

FCC-TEST REPORT

| Report Number | : | 68.950.16.627.01 | | Date of Iss | sue: | December 07, 2016 |
|-------------------------------------|----------|------------------------|------------|--------------|-------------|-------------------------|
| | | | | | | |
| Model | <u>:</u> | CT4 | | | | |
| Product Type | : | Tablet PC | | | | |
| Applicant | <u>:</u> | Olive Oil Computer | Limited | | | |
| Address | <u>:</u> | Level 15, Langham P | Place, 8 A | Argyle Stre | et, Mongl | kok, Kowloon, |
| | | Hong Kong. | | | | |
| Production Facility | <u>:</u> | Welco Wong's Techn | ology (S | henZhen) | Limited | |
| Address | <u>:</u> | 2-3 floor of block 14, | 1-4 floor | of block 1 | 7, 1-3 floo | or of block 34, No.2 of |
| | | WanFeng WanZhang | gPu Indu | strial Estat | e, ShaJin | ıg, Bao'an ShenZhen, |
| | | China | | | | |
| | | | | | | |
| Test Result | : | ■ Positive □ | Negativ | /e | | |
| Total pages including Appendices | : _ | 48 | | | | |

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2 Details about the Test Laboratory

Details about the Test Laboratory

Test Site 1

Company name: TÜV SÜD Certification and Testing (China) Co., Ltd. Shenzhen Branch

Building 12&13, Zhiheng Wisdomland Business Park,

Nantou Checkpoint Road 2, Nanshan District,

Shenzhen City, 518052,

P. R. China

Telephone: 86 755 8828 6998 Fax: 86 755 828 5299

FCC Registration

Number:

IC Registration

10320A-1

502708

Number:



3 Description of the Equipment under Test

Description of the Equipment Under Test

Product: Tablet PC

Model no.: CT4

FCC ID: 2AKHP-CT4-US

Options and accessories: NIL

Rating: 3.8VDC, 3700mAh

(Supplied by Li-ion rechargeable battery) 5.0VDC, 2.0A (Charging by external adapter)

Adapter Model: MU10-Q050200-A2 Input: 100-240VAC, 50/60Hz, 0.3A

Output: 5.0VDC, 2.0A

RF Transmission 2412-2462MHz

Frequency:

No. of Operated Channel: 11

Modulation: CCK, DQPSK, DBPSK for 802.11b

QPSK,BPSK for 802.11g/n

Duty Cycle: 100%

Antenna Type: Integral Antenna

Antenna Gain: -2dBi

Description of the EUT: The Equipment Under Test (EUT) is a Tablet PC with WIFI function

operating at 2.4GHz



4 Summary of Test Standards

| Test Standards | | | | |
|-----------------------|-----------------------------------|--|--|--|
| FCC Part 15 Subpart C | PART 15 - RADIO FREQUENCY DEVICES | | | |
| 10-1-2015 Edition | Subpart C - Intentional Radiators | | | |

All the test methods were according to KDB558074 DTS Measurement Guidance and ANSI C63.10 (2013).



5 Summary of Test Results

| | Technical Requirement | ents | | |
|---------------------------|--|----------------|------|--------|
| FCC Part 15 Su | bpart C | | | |
| Test Condition | Pages | Test Result | Site | |
| §15.207 | Conducted emission AC power port | 10 | Pass | Site 1 |
| §15.247(b)(1) | Conducted peak output power | 13 | Pass | Site 1 |
| §15.247(e) | Power spectral density | 20 | Pass | Site 1 |
| §15.247(a)(2) | 6dB bandwidth | 14 | Pass | Site 1 |
| §15.247(a)(1) | 20dB bandwidth and 99% Occupied Bandwidth | | | N/A |
| §15.247(a)(1) | Carrier frequency separation | | | N/A |
| §15.247(a)(1)(ii i) | Number of hopping frequencies | | | N/A |
| §15.247(a)(1)(ii i) | Dwell Time | | | N/A |
| §15.247(d) | Spurious RF conducted emissions | 26 | Pass | Site 1 |
| §15.247(d) | Band edge | 36 | Pass | Site 1 |
| §15.247(d) & §15.209 & | Spurious radiated emissions for transmitter and receiver | 40 | Pass | Site 1 |
| §15.203 | Antenna requirement | See note 1 | Pass | Site 1 |

Remark 1: N/A – Not Applicable.

Note 1: The EUT uses a permanently integral antenna, which gain is -2dBi. According to §15.203, it is considered sufficiently to comply with the provisions of this section.



6 General Remarks

Remarks

This submittal(s) (test report) is intended for FCC ID: 2AKHP-CT4-US, complies with Section 15.207, 15.209, 15.247 of the FCC Part 15, Subpart C.

SUMMARY:

All tests according to the regulations cited on page 5 were

- Performed
- □ Not Performed

The Equipment under Test

- **Fulfills** the general approval requirements.
- ☐ **Does not** fulfill the general approval requirements.

Sample Received Date: November 01, 2016

Testing Start Date: November 01, 2016

Testing End Date: November 27, 2016

- TÜV SÜD Certification and Testing (China) Co., Ltd. Shenzhen Branch -

Reviewed by: Prepared by: Tested by:

Phoebe Hu

EMC Project Manager EMC Project Engineer

Leon Zhang EMC Test Engineer

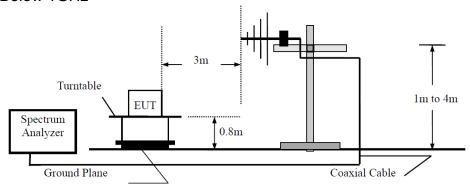
Aaron Lai



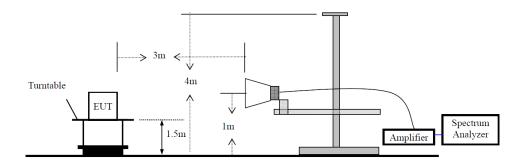
7 Test Setups

7.1 Radiated test setups

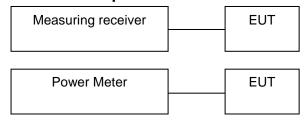
Below 1GHz



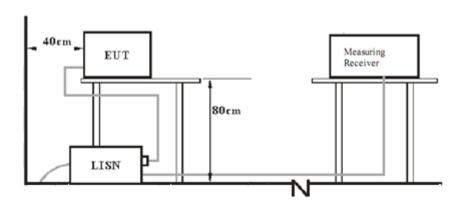
Above 1GHz



7.2 Conducted RF test setups



7.3 AC Power Line Conducted Emission test setups





8 Systems test configuration

Auxiliary Equipment Used during Test:

| DESCRIPTION | MANUFACTURER | MODEL NO.(SHIELD) | S/N(LENGTH) |
|-------------|--------------|-------------------|-------------|
| | | | |

Test software: RF test tool

The system was configured to channel 1, 6 and 11 for the test.



9 Technical Requirement

9.1 Conducted Emission

Test Method

- 1. The EUT was placed on a table, which is 0.8m above ground plane
- 2. The power line of the EUT is connected to the AC mains through a Artificial Mains Network (A.M.N.).
- 3. Maximum procedure was performed to ensure EUT compliance
- 4. A EMI test receiver is used to test the emissions from both sides of AC line

Limit

| Frequency | QP Limit | AV Limit |
|-------------|----------|----------|
| MHz | dΒμV | dΒμV |
| 0.150-0.500 | 66-56* | 56-46* |
| 0.500-5 | 56 | 46 |
| 5-30 | 60 | 50 |

Decreasing linea



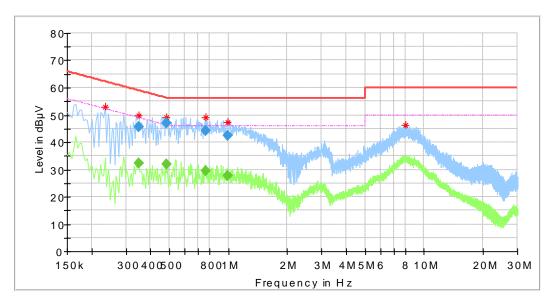
Conducted Emission

Product Type : Tablet PC M/N : CT4

Operating Condition : Charging & TX

Test Specification : Live

Comment : AC 120V/60Hz



| Frequency | QuasiPeak | Average | Limit | Margin | Line | Corr. |
|-----------|-----------|---------|--------|--------|------|-------|
| (MHz) | (dBµV) | (dBµV) | (dBµV) | (dB) | | (dB) |
| 0.349500 | | 32.31 | 48.97 | 16.66 | L1 | 9.7 |
| 0.349500 | 45.57 | | 58.97 | 13.40 | L1 | 9.7 |
| 0.482500 | | 31.76 | 46.30 | 14.54 | L1 | 9.7 |
| 0.482500 | 47.10 | | 56.30 | 9.20 | L1 | 9.7 |
| 0.765500 | | 29.58 | 46.00 | 16.42 | L1 | 9.7 |
| 0.765500 | 44.14 | | 56.00 | 11.86 | L1 | 9.7 |
| 0.989500 | | 27.87 | 46.00 | 18.13 | L1 | 9.7 |
| 0.989500 | 42.38 | | 56.00 | 13.62 | L1 | 9.7 |

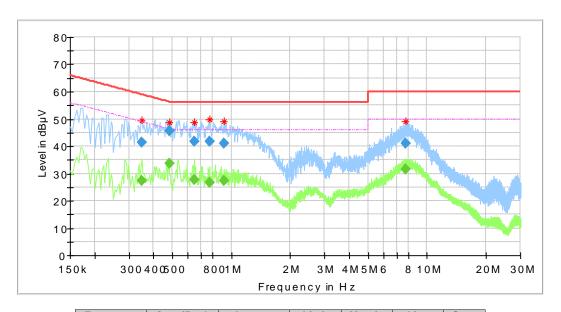


Conducted Emission

Product Type : Tablet PC M/N : CT4

Operating Condition : Charging & TX Test Specification : Neutral

Comment : AC 120V/60Hz



| Frequency | QuasiPeak | Average | Limit | Margin | Line | Corr. |
|-----------|-----------|---------|--------|--------|------|-------|
| (MHz) | (dBµV) | (dBµV) | (dBµV) | (dB) | | (dB) |
| 0.350500 | | 27.24 | 48.95 | 21.71 | N | 9.7 |
| 0.350500 | 41.52 | | 58.95 | 17.43 | N | 9.7 |
| 0.481500 | | 33.66 | 46.31 | 12.65 | N | 9.7 |
| 0.481500 | 45.69 | | 56.31 | 10.62 | N | 9.7 |
| 0.649500 | | 27.85 | 46.00 | 18.15 | N | 9.7 |
| 0.649500 | 41.86 | | 56.00 | 14.14 | N | 9.7 |
| 0.777500 | | 26.60 | 46.00 | 19.40 | N | 9.7 |
| 0.777500 | 41.67 | | 56.00 | 14.33 | N | 9.7 |
| 0.917500 | | 27.46 | 46.00 | 18.54 | N | 9.7 |
| 0.917500 | 41.15 | | 56.00 | 14.85 | N | 9.7 |
| 7.789500 | | 31.48 | 50.00 | 18.52 | N | 9.9 |
| 7.789500 | 41.01 | | 60.00 | 18.99 | N | 9.9 |



9.2

9.2 Conducted peak output power

Test Method

The transmitter output is connected to a wideband peak and average power meter.

Limits

According to §15.247 (b) (1), conducted peak output power limit as below:

| Frequency Range | Limit | Limit |
|-----------------|-------|-------|
| MHz | W | dBm |
| 2400-2483.5 | ≤1 | ≤30 |

Test result as below table

802.11b

| Conducted Peak | | | | | |
|------------------------|--------------|--------|--|--|--|
| Frequency | Output Power | Result | | | |
| MHz | dBm | | | | |
| Top channel 2412MHz | 15.9 | Pass | | | |
| Middle channel 2437MHz | 15.8 | Pass | | | |
| Bottom channel 2462MHz | 15.5 | Pass | | | |

802.11g

| | Conducted Peak | |
|------------------------|----------------|--------|
| Frequency | Output Power | Result |
| MHz | dBm | |
| Top channel 2412MHz | 15.0 | Pass |
| Middle channel 2437MHz | 15.0 | Pass |
| Bottom channel 2462MHz | 14.7 | Pass |

802.11nHT20

| Conducted Peak | | | | | |
|------------------------|--------------|--------|--|--|--|
| Frequency | Output Power | Result | | | |
| MHz | dBm | | | | |
| Top channel 2412MHz | 14.0 | Pass | | | |
| Middle channel 2437MHz | 13.8 | Pass | | | |
| Bottom channel 2462MHz | 13.6 | Pass | | | |



9.3 6dB bandwidth

Test Method

- Use the following spectrum analyzer settings: RBW=100K, VBW≥3RBW, Sweep = auto, Detector function = peak, Trace = max hold
- 2. Use the automatic bandwidth measurement capability of an instrument, may be employed using the X dB bandwidth mode with X set to 6 dB, care shall be taken so that the bandwidth measurement is not influenced by any intermediate power nulls in the fundamental emission that might be ≥ 6 dB.
- 3. Allow the trace to stabilize, record the X dB Bandwidth value.

Limit

| Lillin | | | |
|-------------|---|----------------------------|----------------------|
| | | Limit [kHz] | |
| | | ≥500 | |
| Test result | | | |
| 802.11b | | | |
| | Frequency MHz | 6dB bandwidth MHz | Result |
| _ | Top channel 2412MHz Middle channel 2437MHz Bottom channel 2462MHz | 9.986 9.508 9.986 | Pass Pass Pass |
| 802.11g | | | |
| _ | Frequency MHz | 6dB bandwidth MHz | Result |
| | Top channel 2412MHz Middle channel 2437MHz Bottom channel 2462MHz | 15.109 15.109 14.197 | Pass Pass Pass |
| 802.11nHT20 |) | | |
| | Frequency MHz | 6dB bandwidth MHz | Result |
| | Top channel 2412MHz | 14.240 | Pass |

Middle channel 2437MHz

Bottom channel 2462MHz

14.674

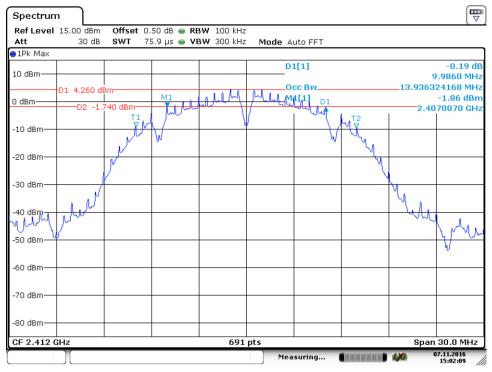
14718

Pass

Pass

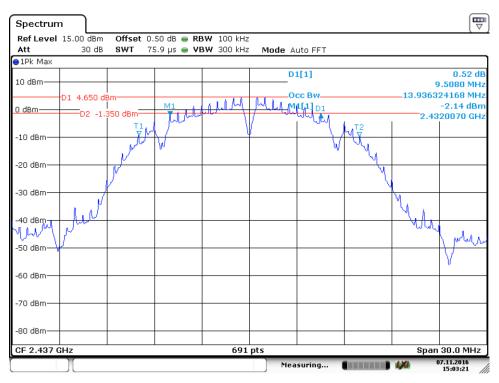


802.11b



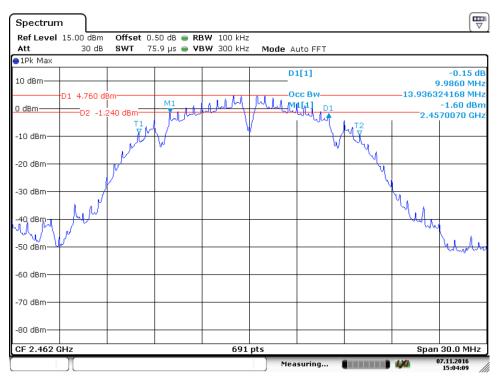
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2412MHz



Date: 7.NOV.2016 15:03:22

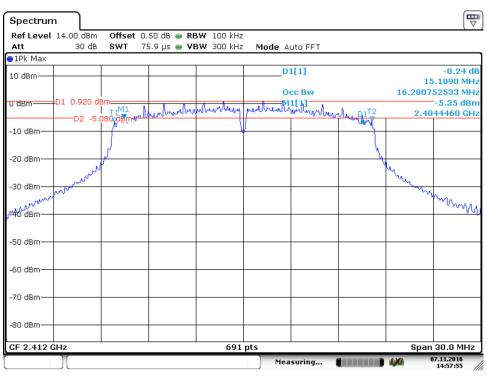




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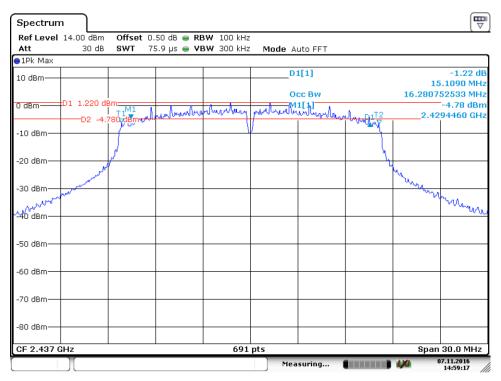
2462MHz

802.11g



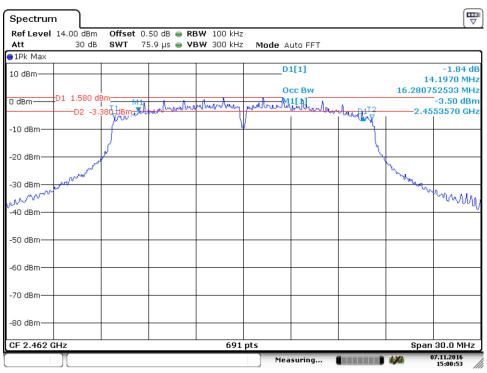
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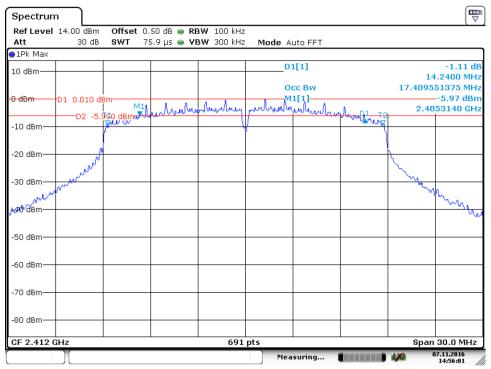
2437MHz



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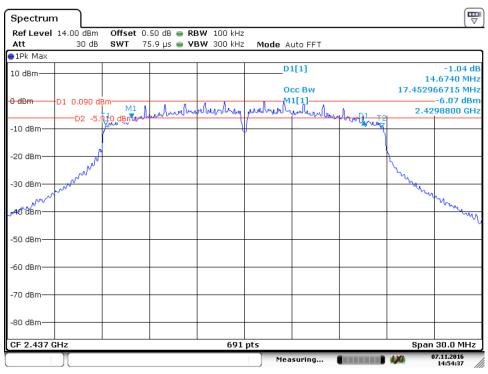


802.11nHT20



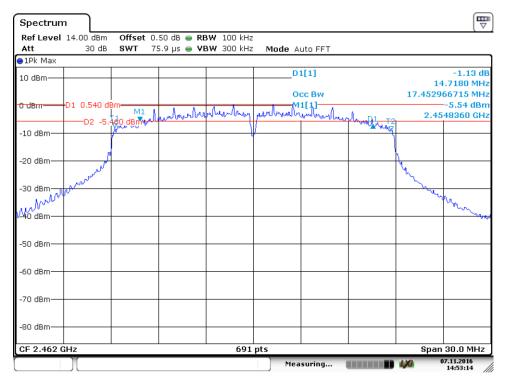
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2412MHz



Date: 7.NOV.2016 14:54:37





Date: 7.NOV.2016 14:53:14

2462MHz



9.4 Power spectral density

Test Method

This procedure shall be used if maximum peak conducted output power was used to demonstrate compliance:

- Set analyzer center frequency to DTS channel center frequency. RBW=3kHz, VBW≥3RBW, Span=1.5 times DTS bandwidth, Detector=Peak, Sweep=auto, Trace= max hold.
- 2. Allow trace to fully stabilize, use the peak marker function to determine the maximum amplitude level within the RBW.
- 3. Repeat above procedures until other frequencies measured were completed.

Limit

| Limit [dBm] | |
|-------------|--|
| ≤8 | |

Test result

802.11b

| | Power spectral | |
|------------------------|----------------|--------|
| Frequency | density | Result |
| MHz | dBm | |
| Top channel 2412MHz | -8.66 | Pass |
| Middle channel 2437MHz | -9.42 | Pass |
| Bottom channel 2462MHz | -10.07 | Pass |

802.11g

| Frequency | Power spectral density | Result |
|------------------------|------------------------|--------|
| MHz | dBm | |
| Top channel 2412MHz | -11.90 | Pass |
| Middle channel 2437MHz | -12.50 | Pass |
| Bottom channel 2462MHz | -12.60 | Pass |

802.11nHT20

| | Power spectral | |
|------------------------|----------------|--------|
| Frequency | density | Result |
| MHz | dBm | |
| Top channel 2412MHz | -13.46 | Pass |
| Middle channel 2437MHz | -13.49 | Pass |
| Bottom channel 2462MHz | -13.13 | Pass |



802.11b



Date: 7.NOV.2016 14:39:02

2412MHz



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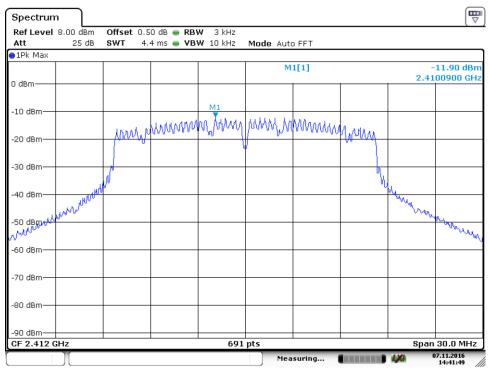




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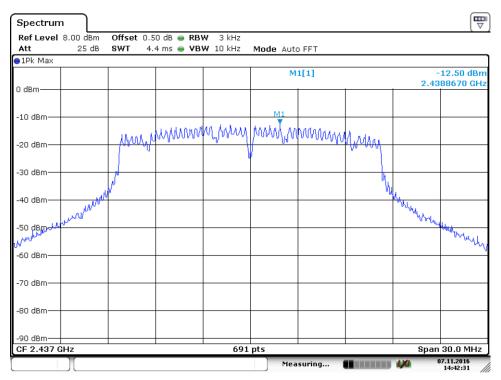
2462MHz

802.11g



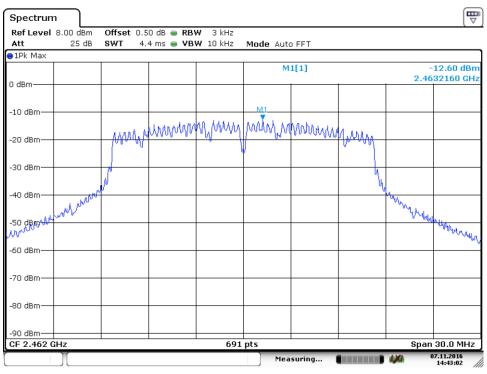
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2437MHz

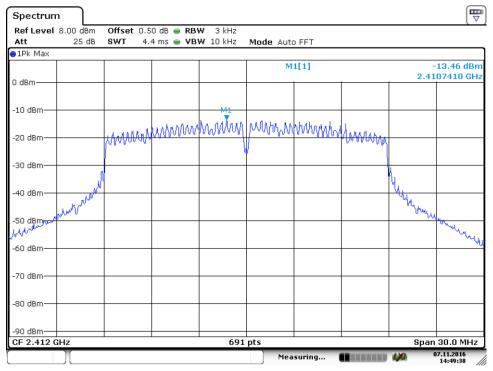


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2462MHz

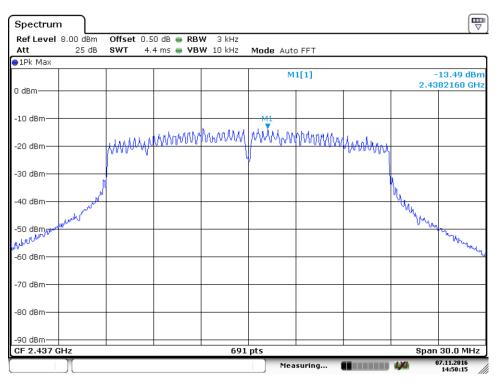


802.11nHT20



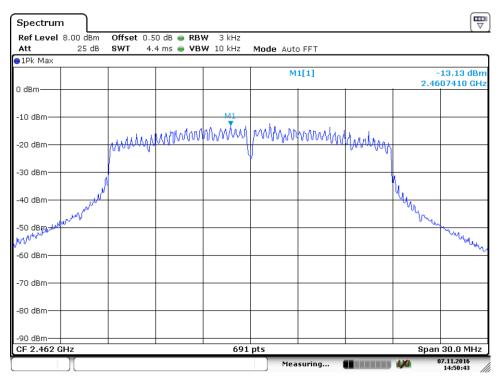
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2412MHz



Date: 7.NOV.2016 14:50:16





Date: 7.NOV.2016 14:50:43

2462MHz



9.5 Spurious RF conducted emissions

Test Method

- 1. Establish a reference level by using the following procedure:
 - a. Set RBW=100 kHz. VBW≥3RBW. Detector =peak, Sweep time = auto couple, Trace mode = max hold.
 - b. Allow trace to fully stabilize, use the peak marker function to determine the maximum PSD level.
- 2. Use the maximum PSD level to establish the reference level.
 - a. Set the center frequency and span to encompass frequency range to be measured.
 - b. Use the peak marker function to determine the maximum amplitude level. Ensure that the amplitude of all unwanted emissions outside of the authorized frequency band (excluding restricted frequency bands) are attenuated by at least the minimum requirements, report the three highest emissions relative to the limit.
- 3. Repeat above procedures until other frequencies measured were completed.

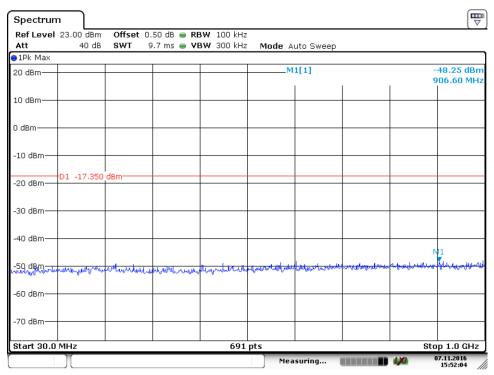
Limit

| Frequency Ran MHz | ge Limit (dBc) |
|----------------------|----------------|
| 30-25000 | -20 |

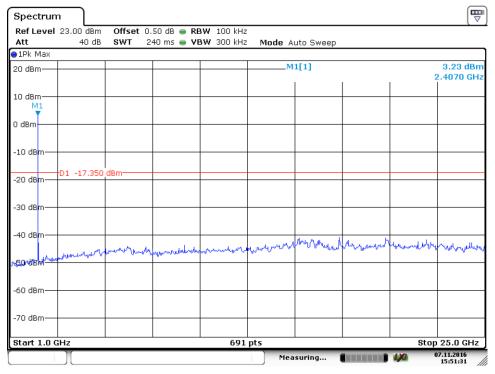


Spurious RF conducted emissions

802.11b

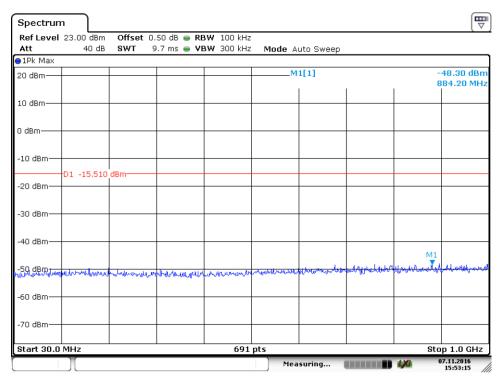


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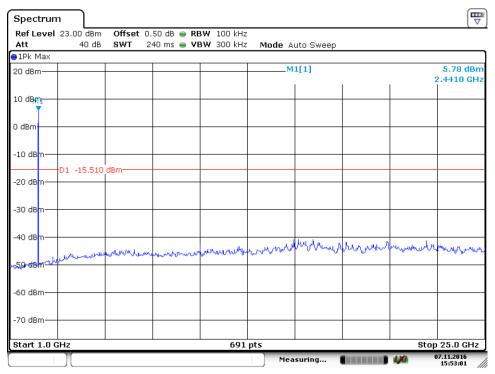


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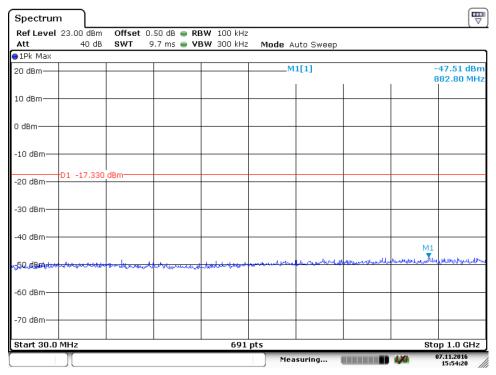


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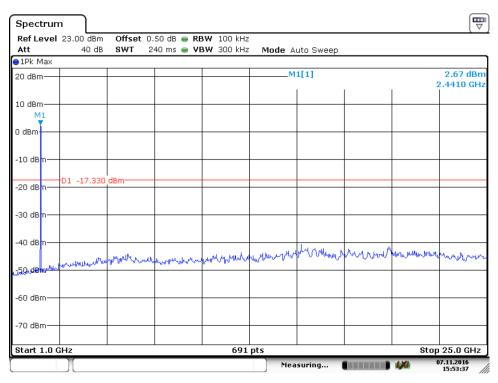
2437MHz



Spurious RF conducted emissions



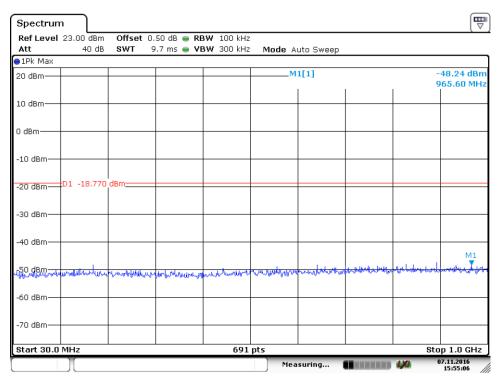
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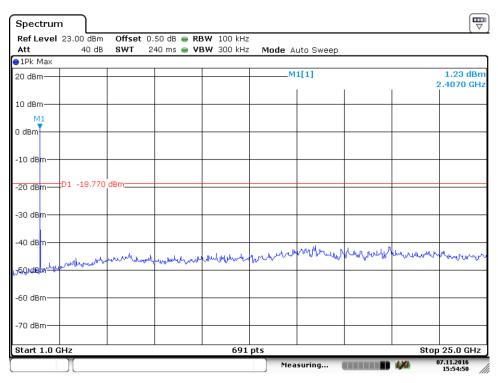
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802.11g



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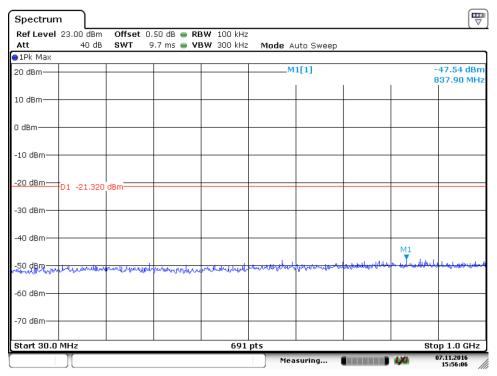


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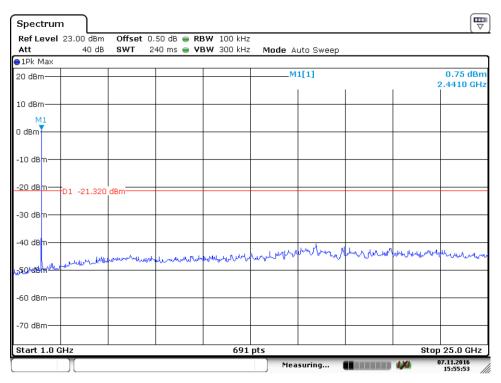
2412MHz



Spurious RF conducted emissions

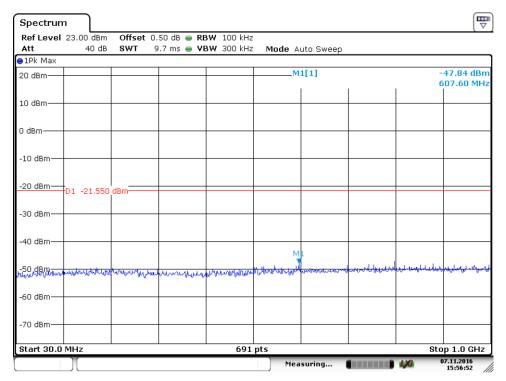


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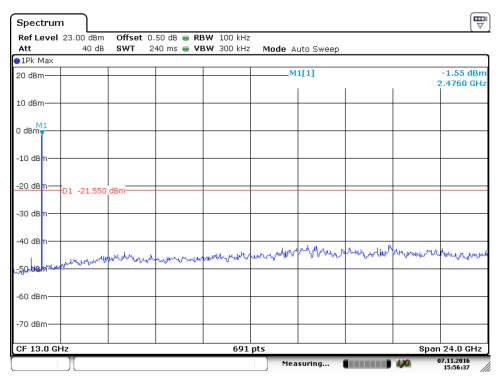


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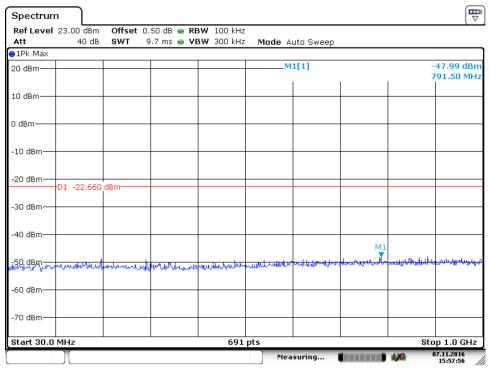
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2462MHz

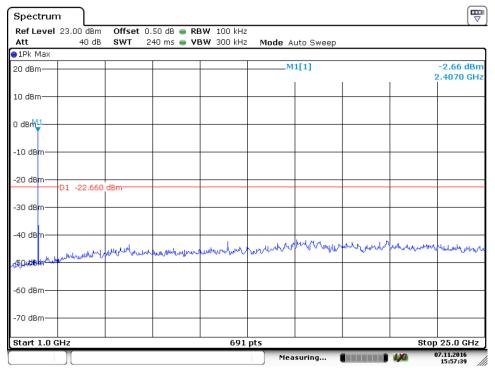


Spurious RF conducted emissions

802.11nHT20

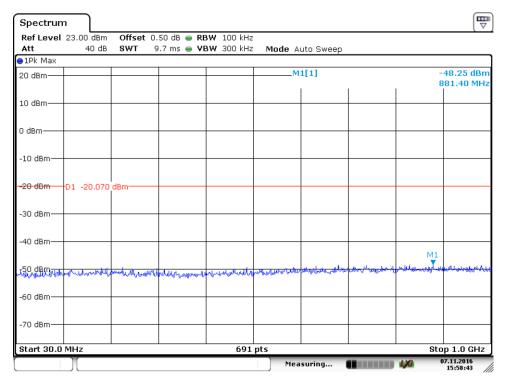


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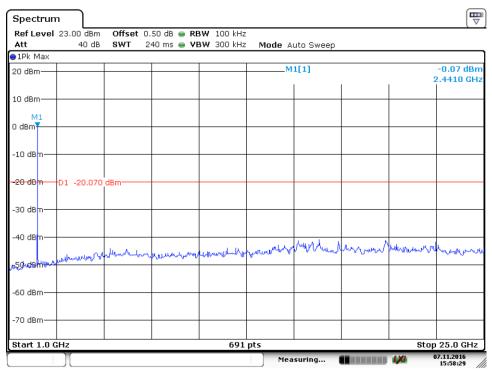


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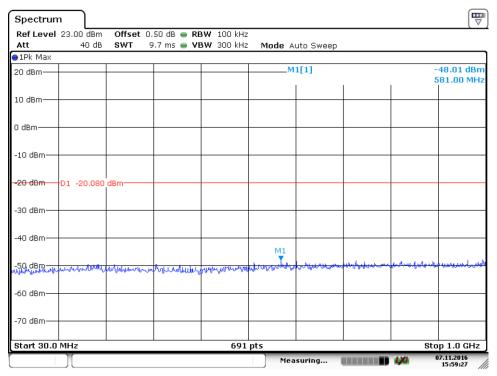


Date: 7.NOV.2016 15:58:29

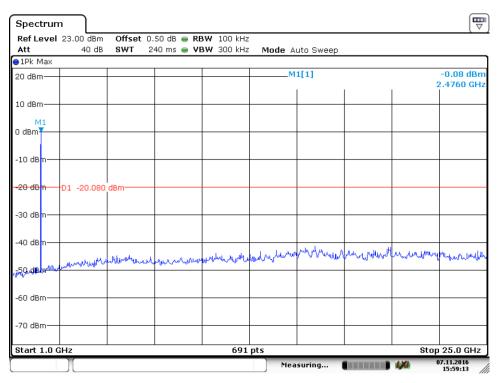
2437MHz



Spurious RF conducted emissions



Date: 7.NOV.2016 15:59:26



Date: 7.NOV.2016 15:59:13



9.6 Band edge

Test Method

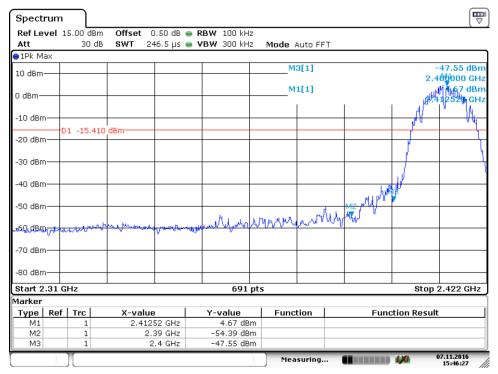
- 1 Use the following spectrum analyzer settings: Span = wide enough to capture the peak level of the in-band emission and all spurious RBW = 100 kHz, VBW ≥ RBW, Sweep = auto, Detector function = peak, Trace = max hold.
- 2 Allow the trace to stabilize, use the peak and delta measurement to record the result.
- 3 The level displayed must comply with the limit specified in this Section.

Limit

| Frequency Range MHz | Limit (dBc) |
|------------------------|-------------|
| 30-25000 | -20 |

Test result

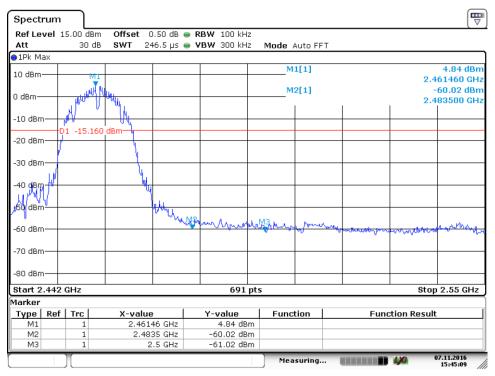
802.11b



Date: 7.NOV.2016 15:46:27



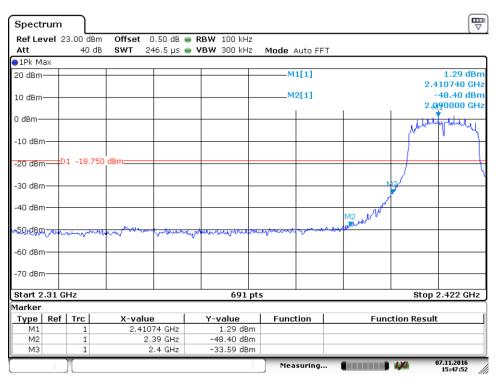
Band edge



Date: 7.NOV.2016 15:45:09

2462MHz

802.11g

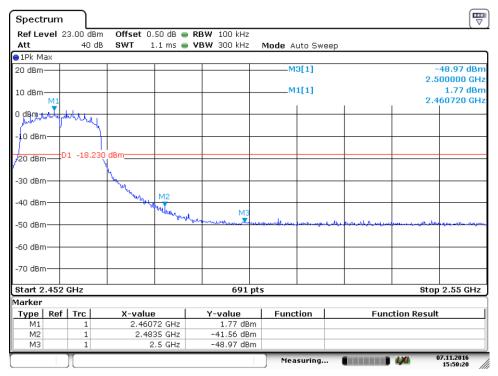


Date: 7.NOV.2016 15:47:52

2412MHz



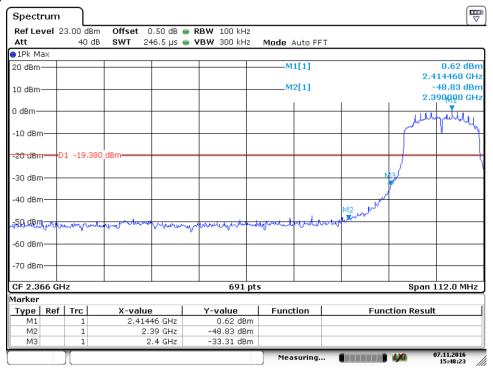
Band edge



Date: 7.NOV.2016 15:50:20

2462MHz

802.11nHT20

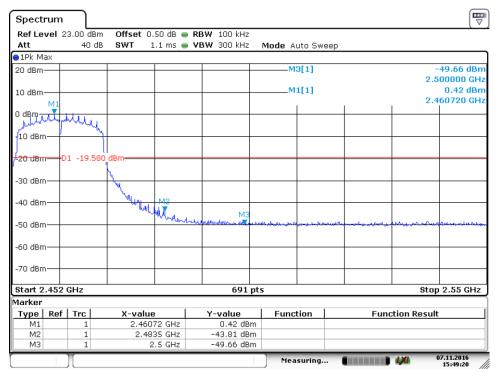


Date: 7.NOV.2016 15:48:23

2412MHz



Band edge



Date: 7.NOV.2016 15:49:20

2462MHz



9.7 Spurious radiated emissions for transmitter

Test Method

- 1: The EUT was place on a turn table which is 1.5m above ground plane for above 1GHz and 0.8m above ground for below 1GHz at 3meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- 2: The EUT was set 3 meters away from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
- 3: The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- 4: For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- 5: Use the following spectrum analyzer settings According to C63.10:

For Above 1GHz

Span = wide enough to capture the peak level of the in-band emission and all spurious RBW = 1MHz, VBW ≥ RBW for peak measurement and VBW = 10Hz for average measurement, Sweep = auto, Detector function = peak, Trace = max hold.

For Below 1GHz

Use the following spectrum analyzer settings:

Span = wide enough to capture the peak level of the in-band emission and all spurious RBW = 100 KHz, VBW ≥ RBW for peak measurement, Sweep = auto, Detector function = peak, Trace = max hold.

Note:

- 1: The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 KHz for Quasi-peak detection (QP) at frequency below 1GHz.
- 2: The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 3MHz for peak detection (PK) at frequency above 1GHz.
- 3: The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 3MHz for RMS Average ((duty cycle < 98%) for Average detection (AV) at frequency above 1GHz, then the measurement results was added to a correction factor (20log(1/duty cycle)).
- 4: The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 10Hz (duty cycle > 98%) for Average detection (AV) at frequency above 1GHz.



Limit

The radio emission outside the operating frequency band shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power. Radiated emissions which fall in the restricted bands, as defined in section15.205, must comply with the radiated emission limits specified in section 15.209.

| Frequency | Field Strength | Field Strength | Detector |
|------------|----------------|----------------|----------|
| MHz | uV/m | dBμV/m | |
| 30-88 | 100 | 40 | QP |
| 88-216 | 150 | 43.5 | QP |
| 216-960 | 200 | 46 | QP |
| 960-1000 | 500 | 54 | QP |
| Above 1000 | 500 | 54 | AV |
| Above 1000 | 5000 | 74 | PK |



Spurious radiated emissions for transmitter

According to C63.10, if the peak (or quasi-peak) measured value complies with the average limit, it is unnecessary to perform an average measurement, so AV emission value did not show in below table if the peak value complies with average limit.

Transmitting spurious emission test result as below:

802.11b 2412MHz (30MHz – 1GHz)

| Frequency | Emission Level | Polarization | Limit | Detector | Result |
|-----------|-------------------|--------------|--------|----------|--------|
| MHz | dBuV/m | | dBμV/m | | |
| 971.98 | 37.86 | Horizontal | 46.00 | QP | Pass |
| 971.98 | 41.12 | Horizontal | 46.00 | QP | Pass |
| 900.02 | 37.42 | Vertical | 46.00 | QP | Pass |

2412MHz (Above 1GHz)

| Frequency | Emission Level | Polarization | Limit | Detector | Result |
|-----------|-------------------|--------------|--------|----------|--------|
| MHz | dBuV/m | | dBμV/m | | |
| 3617.81 | 49.94 | Horizontal | 74.00 | PK | Pass |
| 3617.81 | 48.04 | Vertical | 74.00 | PK | Pass |

- (1) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20db below the permissible limits or the field strength is too small to be measured.
- (2) "*" means the emission(s) appear within the restrict bands shall follow the requirement of section 15.205.



2437MHz (30MHz – 1GHz)

| Frequency | Emission Level | Polarization | Limit | Detector | Result |
|-----------|-------------------|--------------|--------|----------|--------|
| MHz | dBuV/m | | dΒμV/m | | |
| | | Horizontal | | QP | Pass |
| | | Vertical | | QP | Pass |

2437MHz (Above 1GHz)

| Frequency | Emission Level | Polarization | Limit | Detector | Result |
|-----------|-------------------|--------------|--------|----------|--------|
| MHz | dBuV/m | | dBμV/m | | |
| 3655.31 | 49.46 | Horizontal | 74.00 | PK | Pass |
| 3855.31 | 49.95 | Vertical | 74.00 | PK | Pass |

Remark:

- (1) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20db below the permissible limits or the field strength is too small to be measured.
- (2) "*" means the emission(s) appear within the restrict bands shall follow the requirement of section 15.205.

2462MHz (30MHz - 1GHz)

| Frequency | Emission Level | Polarization | Limit | Detector | Result |
|-----------|-------------------|--------------|--------|----------|--------|
| MHz | dBuV/m | | dBμV/m | | |
| | | Horizontal | | QP | Pass |
| | | Vertical | | QP | Pass |

2462MHz (Above 1GHz)

| Frequency | Emission Level | Polarization | Limit | Detector | Result |
|-----------|-------------------|--------------|--------|----------|--------|
| MHz | dBuV/m | | dΒμV/m | | |
| 3692.81 | 50.97 | Horizontal | 74.00 | PK | Pass |
| 3692.81 | 49.68 | Vertical | 74.00 | PK | Pass |

- (1) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20db below the permissible limits or the field strength is too small to be measured.
- (2) "*" means the emission(s) appear within the restrict bands shall follow the requirement of section 15.205.



802.11g

2412MHz (30MHz – 1GHz)

| Frequency | Emission Level | Polarization | Limit | Detector | Result |
|-----------|-------------------|--------------|--------|----------|--------|
| MHz | dBuV/m | | dBμV/m | | |
| | | Horizontal | | QP | Pass |
| | | Vertical | | QP | Pass |

2412MHz (Above 1GHz)

| Frequency | Emission Level | Polarization | Limit | Detector | Result |
|-----------|-------------------|--------------|--------|----------|--------|
| MHz | dBuV/m | | dBμV/m | | |
| 3617.81 | 50.55 | Horizontal | 74.00 | PK | Pass |
| 3617.81 | 47.44 | Vertical | 74.00 | PK | Pass |

Remark:

- (1) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20db below the permissible limits or the field strength is too small to be measured.
- (2) "*" means the emission(s) appear within the restrict bands shall follow the requirement of section 15.205.

2437MHz (30MHz – 1GHz)

| Frequency | Emission Level | Polarization | Limit | Detector | Result |
|-----------|-------------------|--------------|--------|----------|--------|
| MHz | dBuV/m | | dBμV/m | | |
| | | Horizontal | | QP | Pass |
| | | Vertical | | QP | Pass |

2437MHz (Above 1GHz)

| Frequency | Emission Level | Polarization | Limit | Detector | Result |
|-----------|-------------------|--------------|--------|----------|--------|
| MHz | dBuV/m | | dBμV/m | | |
| 3655.31 | 49.10 | Horizontal | 74.00 | PK | Pass |
| 3655.31 | 48.83 | Vertical | 74.00 | PK | Pass |

- (1) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20db below the permissible limits or the field strength is too small to be measured.
- (2) "*" means the emission(s) appear within the restrict bands shall follow the requirement of section 15.205.



2462MHz (30MHz – 1GHz)

| Frequency | Emission Level | Polarization | Limit | Detector | Result |
|-----------|-------------------|--------------|--------|----------|--------|
| MHz | dBuV/m | | dΒμV/m | | |
| | | Horizontal | | QP | Pass |
| | | Vertical | | QP | Pass |

2462MHz (Above 1GHz)

| Frequency | Emission Level | Polarization | Limit | Detector | Result | |
|-----------|-------------------|--------------|--------|----------|--------|--|
| MHz | dBuV/m | | dΒμV/m | | | |
| 3692.81 | 50.58 | Horizontal | 74.00 | PK | Pass | |
| 3692.81 | 48.43 | Vertical | 74.00 | PK | Pass | |

Remark:

- (1) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20db below the permissible limits or the field strength is too small to be measured.
- (2) "*" means the emission(s) appear within the restrict bands shall follow the requirement of section 15.205.

802.11nHT20

2412MHz (30MHz – 1GHz)

| Frequency | Emission Level | Polarization Limit | | Detector | Result |
|-----------|-------------------|--------------------|--------|----------|--------|
| MHz | dBuV/m | | dBμV/m | | |
| | | Horizontal | | QP | Pass |
| | | Vertical | | QP | Pass |

2412MHz (Above 1GHz)

| Frequency | Emission Level | Polarization Limit | | Detector | Result | |
|-----------|-------------------|--------------------|--------|----------|--------|--|
| MHz | dBuV/m | | dBμV/m | | | |
| 3617.81 | 49.37 | Horizontal | 74.00 | PK | Pass | |
| 3617.81 | 48.13 | Vertical | 74.00 | PK | Pass | |

- (1) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20db below the permissible limits or the field strength is too small to be measured.
- (2) "*" means the emission(s) appear within the restrict bands shall follow the requirement of section 15.205.



2437MHz (30MHz – 1GHz)

| Frequency | Emission Level | Polarization Limit | | Detector | Result |
|-----------|-------------------|--------------------|--------|----------|--------|
| MHz | dBuV/m | | dΒμV/m | | |
| | | Horizontal | | QP | Pass |
| | | Vertical | | QP | Pass |

2437MHz (Above 1GHz)

| Frequency | Emission Level | Polarization | Limit | Detector | Result | |
|-----------|-------------------|--------------|--------|----------|--------|--|
| MHz | dBuV/m | | dΒμV/m | | | |
| 3655.31 | 50.78 | Horizontal | 74.00 | PK | Pass | |
| 3655.31 | 50.41 | Vertical | 54.00 | AV | Pass | |

Remark:

- (1) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20db below the permissible limits or the field strength is too small to be measured.
- (2) "*" means the emission(s) appear within the restrict bands shall follow the requirement of section 15.205.

2462MHz (30MHz – 1GHz)

| Frequency | Emission Level | Polarization Limit | | Detector | Result |
|-----------|-------------------|--------------------|--------|----------|--------|
| MHz | dBuV/m | | dBμV/m | | |
| | | Horizontal | | QP | Pass |
| | | Vertical | | QP | Pass |

2462MHz (Above 1GHz)

| Frequency | Emission Level | Polarization | Limit | Detector | Result |
|-----------|-------------------|--------------|--------|----------|--------|
| MHz | dBuV/m | | dΒμV/m | | |
| 3692.81 | 50.98 | Horizontal | 74.00 | PK | Pass |
| 3692.81 | 48.96 | Vertical | 54.00 | AV | Pass |

- (1) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20db below the permissible limits or the field strength is too small to be measured.
- (2) "*" means the emission(s) appear within the restrict bands shall follow the requirement of section 15.205.



10 Test Equipment List

List of Test Instruments

| DESCRIPTION | MANUFACTURER | MODEL NO. | SERIAL NO. | CAL. DUE DATE |
|--|-----------------|--------------------|------------|---------------|
| Signal Analyzer | Rohde & Schwarz | FSV40 | 101030 | 2017-7-15 |
| EMI Test Receiver | Rohde & Schwarz | ESR 26 | 101269 | 2017-7-15 |
| Trilog Super Broadband Test Antenna | Schwarzbeck | VULB 9163 | 707 | 2017-8-3 |
| Horn Antenna | Rohde & Schwarz | HF907 | 102294 | 2017-7-15 |
| Pre-amplifier | Rohde & Schwarz | SCU 18 | 102230 | 2017-7-15 |
| 3m Semi-anechoic chamber | TDK | 9X6X6 | | 2019-5-29 |
| EMI Test Receiver | Rohde & Schwarz | ESR 26 | 101269 | 2017-7-15 |
| Trilog Super Broadband Test Antenna | Schwarzbeck | VULB 9163 | 707 | 2017-8-3 |
| Horn Antenna | Rohde & Schwarz | HF907 | 102294 | 2017-7-15 |
| EMI Test Receiver | Rohde & Schwarz | ESR 3 | 101782 | 2017-7-15 |
| LISN | Rohde & Schwarz | ENV4200 | 100249 | 2017-7-15 |
| LISN | Rohde & Schwarz | ENV216 | 100326 | 2017-7-15 |
| ISN | Rohde & Schwarz | ENY81 | 100177 | 2017-7-15 |
| ISN | Rohde & Schwarz | ENY81-CA6 | 101664 | 2017-7-15 |
| High Voltage Probe | Rohde & Schwarz | TK9420(VT94 20) | 9420-58 | 2017-7-15 |
| RF Current Probe | Rohde & Schwarz | EZ-17 | 100816 | 2017-7-15 |

C - Conducted RF tests

- Conducted peak output power
- 6dB bandwidth
- Power spectral density*
- Spurious RF conducted emissions
- Band edge



11 System Measurement Uncertainty

For a 95% confidence level, the measurement expanded uncertainties for defined systems, in accordance with the recommendations of ISO 17025 were:

System Measurement Uncertainty

| System Measurement Uncertainty | | | | | | |
|--|----------------------|--|--|--|--|--|
| Items | Extended Uncertainty | | | | | |
| Uncertainty for Radiated Emission in 3m chamber | Horizontal: 4.83dB; | | | | | |
| 30MHz-1000MHz | Vertical: 4.91dB; | | | | | |
| Uncertainty for Radiated Emission in 3m chamber | Horizontal: 4.89dB; | | | | | |
| 1000MHz-18000MHz | Vertical: 4.88dB; | | | | | |
| Uncertainty for Conducted RF test | 2.04dB | | | | | |
| Uncertainty for Conducted Emission 150kHz-30MHz (for | 3.50dB | | | | | |
| test using AMN ENV216 or ENV4200) | | | | | | |