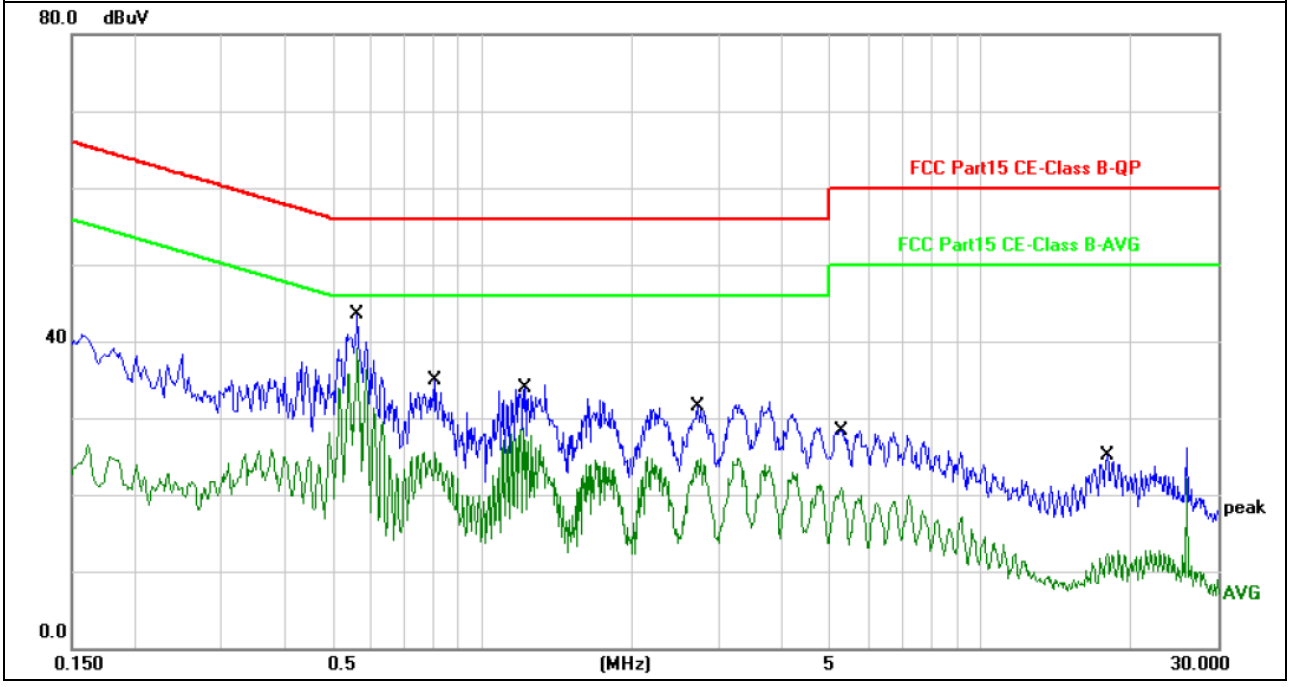
The EUT was configured for testing in a typical fashion (as a customer would normally use it).
The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.
We pretest all adapter's emission, only the adapter 1's data was worst and the data was recording in the report.
The data only show the worst mode.
If peak level comply with Quasi-Peak limit, then the Quasi-Peak level is deemed to comply with Quasi-Peak limit.
We pretest AC 120V and AC 240V, the worst voltage was AC 120V and the data recording in the report.

## 4.1.5. TEST RESULTS

| EUT: | WiFi IP Camera | Model Name : | RLC-410WS |
|---|---|---|---|
| Temperature: | 26 ℃ | Relative Humidity: | 54% |
| Pressure: | 1010hPa | Phase : | L |
| Test Voltage : | AC 120V/60Hz | Test Mode: | Link Mode |

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV | dBuV | dB | Detector | Comment |
| 1 | | 0.5620 | 33.45 | 10.12 | 43.57 | 56.00 | -12.43 | QP | |
| 2 | * | 0.5620 | 29.05 | 10.12 | 39.17 | 46.00 | -6.83 | AVG | |
| 3 | | 0.8059 | 24.80 | 10.15 | 34.95 | 56.00 | -21.05 | QP | |
| 4 | | 0.8059 | 15.36 | 10.15 | 25.51 | 46.00 | -20.49 | AVG | |
| 5 | | 1.2140 | 24.17 | 10.17 | 34.34 | 56.00 | -21.66 | QP | |
| 6 | | 1.2140 | 18.47 | 10.17 | 28.64 | 46.00 | -17.36 | AVG | |
| 7 | | 2.7139 | 21.27 | 10.19 | 31.46 | 56.00 | -24.54 | QP | |
| 8 | | 2.7139 | 14.54 | 10.19 | 24.73 | 46.00 | -21.27 | AVG | |
| 9 | | 5.2499 | 18.19 | 10.13 | 28.32 | 60.00 | -31.68 | QP | |
| 10 | | 5.2499 | 10.77 | 10.13 | 20.90 | 50.00 | -29.10 | AVG | |
| 11 | | 17.9859 | 15.02 | 10.16 | 25.18 | 60.00 | -34.82 | QP | |
| 12 | | 17.9859 | 2.58 | 10.16 | 12.74 | 50.00 | -37.26 | AVG | |

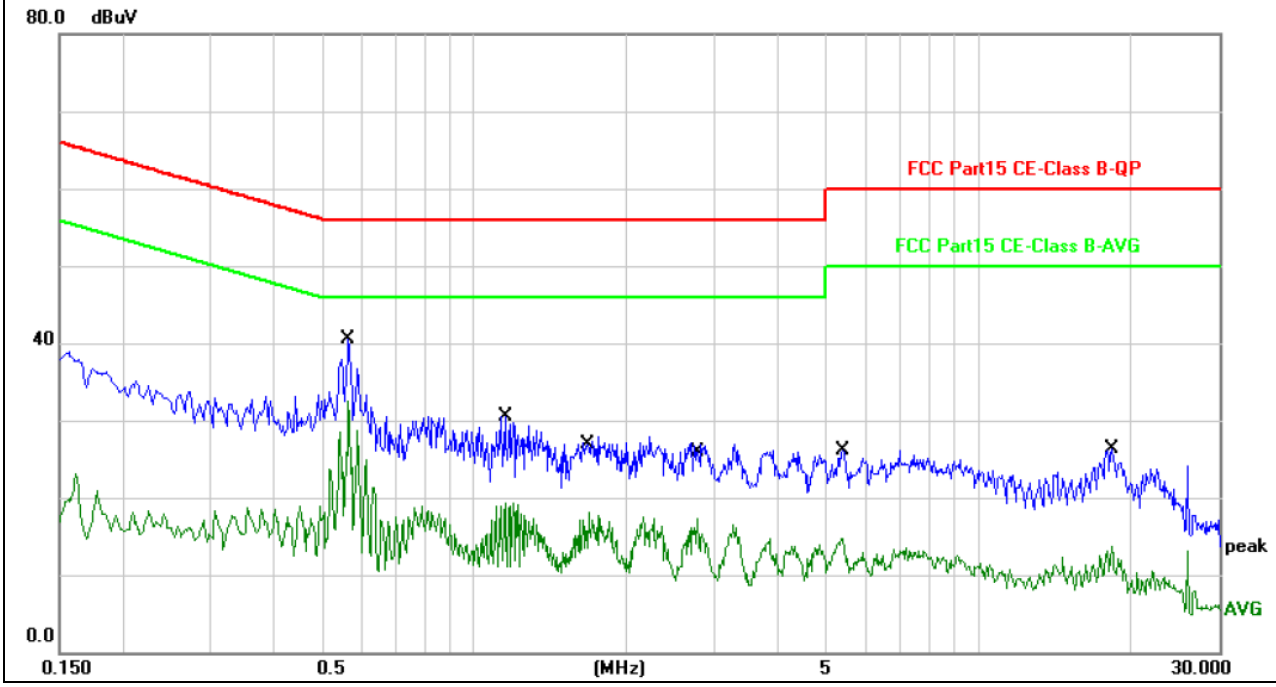
Remark:
1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.



| EUT: | WiFi IP Camera | Model Name : | RLC-410WS |
|---|---|---|---|
| Temperature: | 26 ℃ | Relative Humidity: | 54% |
| Pressure: | 1010hPa | Phase : | N |
| Test Voltage : | AC 120V/60Hz | Test Mode: | Link Mode |

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV | dBuV | dB | Detector | Comment |
| 1 | | 0.5620 | 30.46 | 10.12 | 40.58 | 56.00 | -15.42 | QP | |
| 2 | * | 0.5620 | 22.40 | 10.12 | 32.52 | 46.00 | -13.48 | AVG | |
| 3 | | 1.1500 | 20.34 | 10.17 | 30.51 | 56.00 | -25.49 | QP | |
| 4 | | 1.1500 | 9.17 | 10.17 | 19.34 | 46.00 | -26.66 | AVG | |
| 5 | | 1.6860 | 17.66 | 10.18 | 27.84 | 56.00 | -28.16 | QP | |
| 6 | | 1.6860 | 7.89 | 10.18 | 18.07 | 46.00 | -27.93 | AVG | |
| 7 | | 2.7700 | 16.79 | 10.19 | 26.98 | 56.00 | -29.02 | QP | |
| 8 | | 2.7700 | 7.11 | 10.19 | 17.30 | 46.00 | -28.70 | AVG | |
| 9 | | 5.3778 | 16.06 | 10.13 | 26.19 | 60.00 | -33.81 | QP | |
| 10 | | 5.3778 | 4.60 | 10.13 | 14.73 | 50.00 | -35.27 | AVG | |
| 11 | | 18.3699 | 16.21 | 10.16 | 26.37 | 60.00 | -33.63 | QP | |
| 12 | | 18.3699 | 3.45 | 10.16 | 13.61 | 50.00 | -36.39 | AVG | |

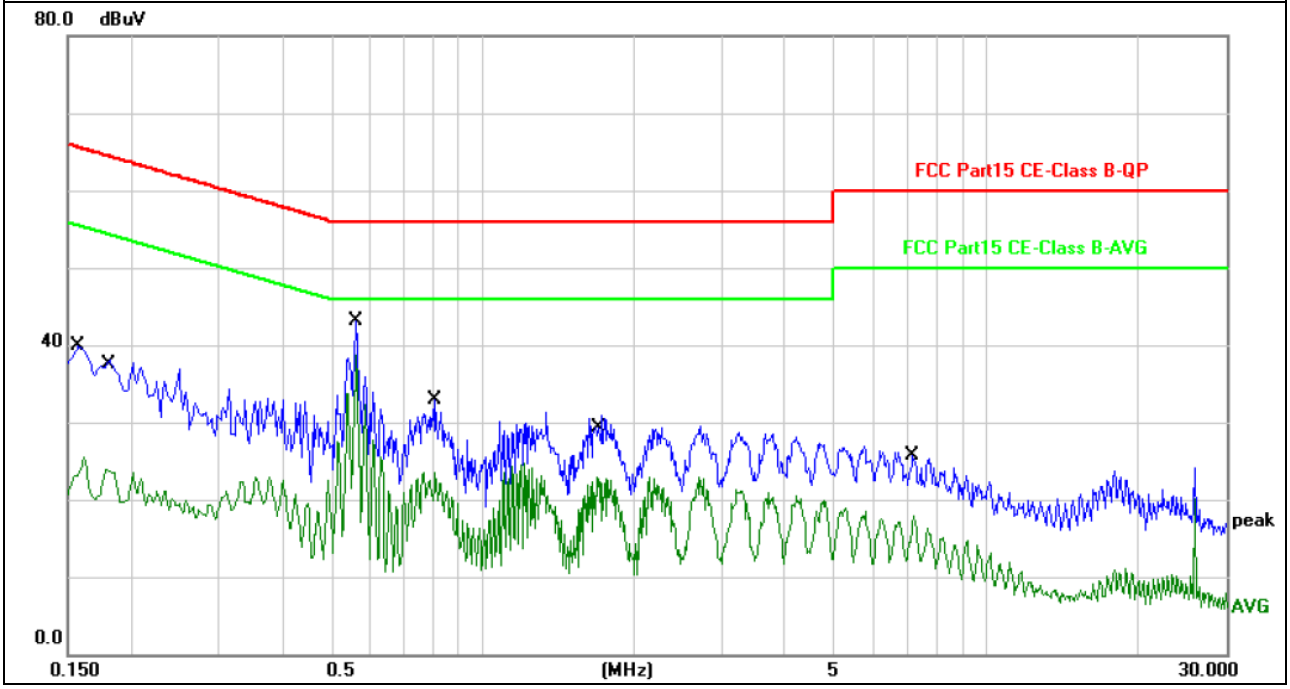
Remark:
1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.



| EUT: | WiFi IP Camera | Model Name : | RLC-411WS |
|---|---|---|---|
| Temperature: | 26 ℃ | Relative Humidity: | 54% |
| Pressure: | 1010hPa | Phase : | L |
| Test Voltage : | AC 120V/60Hz | Test Mode: | Link Mode |

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV | dBuV | dB | Detector | Comment |
| 1 | | 0.1580 | 29.81 | 10.05 | 39.86 | 65.56 | -25.70 | QP | |
| 2 | | 0.1580 | 15.43 | 10.05 | 25.48 | 55.56 | -30.08 | AVG | |
| 3 | | 0.1780 | 27.54 | 10.06 | 37.60 | 64.57 | -26.97 | QP | |
| 4 | | 0.1780 | 13.87 | 10.06 | 23.93 | 54.57 | -30.64 | AVG | |
| 5 | | 0.5620 | 32.95 | 10.12 | 43.07 | 56.00 | -12.93 | QP | |
| 6 | * | 0.5620 | 28.55 | 10.12 | 38.67 | 46.00 | -7.33 | AVG | |
| 7 | | 0.8059 | 21.21 | 10.15 | 31.36 | 56.00 | -24.64 | QP | |
| 8 | | 0.8059 | 13.36 | 10.15 | 23.51 | 46.00 | -22.49 | AVG | |
| 9 | | 1.6860 | 20.62 | 10.18 | 30.80 | 56.00 | -25.20 | QP | |
| 10 | | 1.6860 | 12.82 | 10.18 | 23.00 | 46.00 | -23.00 | AVG | |
| 11 | | 7.1380 | 15.53 | 10.10 | 25.63 | 60.00 | -34.37 | QP | |
| 12 | | 7.1380 | 7.88 | 10.10 | 17.98 | 50.00 | -32.02 | AVG | |

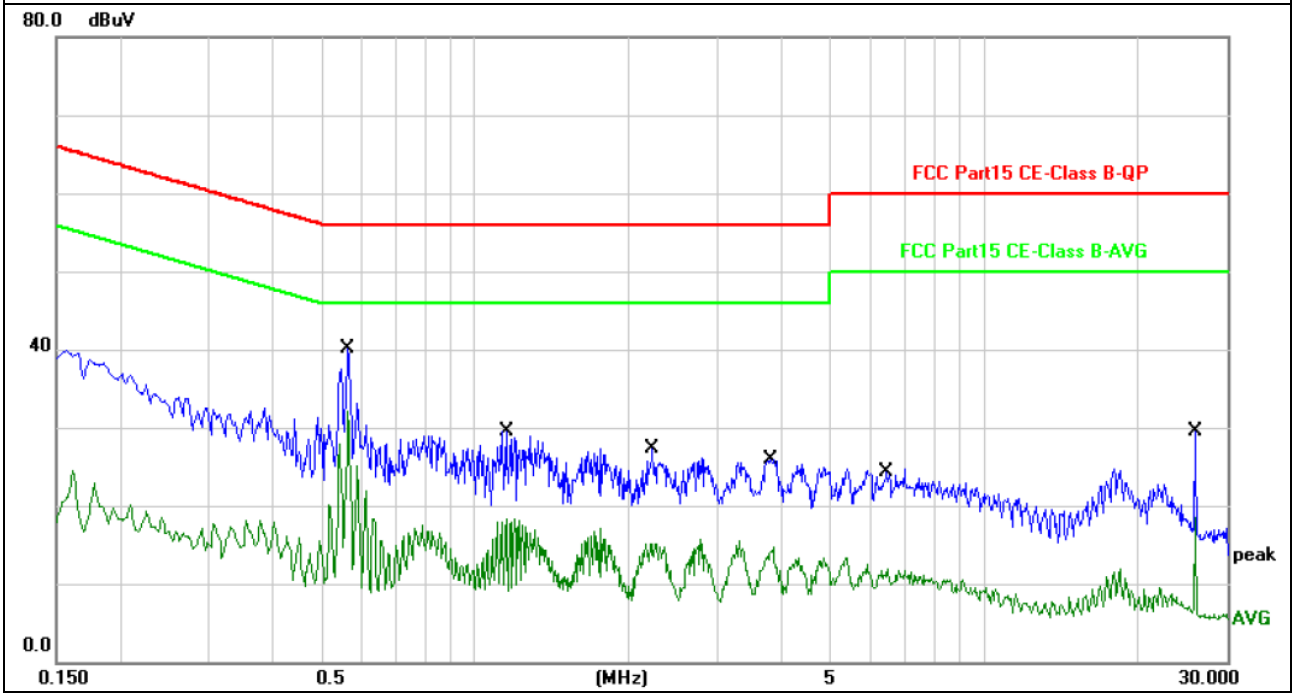
Remark:
1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.



| EUT: | WiFi IP Camera | Model Name : | RLC-411WS |
|---|---|---|---|
| Temperature: | 26 ℃ | Relative Humidity: | 54% |
| Pressure: | 1010hPa | Phase : | N |
| Test Voltage : | AC 120V/60Hz | Test Mode: | Link Mode |

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV | dBuV | dB | Detector | Comment |
| 1 | | 0.5620 | 29.96 | 10.12 | 40.08 | 56.00 | -15.92 | QP | |
| 2 | * | 0.5620 | 21.90 | 10.12 | 32.02 | 46.00 | -13.98 | AVG | |
| 3 | | 1.1500 | 19.34 | 10.17 | 29.51 | 56.00 | -26.49 | QP | |
| 4 | | 1.1500 | 8.17 | 10.17 | 18.34 | 46.00 | -27.66 | AVG | |
| 5 | | 2.2300 | 17.14 | 10.18 | 27.32 | 56.00 | -28.68 | QP | |
| 6 | | 2.2300 | 5.01 | 10.18 | 15.19 | 46.00 | -30.81 | AVG | |
| 7 | | 3.8060 | 15.76 | 10.17 | 25.93 | 56.00 | -30.07 | QP | |
| 8 | | 3.8060 | 4.45 | 10.17 | 14.62 | 46.00 | -31.38 | AVG | |
| 9 | | 6.4860 | 13.03 | 10.09 | 23.12 | 60.00 | -36.88 | QP | |
| 10 | | 6.4860 | 1.82 | 10.09 | 11.91 | 50.00 | -38.09 | AVG | |
| 11 | | 25.9980 | 19.33 | 10.20 | 29.53 | 60.00 | -30.47 | QP | |
| 12 | | 25.9980 | 8.36 | 10.20 | 18.56 | 50.00 | -31.44 | AVG | |

Remark:
1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.



### 4.2. Radiated Emission Measurement

4.2.1. Radiated Emission Limits (Frequency Range 9kHz-1000MHz)

20dBc in any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

| Frequencies (MHz) | Field Strength (micorvolts/meter) | Measurement Distance (meters) |
|---|---|---|
| 0.009~0.490 | 2400/F(KHz) | 300 |
| 0.490~1.705 | 24000/F(KHz) | 30 |
| 1.705~30.0 | 30 | 30 |
| 30~88 | 100 | 3 |
| 88~216 | 150 | 3 |
| 216~960 | 200 | 3 |
| Above 960 | 500 | 3 |

LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

| FREQUENCY (MHz) | Class B (dBuV/m) (at 3M) | |
|---|---|---|
| | PEAK | AVERAGE |
| Above 1000 | 74 | 54 |

Notes:

(1) The limit for radiated test was performed according to FCC PART 15C.

(2) The tighter limit applies at the band edges.

(3) Emission level (dBuV/m)=20log Emission level (uV/m).

FREQUENCY RANGE OF RADIATED MEASUREMENT (For unintentional radiators)

| Highest frequency generated or Upper frequency of measurement used in the device or on which the device operates or tunes (MHz) | Range (MHz) |
|---|---|
| Below 1.705 | 30 |
| 1.705 – 108 | 1000 |
| 108 – 500 | 2000 |
| 500 – 1000 | 5000 |
| Above 1000 | 5th harmonic of the highest frequency or 40 GHz, whichever is lower |

| Spectrum Parameter | Setting |
|---|---|
| Attenuation | Auto |
| Start Frequency | 1000 MHz |
| Stop Frequency | 10th carrier harmonic |
| RB / VB (emission in restricted band) | 1 MHz / 1 MHz for Peak, 1 MHz / 10Hz for Average |

| Receiver Parameter | Setting |
|---|---|
| Attenuation | Auto |
| Start ~ Stop Frequency | 9kHz~150kHz / RB 200Hz for QP |
| Start ~ Stop Frequency | 150kHz~30MHz / RB 9kHz for QP |
| Start ~ Stop Frequency | 30MHz~1000MHz / RB 120kHz for QP |

### 4.2.2. TEST PROCEDURE

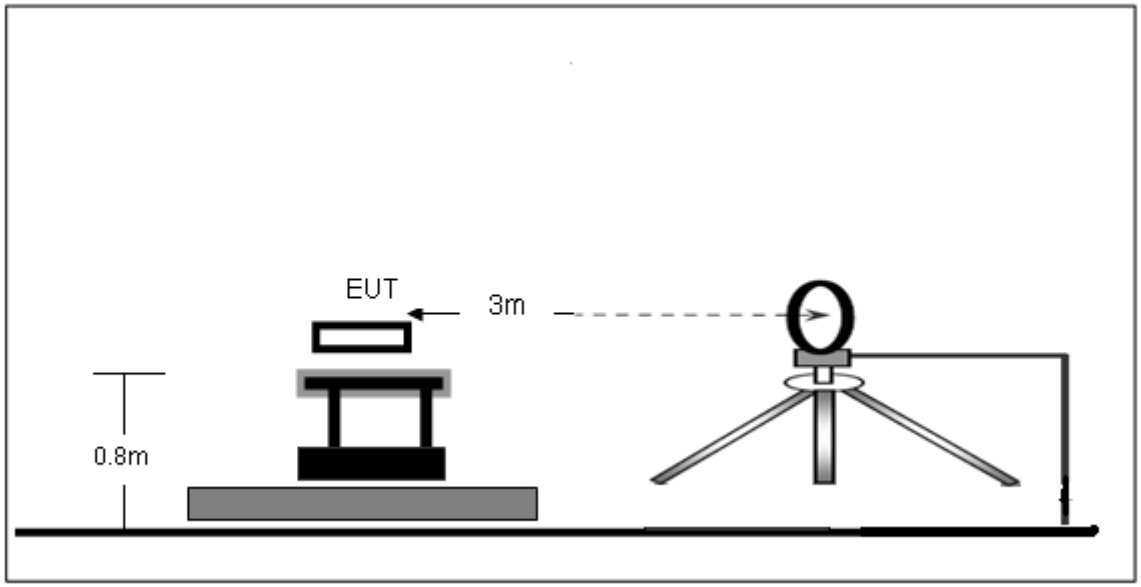
a. The measuring distance of at 3 m shall be used for measurements at frequency up to 25GHz. For frequencies above 1GHz, any suitable measuring distance may be used.
b. The EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.
c. The height of the equipment or of the substitution antenna shall be 1.5 m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
d. The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
e. If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
f. For the actual test configuration, please refer to the related Item –EUT Test Photos.
g. For the radiated emission test above 1GHz:
Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response.
The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.
Note:
Both horizontal and vertical antenna polarities were tested
and performed pretest to three orthogonal axis. The worst case emissions were reported
We pretest AC 120V and AC 240V, the worst voltage was AC 120V and the data recording in the report.

### 4.2.3. DEVIATION FROM TEST STANDARD

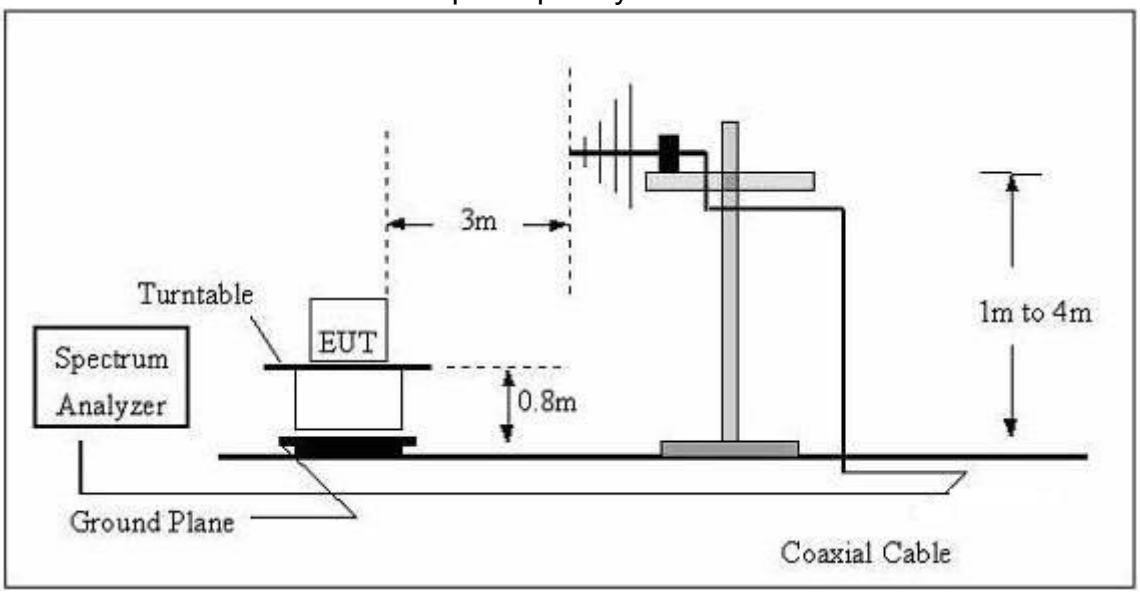
No deviation

### 4.2.4. TEST SETUP

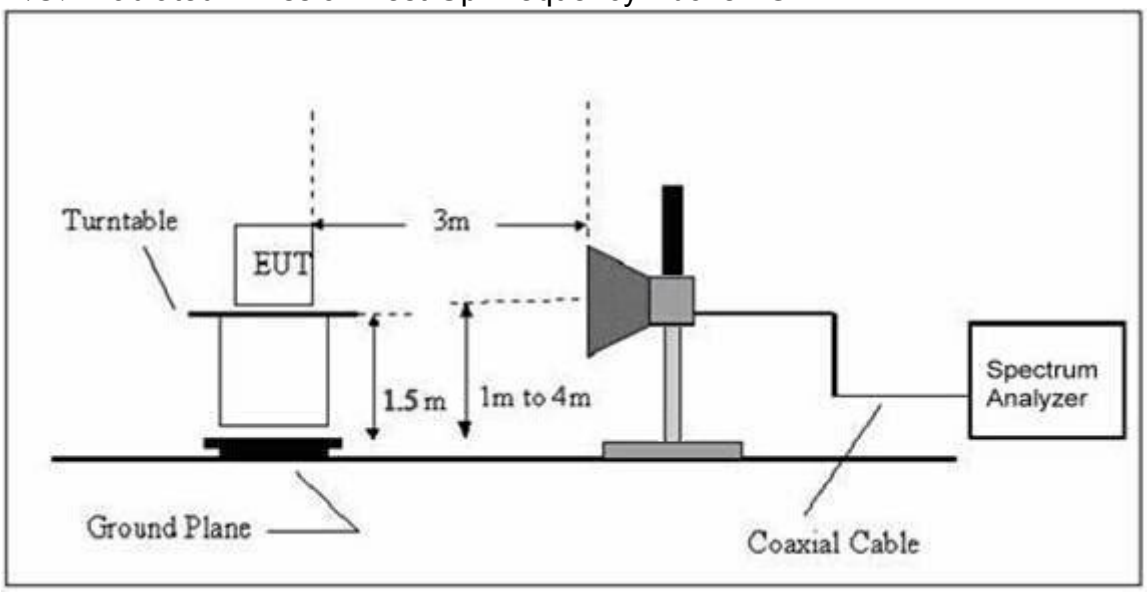
（A）Radiated Emission Test-Up Frequency Below 30MHz




（B）Radiated Emission Test-Up Frequency 30MHz~1GHz



（C）Radiated Emission Test-Up Frequency Above 1GHz




### 4.2.5. EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

We pretest all adapter's emission, only the adapter 1's data was worst and the data was recording in the report.

The data only show the worst mode.

Radiated Spurious Emission (Below 30MHz )

| | | | |
|---|---|---|---|
| EUT： | WiFi IP Camera | Model Name ： | RLC-410WS |
| Temperature： | 20 ℃ | Relative Humidity： | 48% |
| Pressure： | 1010 hPa | Polarization : | --- |
| Test Voltage ： | DC 12V from adapter | | |
| Test Mode ： | TX | | |

| Freq. | Reading | Limit | Margin | State |
|---|---|---|---|---|
| (MHz) | (dBuV/m) | (dBuV/m) | (dB) | P/F |
| -- | -- | -- | -- | PASS |
| -- | -- | -- | -- | PASS |

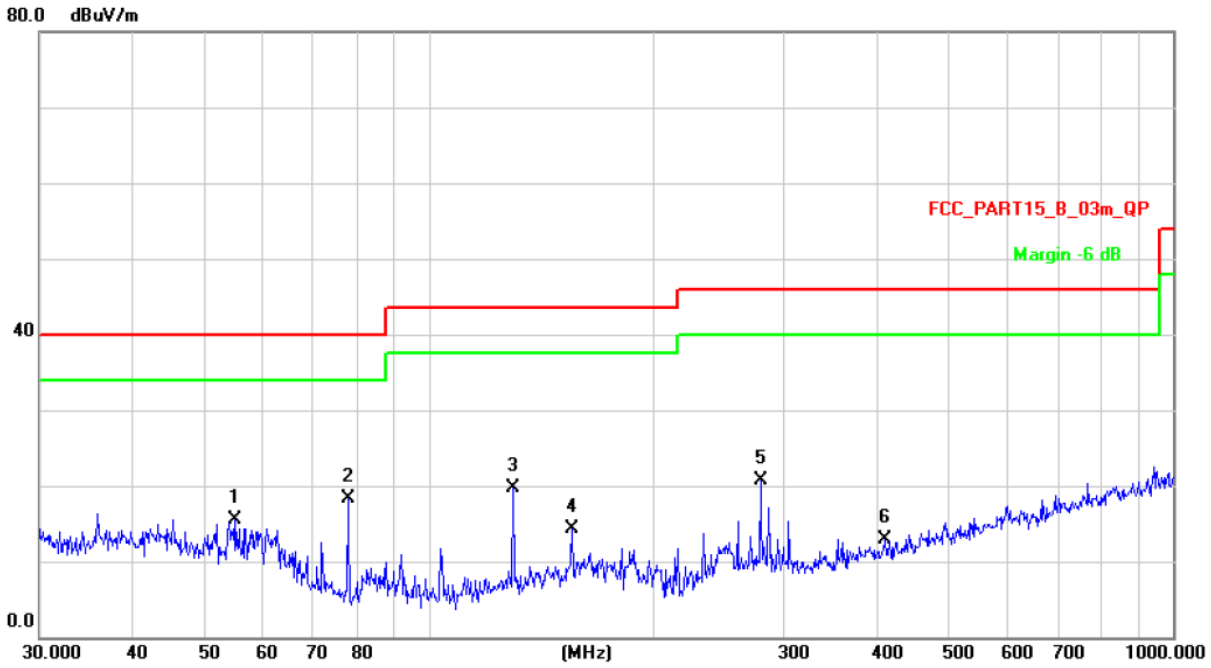
Note:
The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.
Distance extrapolation factor =40 log (specific distance/test distance)(dB);
Limit line = specific limits(dBuv) + distance extrapolation factor.

Radiated Spurious Emission (Between 30MHz – 1GHz)

| | | | |
|---|---|---|---|
| EUT： | WiFi IP Camera | Model Name ： | RLC-410WS |
| Temperature： | 26 ℃ | Relative Humidity： | 54% |
| Pressure： | 1010 hPa | Polarization： | Horizontal |
| Test Voltage ： | DC 12V from adapter | | |
| Test Mode ： (Worst) | Link Mode | | |

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | Antenna Height | Table Degree | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB/m | dBuV/m | dBuV/m | dB | Detector | cm | degree | Comment |
| 1 | | 55.0274 | 26.66 | -11.13 | 15.53 | 40.00 | -24.47 | QP | | | |
| 2 | * | 77.8654 | 35.61 | -17.33 | 18.28 | 40.00 | -21.72 | QP | | | |
| 3 | | 129.9226 | 33.81 | -14.11 | 19.70 | 43.50 | -23.80 | QP | | | |
| 4 | | 155.9101 | 27.16 | -12.87 | 14.29 | 43.50 | -29.21 | QP | | | |
| 5 | | 279.0436 | 33.85 | -13.13 | 20.72 | 46.00 | -25.28 | QP | | | |
| 6 | | 410.3825 | 22.84 | -9.96 | 12.88 | 46.00 | -33.12 | QP | | | |

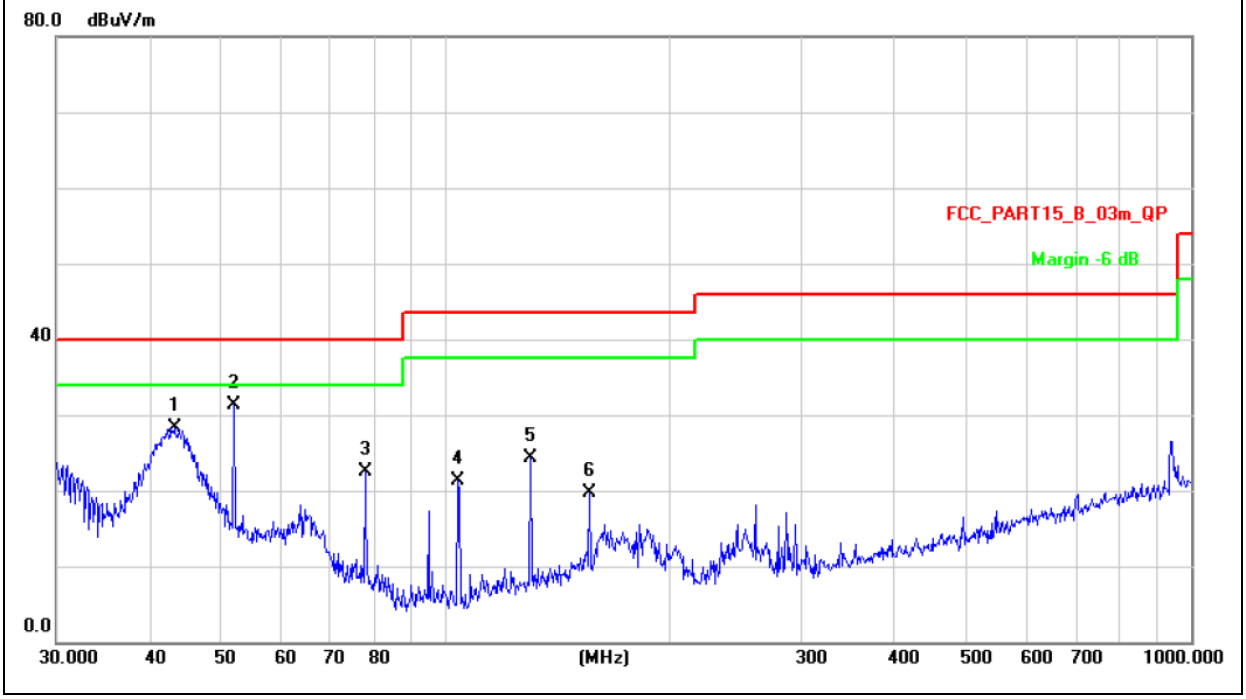
Remark:
Factor = Antenna Factor + Cable Loss – Pre-amplifier.
All interfaces was connected, and BT TX mode was link.



| | | | |
|---|---|---|---|
| EUT： | WiFi IP Camera | Model Name ： | RLC-410WS |
| Temperature： | 26 ℃ | Relative Humidity： | 54% |
| Pressure： | 1010 hPa | Polarization： | Vertical |
| Test Voltage ： | DC 12V from adapter | | |
| Test Mode ： (Worst) | Link Mode | | |

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | Antenna Height | Table Degree | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB/m | dBuV/m | dBuV/m | dB | Detector | cm | degree | Comment |
| 1 | | 43.2017 | 37.60 | -9.25 | 28.35 | 40.00 | -11.65 | QP | | | |
| 2 | * | 52.0251 | 42.02 | -10.63 | 31.39 | 40.00 | -8.61 | QP | | | |
| 3 | | 77.8654 | 39.81 | -17.33 | 22.48 | 40.00 | -17.52 | QP | | | |
| 4 | | 103.8055 | 37.39 | -16.16 | 21.23 | 43.50 | -22.27 | QP | | | |
| 5 | | 129.9226 | 38.42 | -14.11 | 24.31 | 43.50 | -19.19 | QP | | | |
| 6 | | 155.9101 | 32.61 | -12.87 | 19.74 | 43.50 | -23.76 | QP | | | |

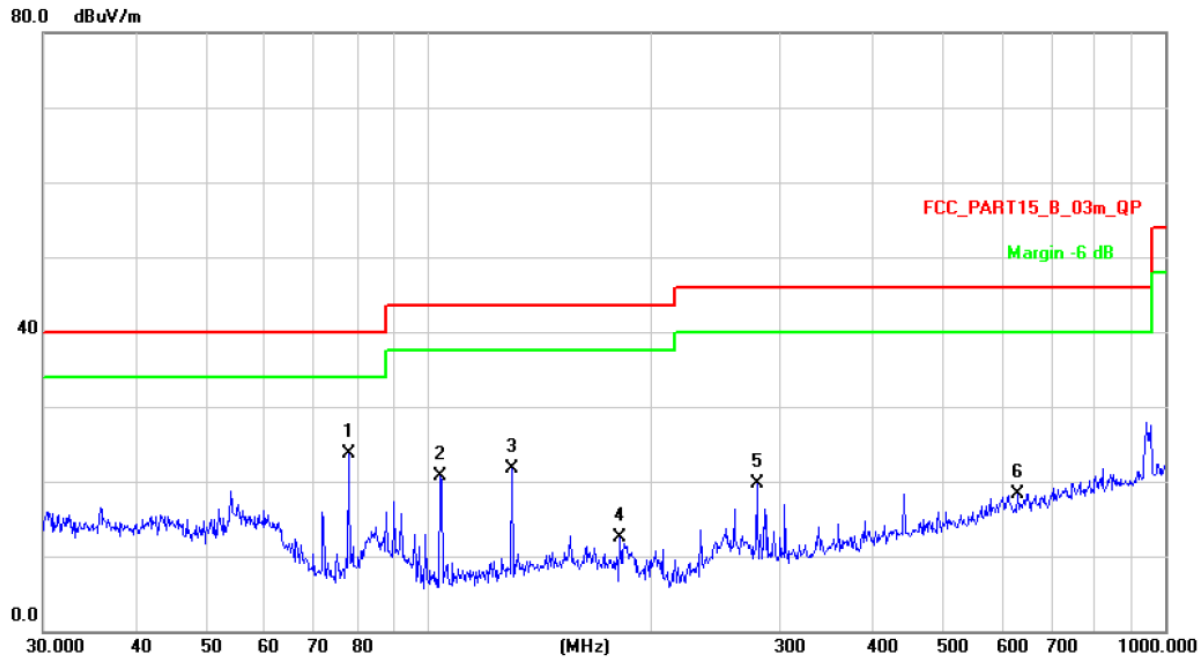
Remark:
Factor = Antenna Factor + Cable Loss – Pre-amplifier.
All interfaces was connected, and BT TX mode was link.



| | | | |
|---|---|---|---|
| EUT： | WiFi IP Camera | Model Name ： | RLC-411WS |
| Temperature： | 26 ℃ | Relative Humidity： | 54% |
| Pressure： | 1010 hPa | Polarization： | Horizontal |
| Test Voltage ： | DC 12V from adapter | | |
| Test Mode ： (Worst) | Link Mode | | |

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | Antenna Height | Table Degree | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB/m | dBuV/m | dBuV/m | dB | Detector | cm | degree | Comment |
| 1 | * | 77.8654 | 41.07 | -17.33 | 23.74 | 40.00 | -16.26 | QP | | | |
| 2 | | 103.8055 | 36.89 | -16.13 | 20.76 | 43.50 | -22.74 | QP | | | |
| 3 | | 129.9226 | 35.87 | -14.11 | 21.76 | 43.50 | -21.74 | QP | | | |
| 4 | | 181.9202 | 27.15 | -14.58 | 12.57 | 43.50 | -30.93 | QP | | | |
| 5 | | 279.0436 | 32.81 | -13.13 | 19.68 | 46.00 | -26.32 | QP | | | |
| 6 | | 631.6884 | 23.67 | -5.41 | 18.26 | 46.00 | -27.74 | QP | | | |

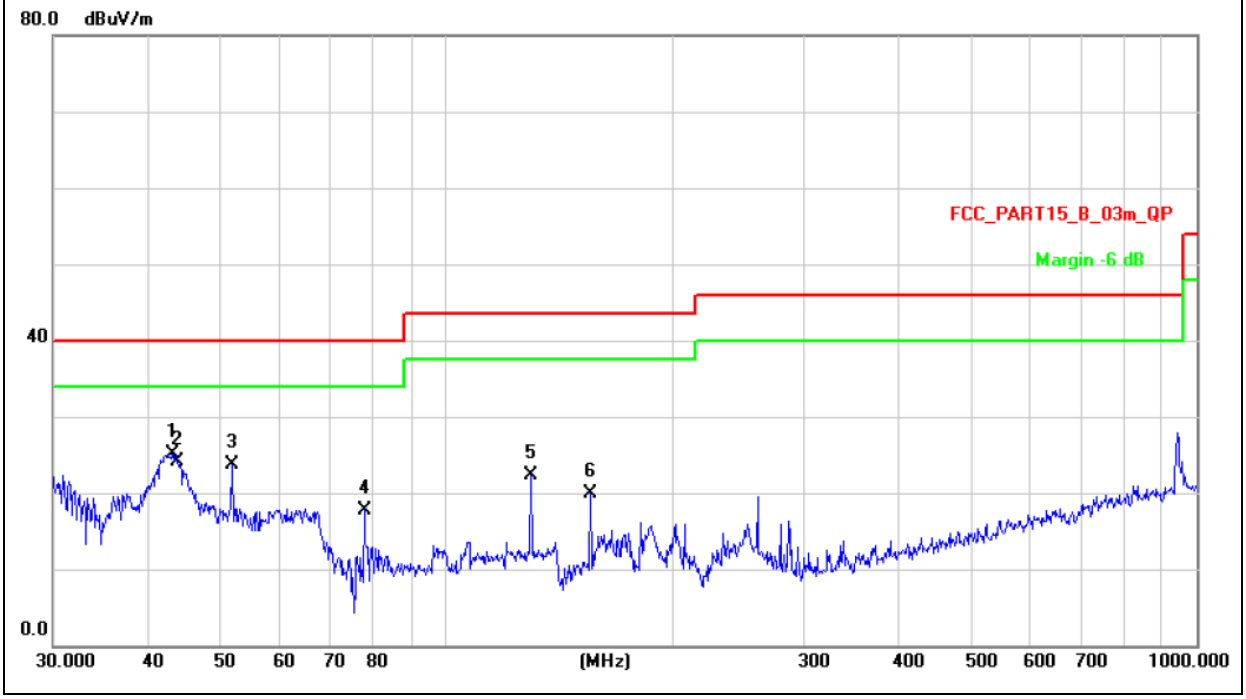
Remark:
Factor = Antenna Factor + Cable Loss – Pre-amplifier.
All interfaces was connected, and BT TX mode was link.



| | | | |
|---|---|---|---|
| EUT： | WiFi IP Camera | Model Name ： | RLC-411WS |
| Temperature： | 26 ℃ | Relative Humidity： | 54% |
| Pressure： | 1010 hPa | Polarization： | Vertical |
| Test Voltage ： | DC 12V from adapter | | |
| Test Mode ： (Worst) | Link Mode | | |

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | Antenna Height | Table Degree | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB/m | dBuV/m | dBuV/m | dB | Detector | cm | degree | Comment |
| 1 | * | 43.2017 | 34.39 | -9.25 | 25.14 | 40.00 | -14.86 | QP | | | |
| 2 | | 43.9658 | 33.49 | -9.35 | 24.14 | 40.00 | -15.86 | QP | | | |
| 3 | | 51.8430 | 34.21 | -10.60 | 23.61 | 40.00 | -16.39 | QP | | | |
| 4 | | 77.8654 | 35.13 | -17.33 | 17.80 | 40.00 | -22.20 | QP | | | |
| 5 | | 129.9226 | 36.44 | -14.11 | 22.33 | 43.50 | -21.17 | QP | | | |
| 6 | | 155.9101 | 32.75 | -12.87 | 19.88 | 43.50 | -23.62 | QP | | | |

Remark:
Factor = Antenna Factor + Cable Loss – Pre-amplifier.
All interfaces was connected, and BT TX mode was link.



Radiated Spurious Emission ( 1GHz to 5th harmonics)

802.11a band 4

| | Freq. | Receiver Reading | Detector | Polar | Corrected Factor | Emission Level | Limit | Result |
|---|---|---|---|---|---|---|---|---|
| | (MHz) | (dBμV) | (PK/QP/Ave) | (H/V) | (dB) | (dBμV/m) | (dBμV/m) | |
| Lower Channel 5745MHz | 11490.00 | 57.19 | PK | H | 2.32 | 59.51 | 74.00 | Pass |
| | 11490.00 | 48.10 | Ave | H | 2.32 | 50.42 | 54.00 | Pass |
| | 17235.00 | 58.88 | PK | H | -2.15 | 56.73 | 74.00 | Pass |
| | 17235.00 | 48.04 | Ave | H | -2.15 | 45.89 | 54.00 | Pass |
| | 11490.00 | 56.85 | PK | V | 2.32 | 59.17 | 74.00 | Pass |
| | 11490.00 | 47.93 | Ave | V | 2.32 | 50.25 | 54.00 | Pass |
| | 17235.00 | 59.12 | PK | V | -2.15 | 56.97 | 74.00 | Pass |
| | 17235.00 | 48.24 | Ave | V | -2.15 | 46.09 | 54.00 | Pass |
| Middle Channel 5785MHz | 11570.00 | 57.86 | PK | H | 2.54 | 60.40 | 74.00 | Pass |
| | 11570.00 | 48.34 | Ave | H | 2.54 | 50.88 | 54.00 | Pass |
| | 17355.00 | 58.48 | PK | H | -1.98 | 56.50 | 74.00 | Pass |
| | 17355.00 | 48.82 | Ave | H | -1.98 | 46.84 | 54.00 | Pass |
| | 11570.00 | 57.79 | PK | V | 2.54 | 60.33 | 74.00 | Pass |
| | 11570.00 | 48.12 | Ave | V | 2.54 | 50.66 | 54.00 | Pass |
| | 17355.00 | 59.37 | PK | V | -1.98 | 57.39 | 74.00 | Pass |
| | 17355.00 | 47.86 | Ave | V | -1.98 | 45.88 | 54.00 | Pass |
| Upper Channel 5805MHz | 11610.00 | 58.46 | PK | H | 2.68 | 61.14 | 74.00 | Pass |
| | 11610.00 | 48.33 | Ave | H | 2.68 | 51.01 | 54.00 | Pass |
| | 17415.00 | 60.14 | PK | H | -1.27 | 58.87 | 74.00 | Pass |
| | 17415.00 | 48.29 | Ave | H | -1.27 | 47.02 | 54.00 | Pass |
| | 11610.00 | 58.76 | PK | V | 2.68 | 61.44 | 74.00 | Pass |
| | 11610.00 | 49.21 | Ave | V | 2.68 | 51.89 | 54.00 | Pass |
| | 17415.00 | 59.57 | PK | V | -1.27 | 58.30 | 74.00 | Pass |
| | 17415.00 | 48.54 | Ave | V | -1.27 | 47.27 | 54.00 | Pass |

Remark:
Factor = Antenna Factor + Cable Loss – Pre-amplifier.
Emission Level = Meter Reading + Factor
Margin = Emission Level - Limit
Other harmonics emissions are lower than 20dB below the allowable limit.

802.11n20 band 4

| | Freq. | Receiver Reading | Detector | Polar | Corrected Factor | Emission Level | Limit | Result |
|---|---|---|---|---|---|---|---|---|
| | (MHz) | (dBμV) | (PK/QP/Ave) | (H/V) | (dB) | (dBμV/m) | (dBμV/m) | |
| Lower Channel 5745MHz | 11490.00 | 57.31 | PK | H | 2.32 | 59.63 | 74.00 | Pass |
| | 11490.00 | 48.20 | Ave | H | 2.32 | 50.52 | 54.00 | Pass |
| | 17235.00 | 59.01 | PK | H | -2.15 | 56.86 | 74.00 | Pass |
| | 17235.00 | 48.14 | Ave | H | -2.15 | 45.99 | 54.00 | Pass |
| | 11490.00 | 56.97 | PK | V | 2.32 | 59.29 | 74.00 | Pass |
| | 11490.00 | 48.03 | Ave | V | 2.32 | 50.35 | 54.00 | Pass |
| | 17235.00 | 59.25 | PK | V | -2.15 | 57.10 | 74.00 | Pass |
| | 17235.00 | 48.34 | Ave | V | -2.15 | 46.19 | 54.00 | Pass |
| Middle Channel 5785MHz | 11570.00 | 57.99 | PK | H | 2.54 | 60.53 | 74.00 | Pass |
| | 11570.00 | 48.44 | Ave | H | 2.54 | 50.98 | 54.00 | Pass |
| | 17355.00 | 58.61 | PK | H | -1.98 | 56.63 | 74.00 | Pass |
| | 17355.00 | 48.92 | Ave | H | -1.98 | 46.94 | 54.00 | Pass |
| | 11570.00 | 57.92 | PK | V | 2.54 | 60.46 | 74.00 | Pass |
| | 11570.00 | 48.22 | Ave | V | 2.54 | 50.76 | 54.00 | Pass |
| | 17355.00 | 59.50 | PK | V | -1.98 | 57.52 | 74.00 | Pass |
| | 17355.00 | 47.96 | Ave | V | -1.98 | 45.98 | 54.00 | Pass |
| Upper Channel 5805MHz | 11610.00 | 58.59 | PK | H | 2.68 | 61.27 | 74.00 | Pass |
| | 11610.00 | 48.43 | Ave | H | 2.68 | 51.11 | 54.00 | Pass |
| | 17415.00 | 60.27 | PK | H | -1.27 | 59.00 | 74.00 | Pass |
| | 17415.00 | 48.39 | Ave | H | -1.27 | 47.12 | 54.00 | Pass |
| | 11610.00 | 58.89 | PK | V | 2.68 | 61.57 | 74.00 | Pass |
| | 11610.00 | 49.31 | Ave | V | 2.68 | 51.99 | 54.00 | Pass |
| | 17415.00 | 59.70 | PK | V | -1.27 | 58.43 | 74.00 | Pass |
| | 17415.00 | 48.64 | Ave | V | -1.27 | 47.37 | 54.00 | Pass |

Remark:
Factor = Antenna Factor + Cable Loss – Pre-amplifier.
Emission Level = Meter Reading + Factor
Margin = Emission Level - Limit
Other harmonics emissions are lower than 20dB below the allowable limit.

# 5. BAND EDGE COMPLIANCE TEST

## 5.1. Limits

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

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

## 5.2. Test setup

Test method: FCC KDB 789033 G)& Parts 15.407(b)(4) & 15.209(a)

Same as Clause 4.2.

## 5.3. Test Data

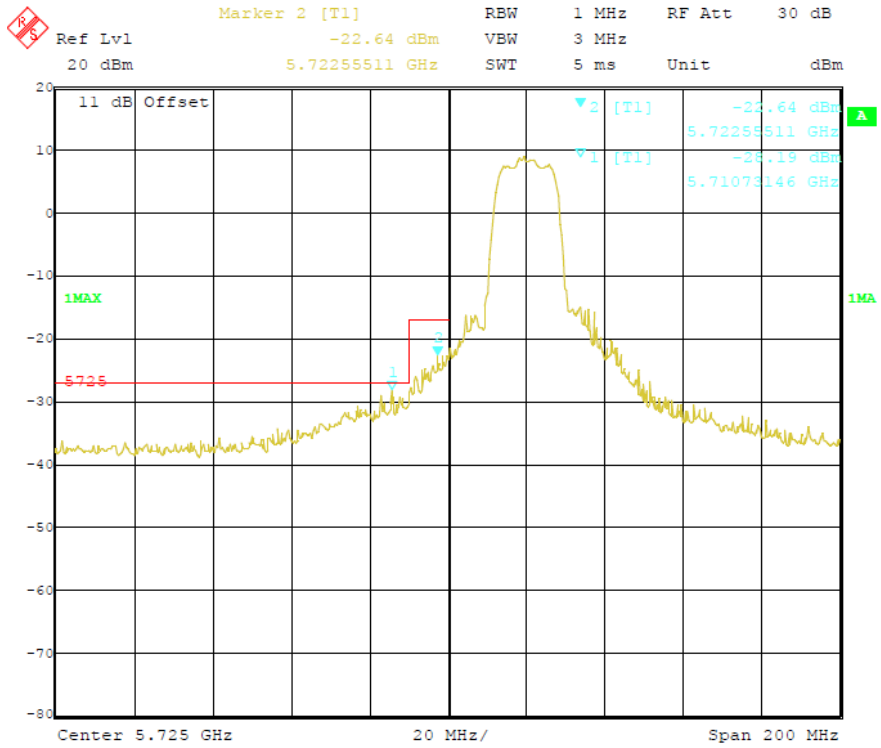
Please see data as below:

Note: we pretest horizontal and vertical, the worst was horizontal and show in the report.

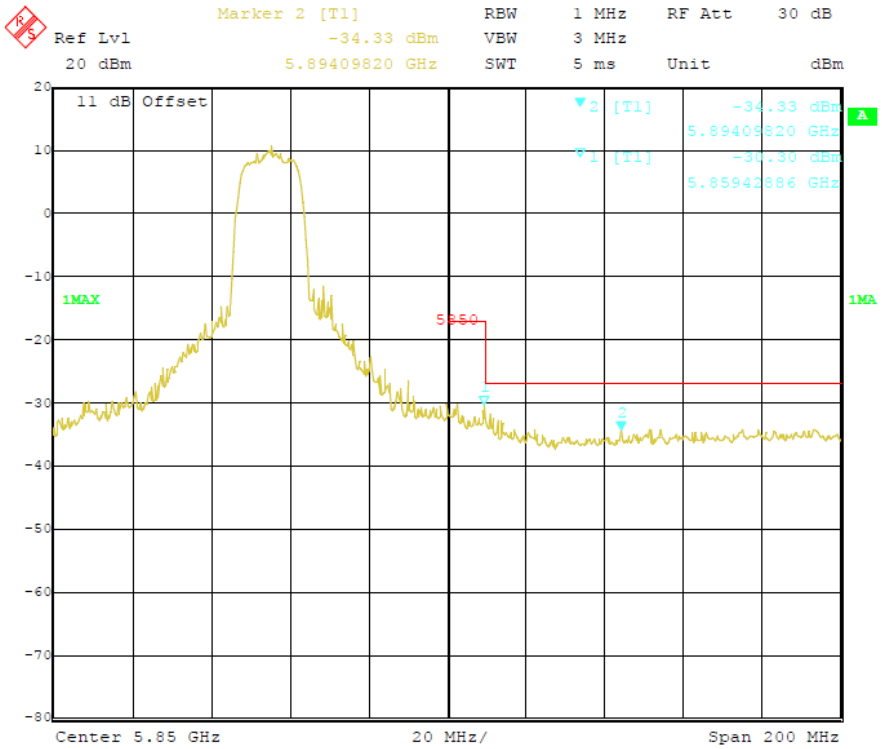
| Modulation | Test Frequency (MHz) | Max Level (dBμV/m) | EIRP[dBm] | Limit[dBm] | Result |
|---|---|---|---|---|---|
| 802.11a | 5745 | 51.39 | -43.81 | -27.00 | Pass |
| | 5875 | 51.61 | -43.59 | -27.00 | Pass |
| | 5805 | 51.36 | -43.84 | -27.00 | Pass |
| 802.11n(HT20) | 5745 | 51.51 | -43.69 | -27.00 | Pass |
| | 5875 | 51.36 | -43.84 | -27.00 | Pass |
| | 5805 | 51.84 | -43.36 | -27.00 | Pass |

Remark: 1. According to KDB 789033 D02 section H) d) (iii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows: EIRP[dBm] = E[dBμV/m] - 95.2

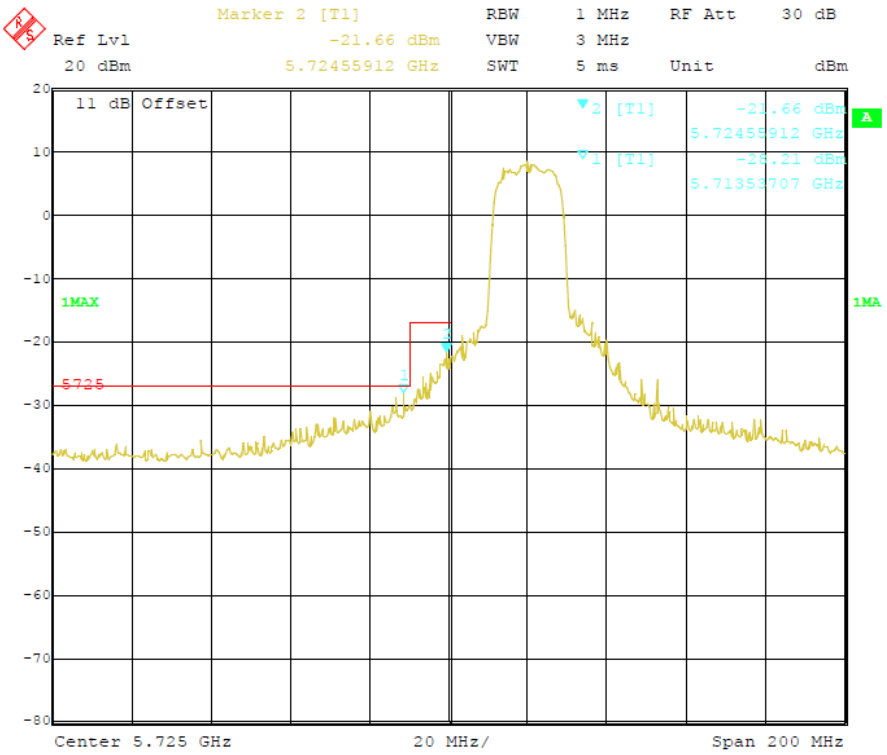
802.11a

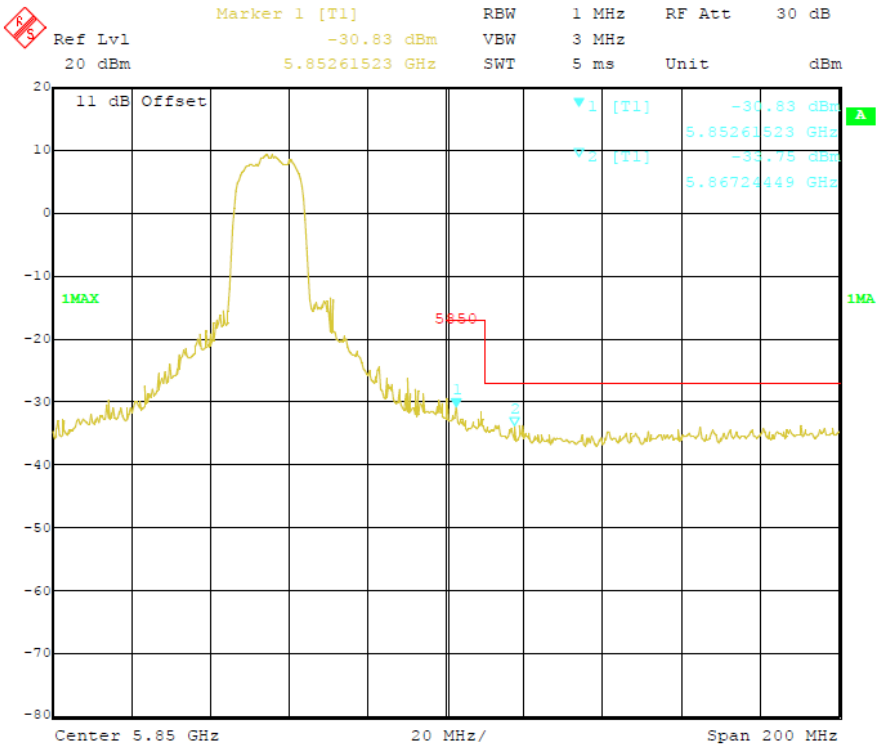

Marker 2 [T1]
RBW 1 MHz
RF Att 30 dB
Ref Lvl
-22.64 dBm
VBW 3 MHz
20 dBm
5.72255511 GHz
SWT 5 ms
Unit dBm
11 dB Offset
2 [T1] -22.64 dBm
5.72255511 GHz
1 [T1] -28.19 dBm
5.71073146 GHz
1MAX
1MA
5725
Center 5.725 GHz
20 MHz/
Span 200 MHz

.


Marker 2 [T1]
RBW 1 MHz
RF Att 30 dB
Ref Lvl
-34.33 dBm
VBW 3 MHz
20 dBm
5.89409820 GHz
SWT 5 ms
Unit dBm
11 dB Offset
2 [T1] -34.33 dBm
5.89409820 GHz
1 [T1] -30.30 dBm
5.85942886 GHz
1MAX
1MA
5850
Center 5.85 GHz
20 MHz/
Span 200 MHz

802.11n(HT20)


Marker 2 [T1]
RBW 1 MHz
RF Att 30 dB
Ref Lvl
-21.66 dBm
VBW 3 MHz
20 dBm
5.72455912 GHz
SWT 5 ms
Unit dBm
11 dB Offset
2 [T1] -21.66 dBm
5.72455912 GHz
1 [T1] -26.21 dBm
5.71359707 GHz
1MAX
1MA
5725
Center 5.725 GHz
20 MHz/
Span 200 MHz


Marker 1 [T1]
RBW 1 MHz
RF Att 30 dB
Ref Lvl
-30.83 dBm
VBW 3 MHz
20 dBm
5.85261523 GHz
SWT 5 ms
Unit dBm
11 dB Offset
1 [T1] -30.83 dBm
5.85261523 GHz
2 [T1] -33.75 dBm
5.86724449 GHz
1MAX
1MA
5850
Center 5.85 GHz
20 MHz/
Span 200 MHz

# 6. 26DB AND 99% BANDWIDTH TEST

## 6.1. Measurement Procedure

The bandwidth at 26 dB down from the highest in-band spectral density is measured with a spectrum analyzer connected to the antenna terminal while the EUT is operating at its maximum power control level, as defined in KDB 789033, at the appropriate frequencies. The spectrum analyzer's bandwidth measurement function is configured to measure the 26 dB bandwidth.

The 26 dB bandwidth is used to determine the conducted power limits.

There is no limit bandwidth for U-NII-1, U-NII-2-A and U-NII-2-C.

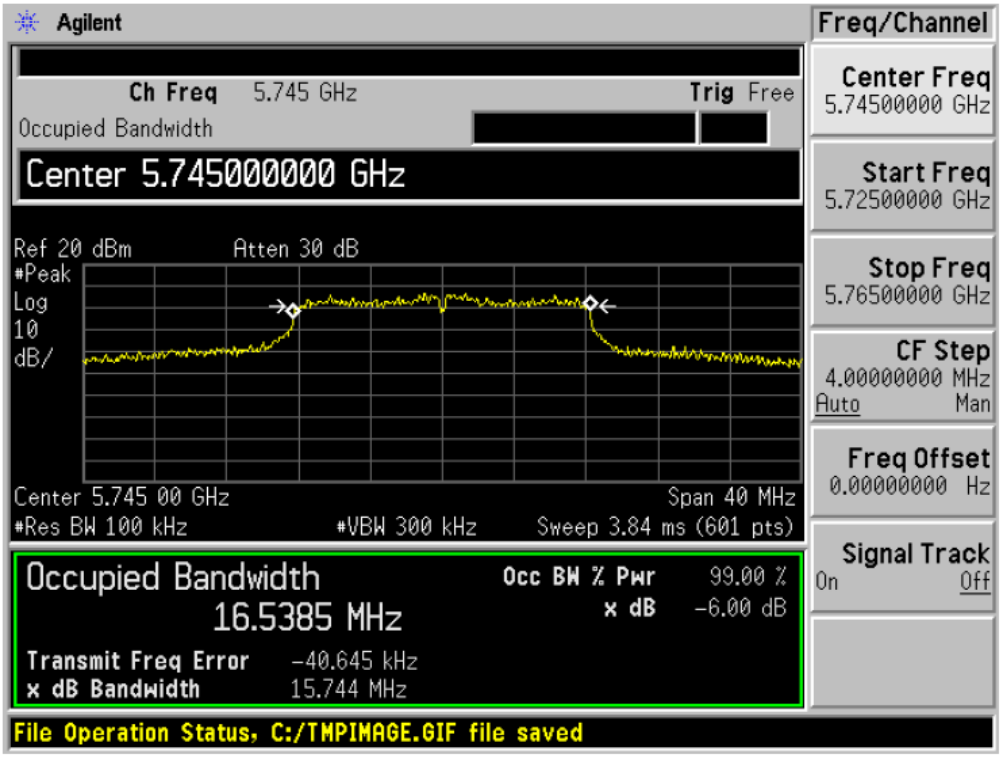
The minimum of 6dB Bandwidth measurement is 0.5 MHz for U-NII-3

6dB bandwith

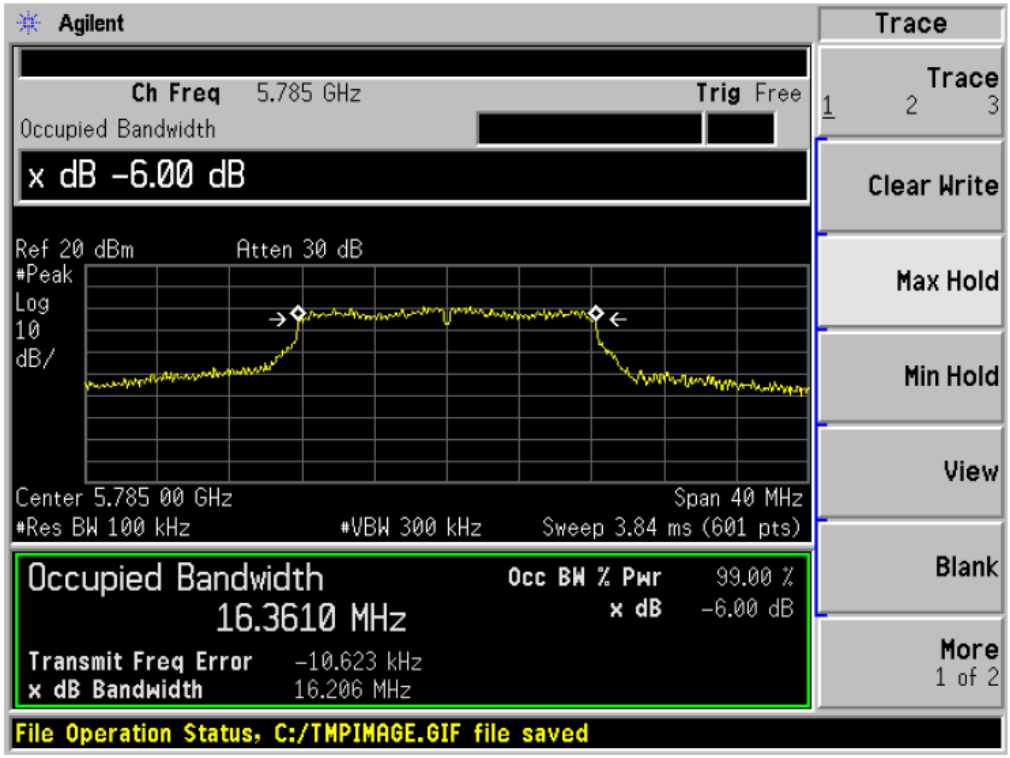
| | Frequency (MHz) | 6dB Bandwidth (MHz) | 99% Bandwidth (MHz) | Limit (MHz) |
|---|---|---|---|---|
| 802.11a | 5745 | 15.744 | 16.39 | >0.5 |
| | 5785 | 16.206 | 16.39 | >0.5 |
| | 5805 | 15.469 | 16.40 | >0.5 |
| 802.11n (HT20) | 5745 | 16.131 | 17.58 | >0.5 |
| | 5785 | 16.213 | 17.58 | >0.5 |
| | 5805 | 16.097 | 17.59 | >0.5 |

6dB bandwith

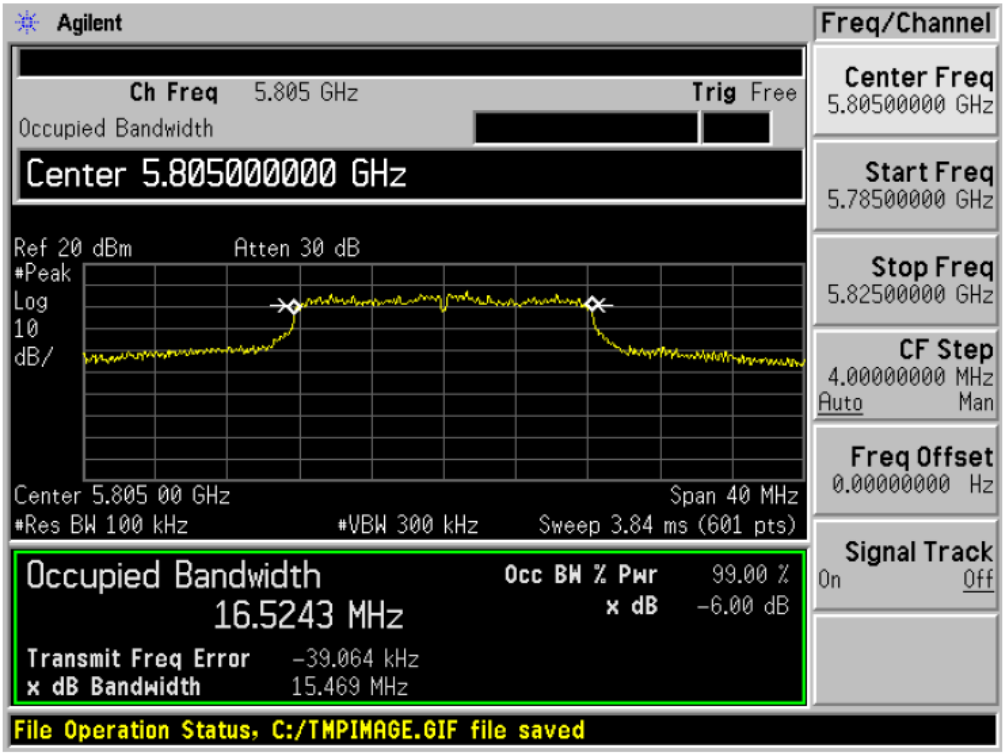
802.11a 5745MHz



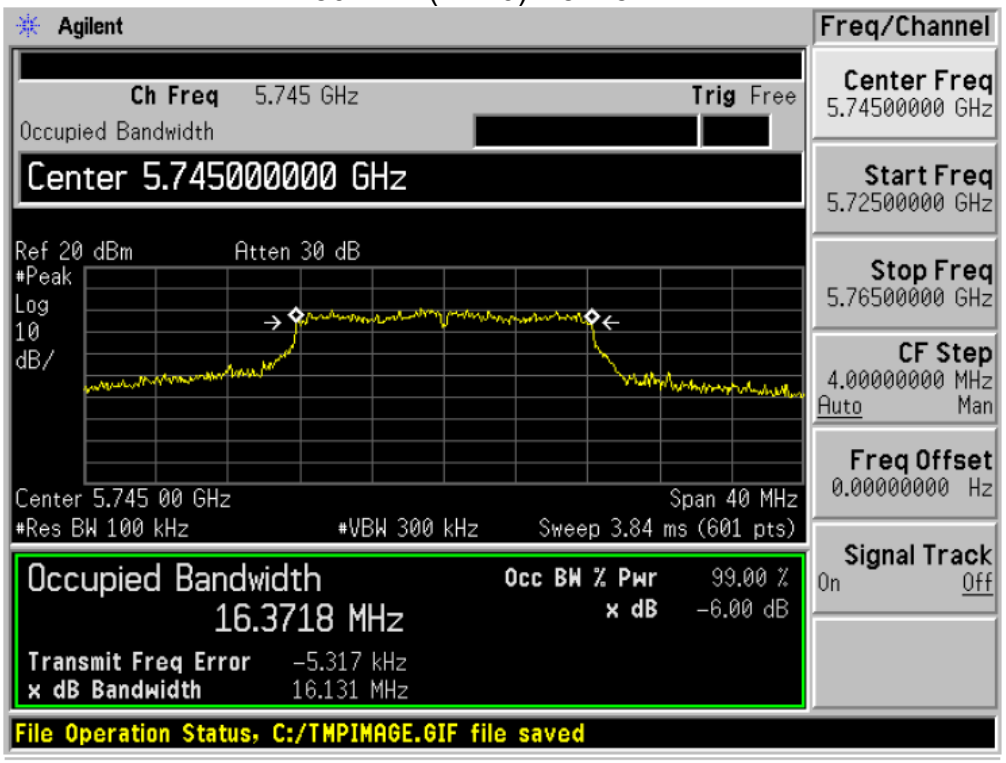

802.11a 5785MHz



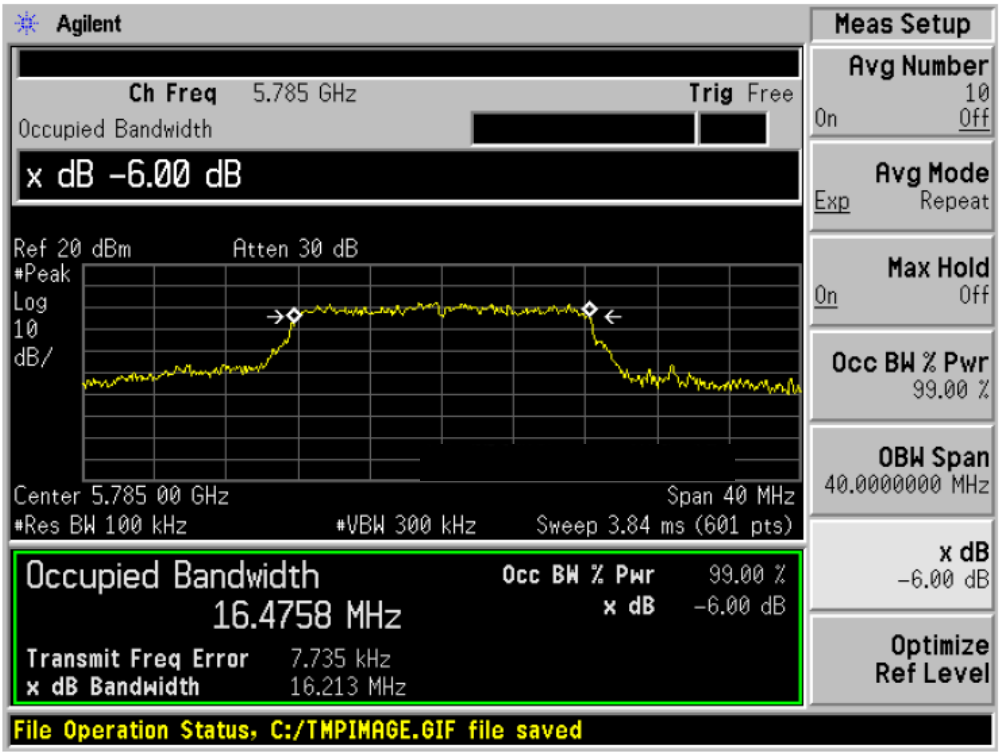
802.11a 5805MHz



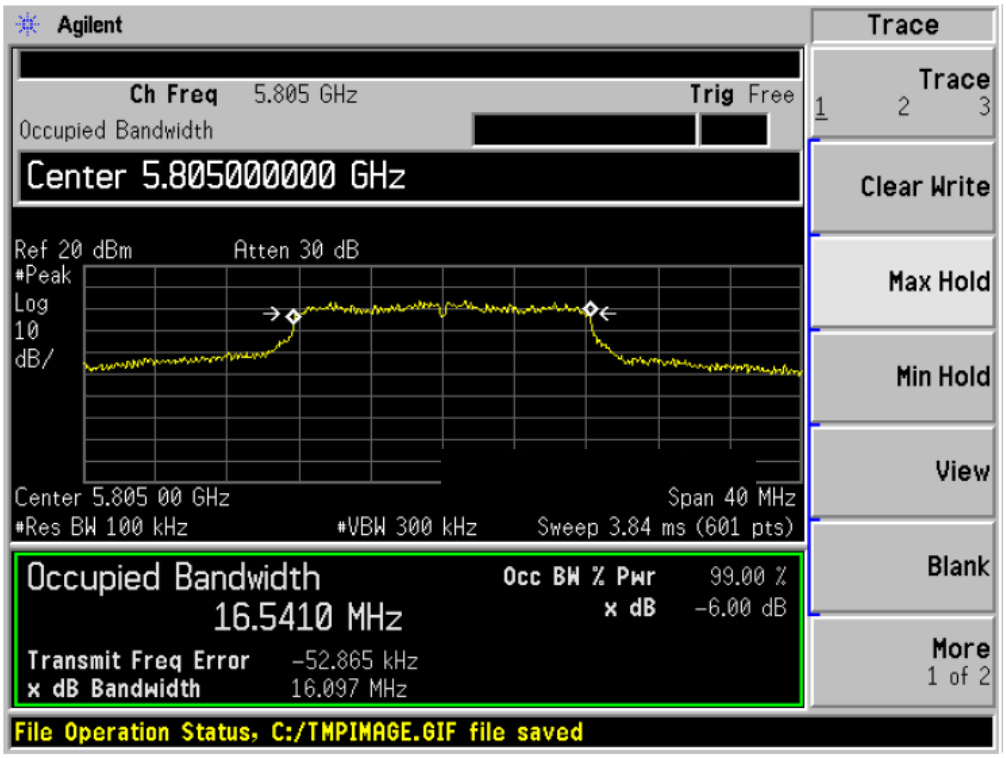

802.11n(HT20) 5745MHz



802.11n(HT20) 5785MHz




802.11n(HT20) 5805MHz



# 7. OUTPUT POWER TEST

## 7.1. Limits

For mobile and portable client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi.

For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W.

## 7.2. Test setup

1. The maximum average conducted output power can be measured using Method PM-G (Measurement using a gated RF average power meter):
2. Measurements may be performed using a wideband gated RF power meter provided that the gate parameters are adjusted such that the power is measured only when the EUT is transmitting at its maximum power control level. Since the measurement is made only during the ON time of the transmitter, no duty cycle correction factor is required.

a. The Transmitter output (antenna port) was connected to the power meter.

b. Turn on the EUT and power meter and then record the power value.

c. Repeat above procedures on all channels needed to be tested.

## 7.3. Test result

| | Frequency (MHz) | Average Output Power(dBm) | Average Output Power(mW) | FCC Limit (dBm) | Result |
|---|---|---|---|---|---|
| 802.11a | 5745 | 14.75 | 29.85 | 30.0 | Pass |
| | 5785 | 14.67 | 29.31 | 30.0 | Pass |
| | 5805 | 14.62 | 28.97 | 30.0 | Pass |
| 802.11n (HT20) | 5745 | 13.08 | 20.32 | 30.0 | Pass |
| | 5785 | 13.11 | 20.46 | 30.0 | Pass |
| | 5805 | 13.06 | 20.23 | 30.0 | Pass |

# 8. PEAK POWER SPECTRAL DENSITY TEST

## 8.1. Limits

In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band.

In addition, the maximum power spectral density shall not exceed 30 dBm in any 500 kHz band.

## 8.2. Test setup

1. Place the EUT on the table and set it in transmitting mode.
2. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v01.
3. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to Spectrum.
4. For U-NII1, U-NII-2A, U-NII-2C Band:

Set RBW=1MHz, VBW=3MHz, where span is enough to capture the entire bandwidth, Sweep time = Auto (601 pts), detector = sample, traces 100 sweeps of video averaging. (SA-2 with the omission of procedure x, the integration with 26dB EBW bandwidth)

For U-NII-3 Band:

Set RBW=300 kHz, VBW=3*RBW, where span is enough to capture the entire bandwidth, Sweep time = Auto, detector = sample, traces 100 sweeps of video averaging. (SA-2 with the omission of procedure x, the integration with 26dB EBW bandwidth)

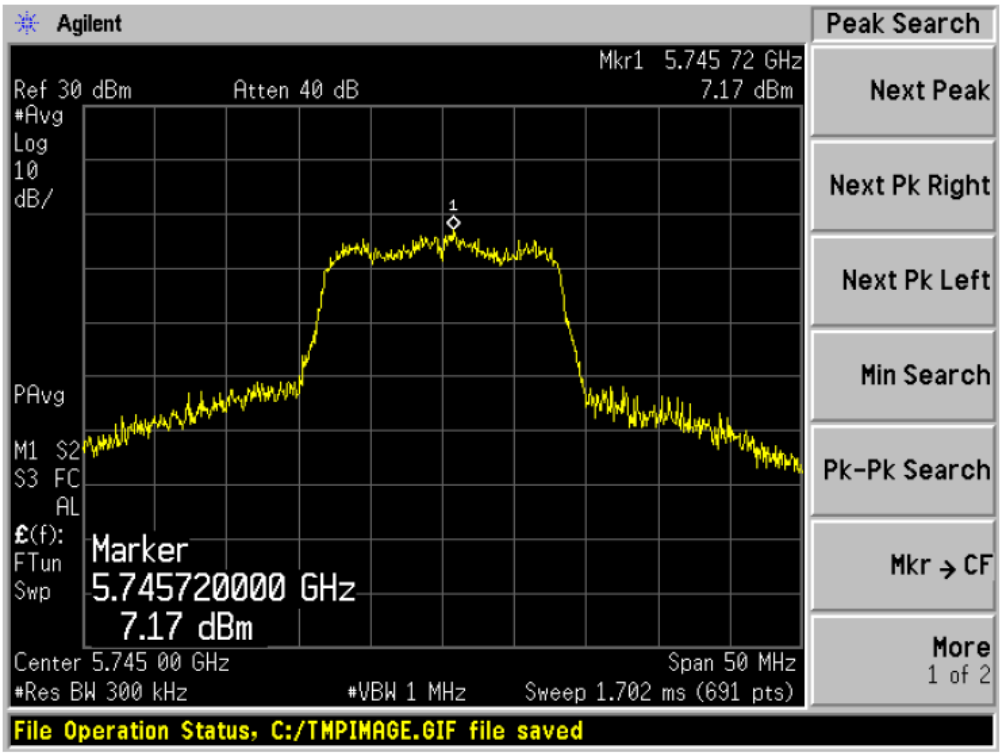
5. User the cursor on spectrum to peak search the highest level of trace
6. Record the max. reading and add 10 log(1/duty cycle).

## 8.3. Test data

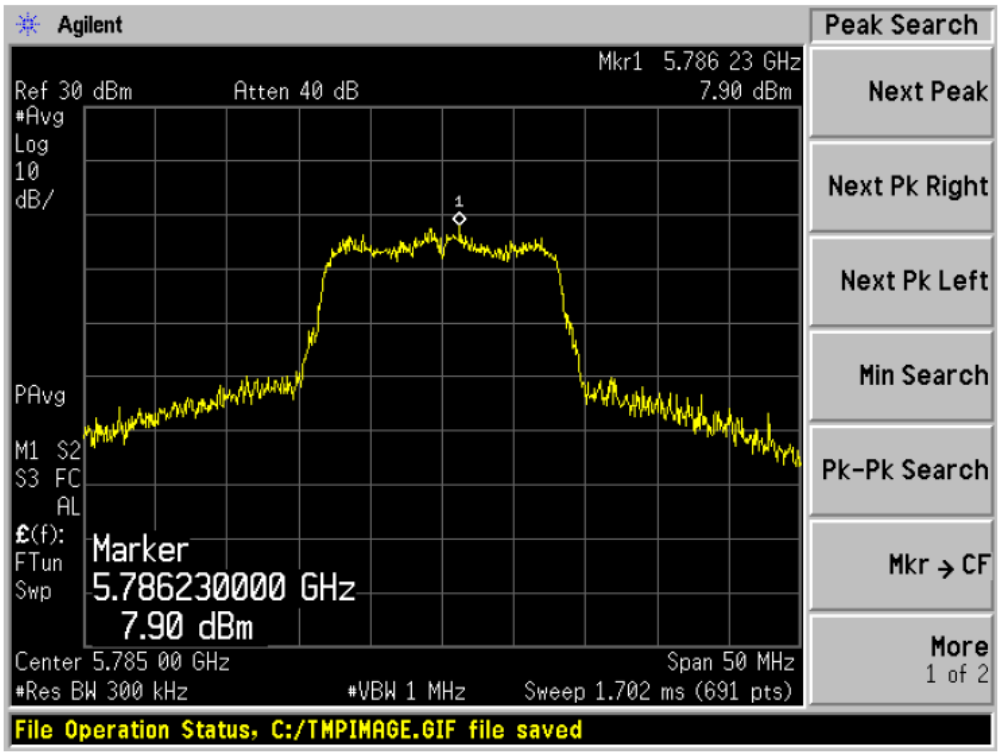
Test data as below

| | Frequency (MHz) | Reading Level (dBm) | Duty factor (dB) | Duty factor 10 log (1MHz/RBW) | PPSD (dBm) | FCC Limit (dBm) | Result |
|---|---|---|---|---|---|---|---|
| 802.11a | 5745 | 7.17 | 0.21 | 5.23 | 12.61 | 30.00 | Pass |
| | 5785 | 7.90 | 0.21 | 5.23 | 13.34 | 30.00 | Pass |
| | 5805 | 9.02 | 0.21 | 5.23 | 14.46 | 30.00 | Pass |
| 802.11n (HT20) | 5745 | 4.33 | 0.44 | 5.23 | 10.00 | 30.00 | Pass |
| | 5785 | 4.30 | 0.44 | 5.23 | 9.97 | 30.00 | Pass |
| | 5805 | 5.32 | 0.44 | 5.23 | 10.99 | 30.00 | Pass |

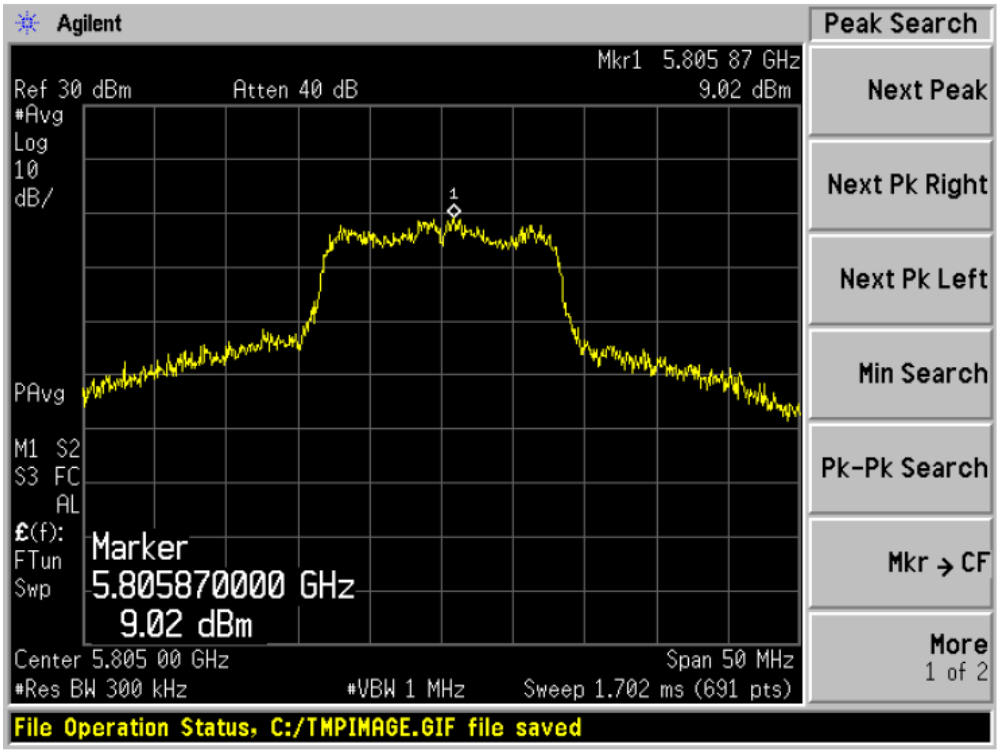
802.11a 5745MHz



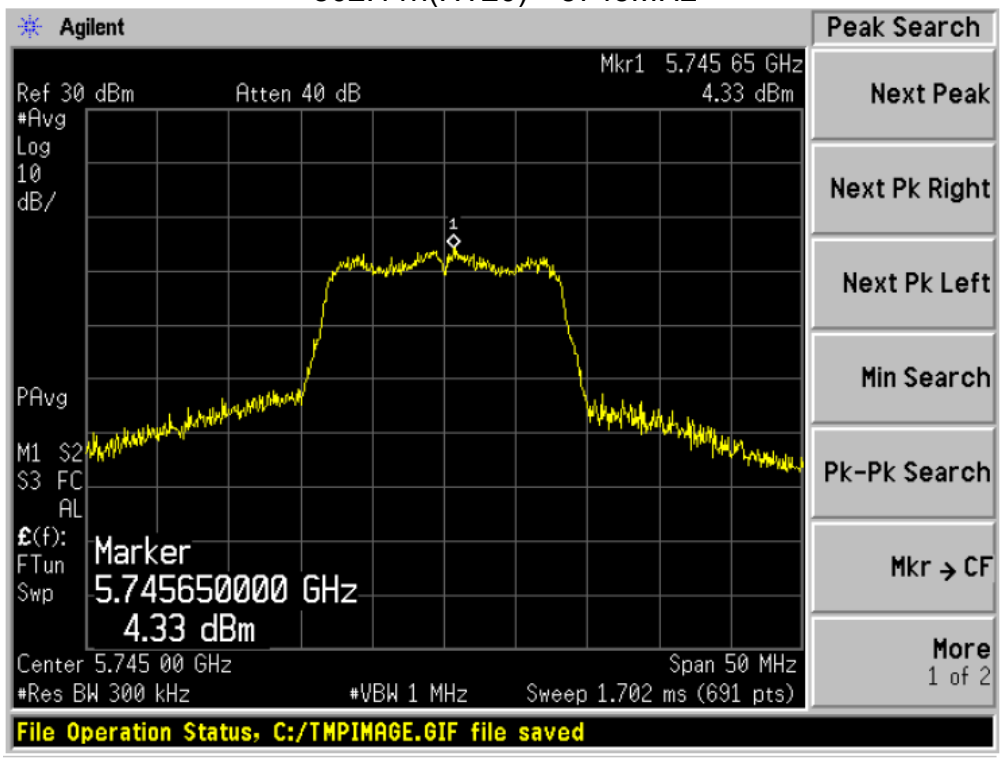

802.11a 5785MHz



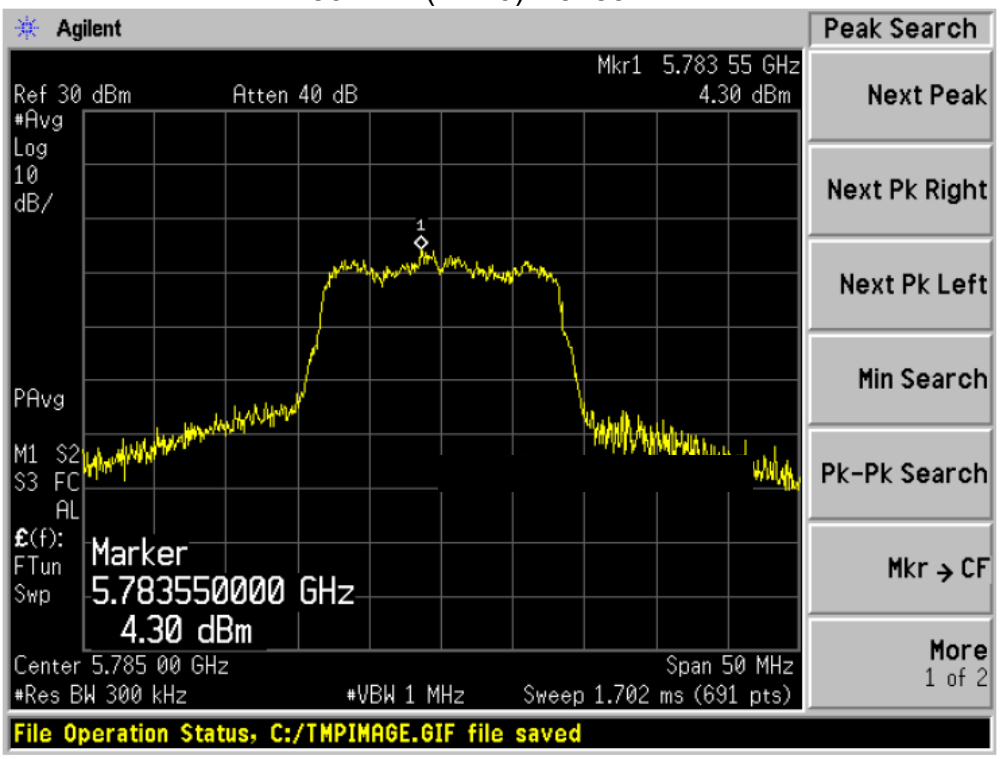
802.11a 5805MHz



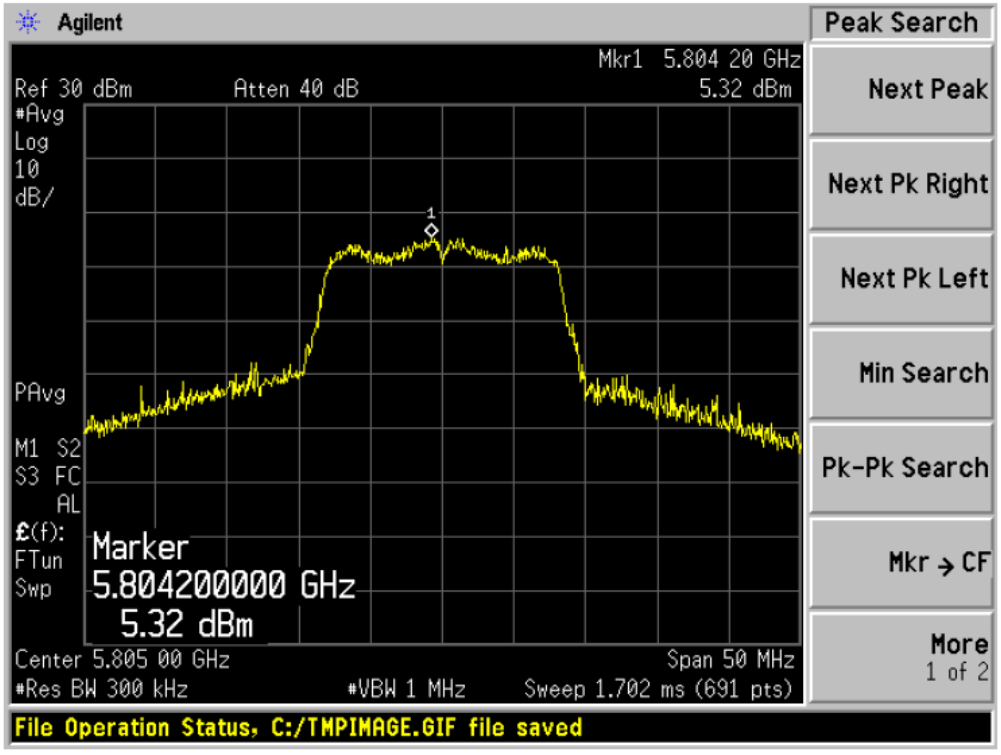

802.11n(HT20) 5745MHz



802.11n(HT20) 5785MHz




802.11n(HT20) 5805MHz



# 9. DUTY CYCLE TEST SIGNAL

Pre-analysis Check: While conducting average power measurement, duty cycle of each mode shall be checked to ensure its duty cycle in order to compensate for the loss due to insufficient ratio of duty cycle.

All duty cycle is pre-scanned, and result as obtained below shows only the most representative ones where duty cycle is conducted as the given transmission with given virtual operation that expresses the percentage.

**Formula:**

Duty Cycle = Ton / (Ton+Toff)

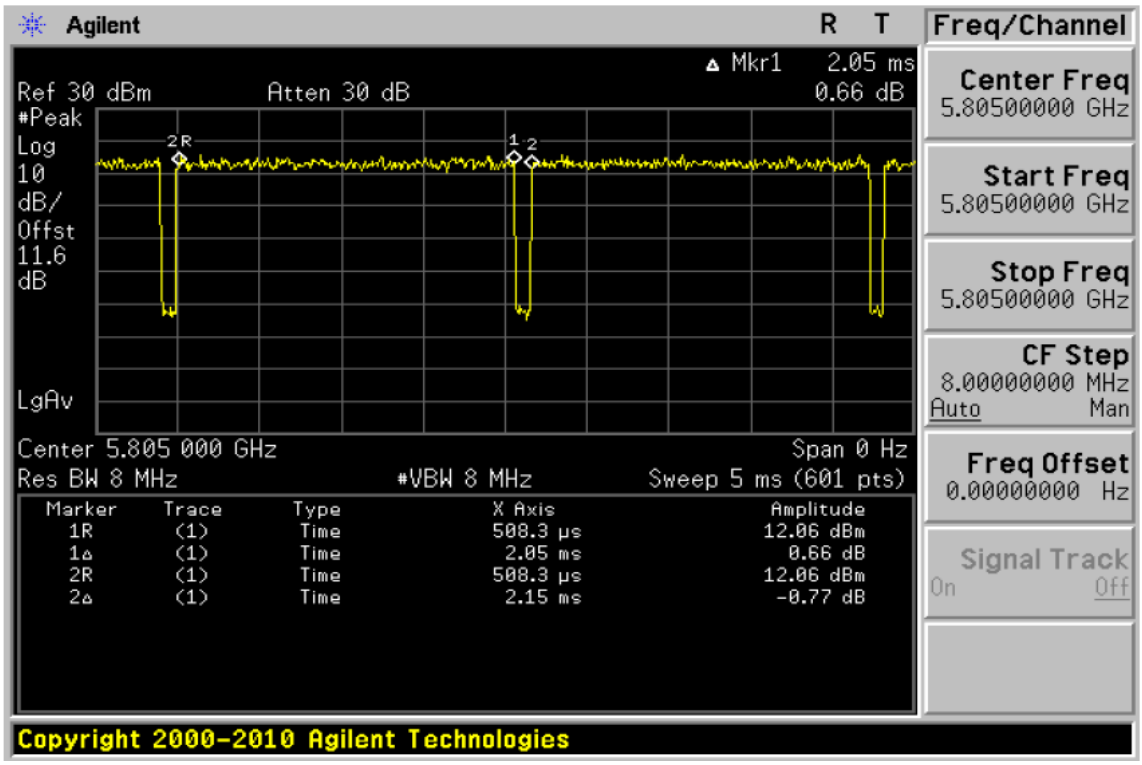
**Measurement Procedure:**

1. Set span = Zero
2. RBW = 8MHz
3. VBW = 8MHz,
4. Detector = Peak

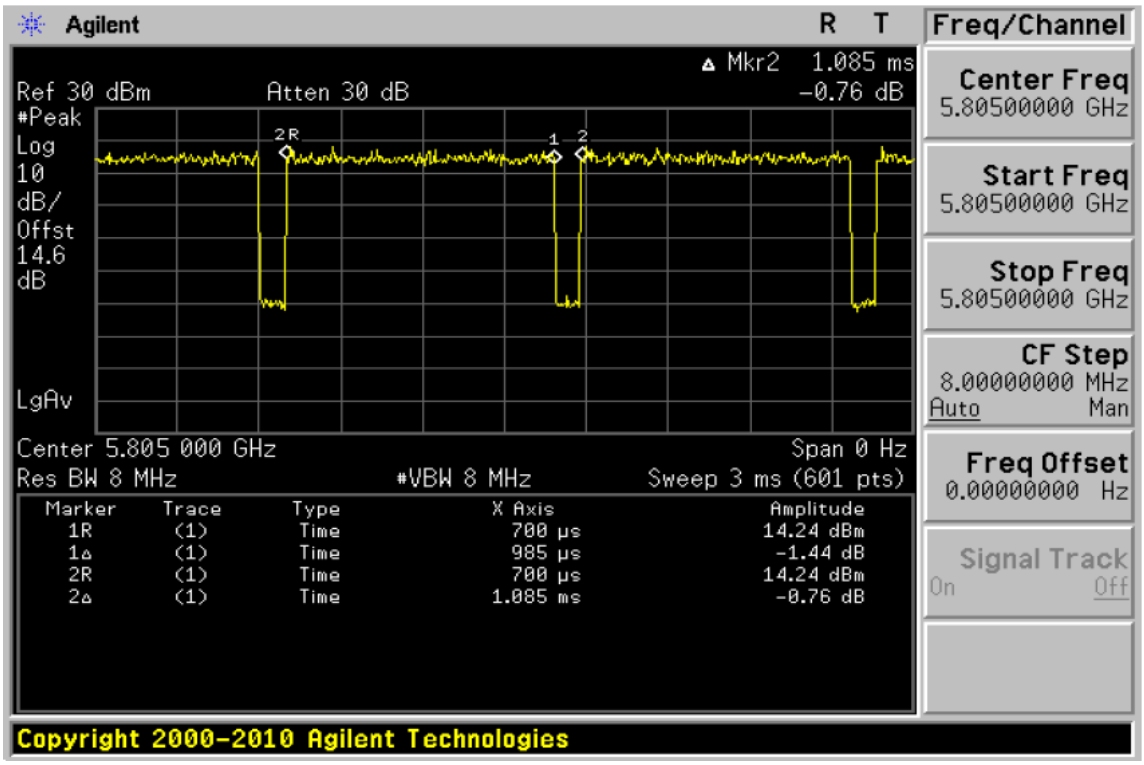
Duty Cycle:

| Operation Mode | Duty Cycle | Duty Fator (dB) 10 * log (1/ Duty cycle) |
|---|---|---|
| 802.11a | 95.35% | 0.21 |
| 802.11n(HT20) | 90.78% | 0.42 |

802.11a




802.11n(HT20)



# 10. FREQUENCY STABILITY

## 10.1. Limits

Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

## 10.2. Test setup

1. The EUT was placed inside temperature chamber and powered and powered by nominal DC voltage.
2. Set EUT as normal operation.
3. Turn the EUT on and couple its output to spectrum.
4. Turn the EUT off and set the chamber to the highest temperature specified.
5. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT and measure the operating frequency.
6. Repeat step with the temperature chamber set to the lowest temperature.

## 10.3. Test data

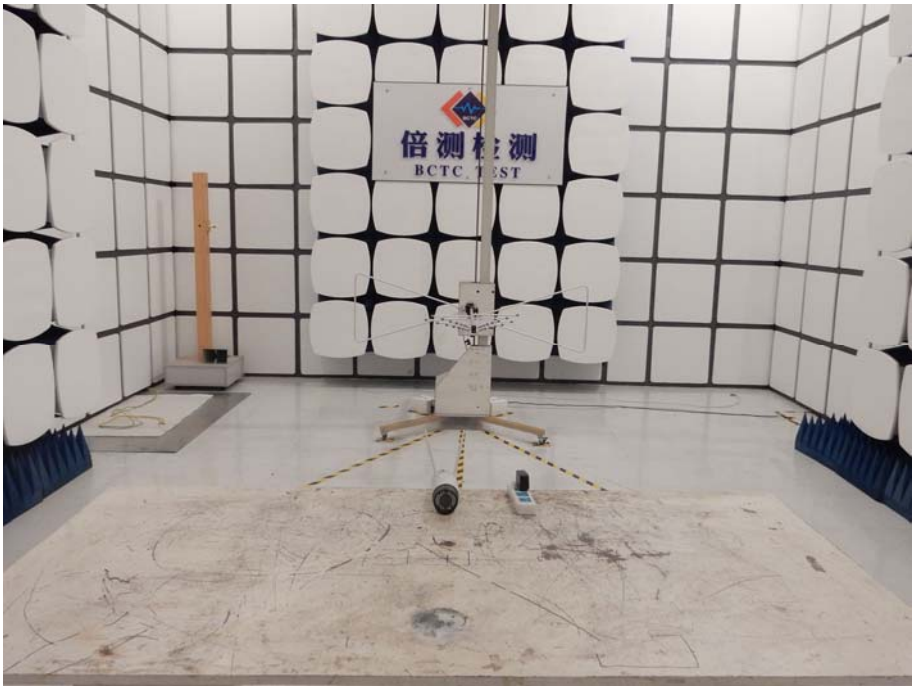
Test data as below

| | Test Voltage | Test Temp. | Measured Frequency (MHz) | Spectrum Frequency (MHz) | ΔFrequency (MHz) |
|---|---|---|---|---|---|
| 802.11a | 4.255V | -20℃ | 5745.000 | 5745.0342 | -0.0342 |
| | | | 5785.000 | 5785.0362 | -0.0362 |
| | | | 5805.000 | 5805.0342 | -0.0342 |
| | 3.145V | | 5745.000 | 5745.0294 | -0.0294 |
| | | | 5785.000 | 5785.0347 | -0.0347 |
| | | | 5805.000 | 5805.0418 | -0.0418 |
| | 3.7V | 25℃ | 5745.000 | 5745.0347 | -0.0347 |
| | | | 5785.000 | 5785.0428 | -0.0428 |
| | | | 5805.000 | 5805.0294 | -0.0294 |
| | 4.255V | 50℃ | 5745.000 | 5745.0614 | -0.0614 |
| | | | 5785.000 | 5785.0418 | -0.0418 |
| | | | 5805.000 | 5805.0611 | -0.0611 |
| | 3.145V | | 5745.000 | 5745.0484 | -0.0484 |
| | | | 5785.000 | 5785.0294 | -0.0294 |
| | | | 5805.000 | 5805.0741 | -0.0741 |

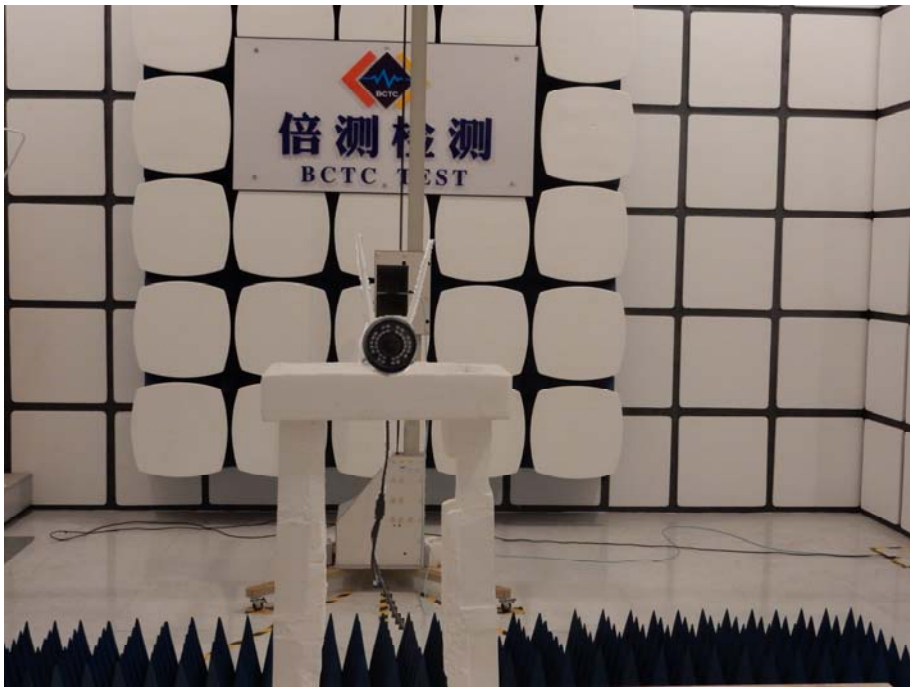
| | Test Voltage | Test Temp. | Measured Frequency (MHz) | Spectrum Frequency (MHz) | ΔFrequency (MHz) |
|---|---|---|---|---|---|
| 802.11nHT20 | 4.255V | -20℃ | 5745.000 | 5745.0674 | -0.0674 |
| | | | 5785.000 | 5785.0249 | -0.0249 |
| | | | 5805.000 | 5805.0337 | -0.0337 |
| | 3.145V | | 5745.000 | 5745.0427 | -0.0427 |
| | | | 5785.000 | 5785.0428 | -0.0428 |
| | | | 5805.000 | 5805.0218 | -0.0218 |
| | 3.7V | 25℃ | 5745.000 | 5745.0617 | -0.0617 |
| | | | 5785.000 | 5785.0347 | -0.0347 |
| | | | 5805.000 | 5805.0519 | -0.0519 |
| | 4.255V | 50℃ | 5745.000 | 5745.0324 | -0.0324 |
| | | | 5785.000 | 5785.0614 | -0.0614 |
| | | | 5805.000 | 5805.0287 | -0.0287 |
| | 3.145V | | 5745.000 | 5745.0387 | -0.0387 |
| | | | 5785.000 | 5785.0269 | -0.0269 |
| | | | 5805.000 | 5805.0334 | -0.0334 |

# 11. PHOTOGRAPHS OF TEST SET-UP

**Radiated Measurement Photos**




**Radiated Measurement Photos**

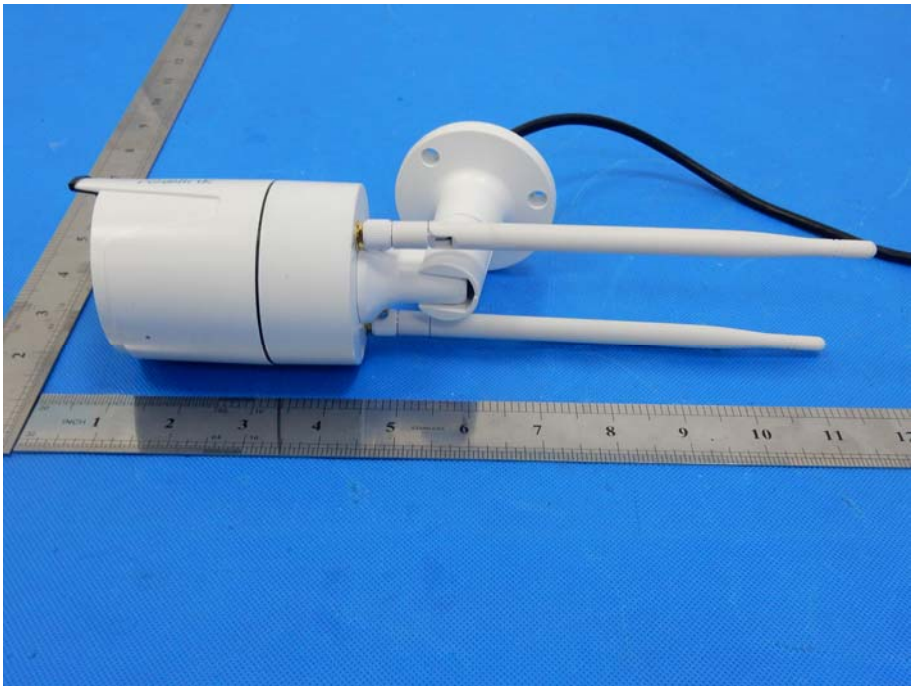


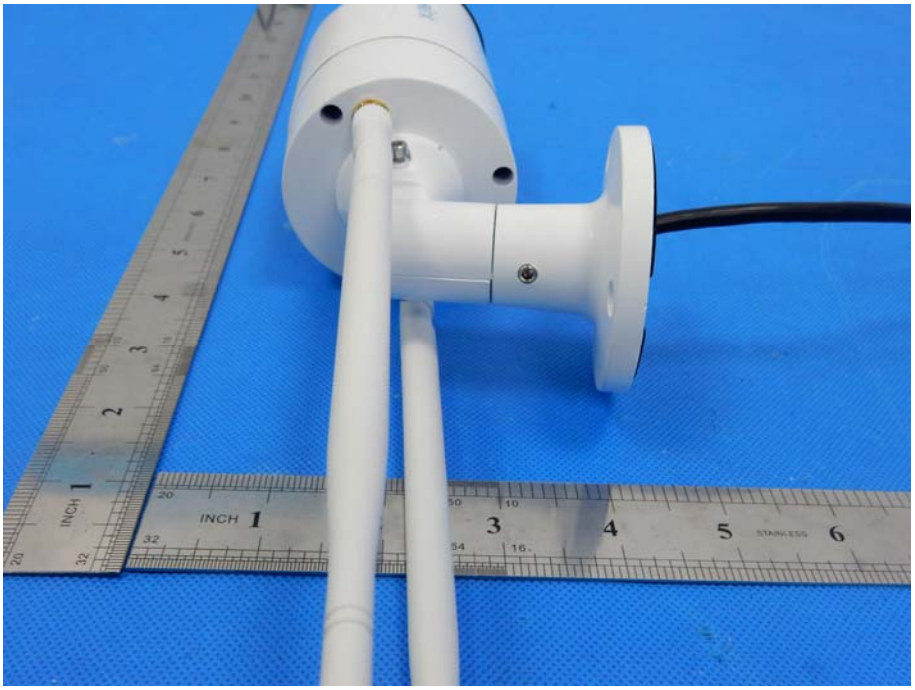
## Conducted Measurement Photos

# 12. PHOTOGRAPHS OF THE EUT

Model:RLC-411WS

Model:RLC-410WS





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