

FCC REPORT

(WIFI)

Applicant: 8devices

Address of Applicant: Gedimino 47, Kaunas, LT-44242, Lithuania

Equipment Under Test (EUT)

Product Name: Broadband Digital Transmission System

Model No.: Rambutan

FCC ID: Z9W-RMB

Applicable standards: FCC CFR Title 47 Part 15 Subpart C Section 15.247

Date of sample receipt: 24 Nov., 2016

Date of Test: 24 Nov., to 29 Dec., 2016

Date of report issued: 29 Dec., 2016

Test Result: PASS*

* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:



Bruce Zhang
Laboratory Manager

This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product and does not permit the use of the CCIS product certification mark. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

This report may only be reproduced and distributed in full. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards.

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2 Version

| Version No. | Date | Description |
|-------------|---------------|--|
| 00 | 29 Dec., 2016 | <i>This report was amended on FCC ID: Z9W-RMB follow FCC Class II Permissive Change.</i> |
| | | |
| | | |
| | | |
| | | |

Tested by:



Date:

29 Dec., 2016

Test Engineer

Reviewed by:



Date:

29 Dec., 2016

Project Engineer

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4 Test Summary

| Test Item | Section in CFR 47 | Result |
|--|-------------------|--------|
| Antenna requirement | 15.203/15.247 (c) | Pass* |
| AC Power Line Conducted Emission | 15.207 | Pass* |
| Conducted Peak Output Power | 15.247 (b)(3) | Pass |
| 6dB Emission Bandwidth 99% Occupied Bandwidth | 15.247 (a)(2) | Pass* |
| Power Spectral Density | 15.247 (e) | Pass* |
| Band Edge | 15.247(d) | Pass |
| Spurious Emission | 15.205/15.209 | Pass |

Pass: The EUT complies with the essential requirements in the standard.

Pass: Please refer to FCC ID: Z9W-RMB.*

5 General Information

5.1 Client Information

| | |
|-----------------------------------|--|
| Applicant: | 8devices |
| Address of Applicant: | Gedimino 47, Kaunas, LT-44242, Lithuania |
| Manufacturer/ Factory: | 8devices |
| Address of Manufacturer/ Factory: | Gedimino 47, Kaunas, LT-44242, Lithuania |

5.2 General Description of E.U.T.

| | |
|--|--|
| Product Name: | Broadband Digital Transmission System |
| Model No.: | Rambutan |
| Operation Frequency: | 2412MHz~2462MHz (802.11b/802.11g/802.11n(H20)) 2422MHz~2452MHz (802.11n(H40)) |
| Channel numbers: | 11 for 802.11b/802.11g/802.11(H20) 7 for 802.11n(H40) |
| Channel separation: | 5MHz |
| Modulation technology: (IEEE 802.11b) | Direct Sequence Spread Spectrum (DSSS) |
| Modulation technology: (IEEE 802.11g/802.11n) | Orthogonal Frequency Division Multiplexing(OFDM) |
| Data speed (IEEE 802.11b): | 1Mbps, 2Mbps, 5.5Mbps, 11Mbps |
| Data speed (IEEE 802.11g): | 6Mbps, 9Mbps, 12Mbps, 18Mbps, 24Mbps, 36Mbps, 48Mbps,54Mbps |
| Data speed (IEEE 802.11n): | Up to 150Mbps |
| Antenna Type: | Antenna 0: Ceramic Antenna, Antenna 1: External Antenna |
| Antenna gain: | Antenna 0: 3 dBi, Antenna 1: 10 dBi |
| Power supply: | DC 5V |
| Remark: | 802.11b/g/n all support 2x2 MIMO |

| Operation Frequency each of channel For 802.11b/g/n(H20) | | | | | | | |
|--|-----------|---------|-----------|---------|-----------|---------|-----------|
| Channel | Frequency | Channel | Frequency | Channel | Frequency | Channel | Frequency |
| 1 | 2412MHz | 4 | 2427MHz | 7 | 2442MHz | 10 | 2457MHz |
| 2 | 2417MHz | 5 | 2432MHz | 8 | 2447MHz | 11 | 2462MHz |
| 3 | 2422MHz | 6 | 2437MHz | 9 | 2452MHz | | |

| Operation Frequency each of channel For 802.11n(H40) | | | | | | | |
|--|-----------|---------|-----------|---------|-----------|---------|-----------|
| Channel | Frequency | Channel | Frequency | Channel | Frequency | Channel | Frequency |
| | | 4 | 2427MHz | 7 | 2442MHz | | |
| | | 5 | 2432MHz | 8 | 2447MHz | | |
| 3 | 2422MHz | 6 | 2437MHz | 9 | 2452MHz | | |

Note:

In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

802.11b/802.11g/802.11n (H20)

| Channel | Frequency |
|---------------------|-----------|
| The lowest channel | 2412MHz |
| The middle channel | 2437MHz |
| The Highest channel | 2462MHz |

802.11n (H40)

| Channel | Frequency |
|---------------------|-----------|
| The lowest channel | 2422MHz |
| The middle channel | 2437MHz |
| The Highest channel | 2452MHz |

5.3 Test environment and mode

| | |
|---|---|
| Operating Environment: | |
| Temperature: | 24.0 °C |
| Humidity: | 54 % RH |
| Atmospheric Pressure: | 1010 mbar |
| Test mode: | |
| Operation mode | Keep the EUT in continuous transmitting with modulation |
| Remark | During the test, pre-scan the Antenna 0 and Antenna 1, and found the Antenna 1 is the worst case, so only shows the data of Antenna 1 in this report. |
| <p>The sample was placed 0.8m(below 1GHz)/1.5m(above 1GHz) above the ground plane of 3m chamber. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating the turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The emissions worst-case are shown in Test Results of the following pages.</p> | |

| | |
|---|-----------|
| We have verified the construction and function in typical operation. All the test modes were carried out with the EUT in transmitting operation, which was shown in this test report and defined as follows: | |
| Per-scan all kind of data rate in lowest channel, and found the follow list which it was worst case. | |
| Mode | Data rate |
| 802.11b | 1Mbps |
| 802.11g | 6Mbps |
| 802.11n(H20) | 6.5Mbps |
| 802.11n(H40) | 13.5Mbps |
| Final Test Mode: | |
| According to ANSI C63.4 standards, the test results are both the “worst case” and “worst setup” 1Mbps for 802.11b, 6Mbps for 802.11g, 6.5Mbps for 802.11n(H20) and 13.5 Mbps for 802.11n(H40). Duty cycle setting during the transmission is 100% with maximum power setting for all modulations. | |

5.4 Laboratory Facility

| |
|---|
| <p>The test facility is recognized, certified, or accredited by the following organizations:</p> <ul style="list-style-type: none"> ● FCC - Registration No.: 817957 Shenzhen Zhongjian Nanfang Testing Co., Ltd. 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 out files. Registration 817957, February 27, 2012. ● IC - Registration No.: 10106A-1 The 3m Semi-anechoic chamber of Shenzhen Zhongjian Nanfang Testing Co., Ltd. has been Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 10106A-1. ● CNAS - Registration No.: CNAS L6048 Shenzhen Zhongjian Nanfang Testing Co., Ltd. is accredited to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration laboratories for the competence of testing. The Registration No. is CNAS L6048. |
|---|

5.5 Measurement Uncertainty

| Items | Expanded Uncertainty (Confidence of 95%) |
|-------------------------------------|--|
| Conducted Emission (9kHz ~ 30MHz) | 2.14 dB (k=2) |
| Radiated Emission (9kHz ~ 30MHz) | 4.24 dB (k=2) |
| Radiated Emission (30MHz ~ 1000MHz) | 4.35 dB (k=2) |
| Radiated Emission (1GHz ~ 18GHz) | 4.44 dB (k=2) |
| Radiated Emission (18GHz ~ 26.5GHz) | 4.56 dB (k=2) |

5.6 Laboratory Location

| |
|--|
| Shenzhen Zhongjian Nanfang Testing Co., Ltd. Address: No. B-C, 1/F., Building 2, Laodong No.2 Industrial Park, Xixiang Road, Bao'an District, Shenzhen, Guangdong, China Tel: +86-755-23118282 Fax: +86-755-23116366 |
|--|

5.7 Description of Support Units

| Manufacturer | Description | Model | Serial Number | FCC ID/DoC |
|--------------|-------------|-------------|---------------|------------|
| DELL | PC | OPTIPLEX745 | N/A | DoC |
| DELL | MONITOR | E178FPC | N/A | DoC |
| DELL | KEYBOARD | SK-8115 | N/A | DoC |
| DELL | MOUSE | MOC5UO | N/A | DoC |



5.8 Test Instruments list

| Radiated Emission: | | | | | | |
|--------------------|------------------------------|-----------------------------------|-----------------------------|---------------|----------------------|--------------------------|
| Item | Test Equipment | Manufacturer | Model No. | Inventory No. | Cal. Date (mm-dd-yy) | Cal. Due date (mm-dd-yy) |
| 1 | 3m SAC | SAEMC | 9(L)*6(W)* 6(H) | CCIS0001 | 08-23-2014 | 08-22-2017 |
| 2 | BiConiLog Antenna | SCHWARZBECK | VULB9163 | CCIS0005 | 03-25-2016 | 03-25-2017 |
| 3 | Horn Antenna | SCHWARZBECK | BBHA9120D | CCIS0006 | 03-25-2016 | 03-25-2017 |
| 4 | Pre-amplifier (10kHz-1.3GHz) | HP | 8447D | CCIS0003 | 04-01-2016 | 03-31-2017 |
| 5 | Pre-amplifier (1GHz-18GHz) | Compliance Direction Systems Inc. | PAP-1G18 | CCIS0011 | 04-01-2016 | 03-31-2017 |
| 6 | Pre-amplifier (18-26GHz) | Rohde & Schwarz | AFS33-18002 650-30-8P-44 | GTS218 | 04-01-2016 | 03-31-2017 |
| 7 | Horn Antenna | ETS-LINDGREN | 3160 | GTS217 | 04-01-2016 | 03-31-2017 |
| 8 | Spectrum analyzer 9k-30GHz | Rohde & Schwarz | FSP30 | CCIS0023 | 03-28-2016 | 03-28-2017 |
| 9 | EMI Test Receiver | Rohde & Schwarz | ESRP7 | CCIS0167 | 03-28-2016 | 03-28-2017 |
| 10 | Loop antenna | Laplace instrument | RF300 | EMC0701 | 04-01-2016 | 03-31-2017 |
| 11 | EMI Test Software | AUDIX | E3 | N/A | N/A | N/A |

| Conducted Emission: | | | | | | |
|---------------------|-------------------|--------------------|-----------------------|---------------|----------------------|--------------------------|
| Item | Test Equipment | Manufacturer | Model No. | Inventory No. | Cal. Date (mm-dd-yy) | Cal. Due date (mm-dd-yy) |
| 1 | Shielding Room | ZhongShuo Electron | 11.0(L)x4.0(W)x3.0(H) | CCIS0061 | 08-23-2014 | 08-22-2017 |
| 2 | EMI Test Receiver | Rohde & Schwarz | ESCI | CCIS0002 | 03-24-2016 | 03-24-2017 |
| 3 | LISN | CHASE | MN2050D | CCIS0074 | 03-26-2016 | 03-26-2017 |
| 4 | Coaxial Cable | CCIS | N/A | CCIS0086 | 04-01-2016 | 03-31-2017 |
| 5 | EMI Test Software | AUDIX | E3 | N/A | N/A | N/A |

6 Test results and Measurement Data

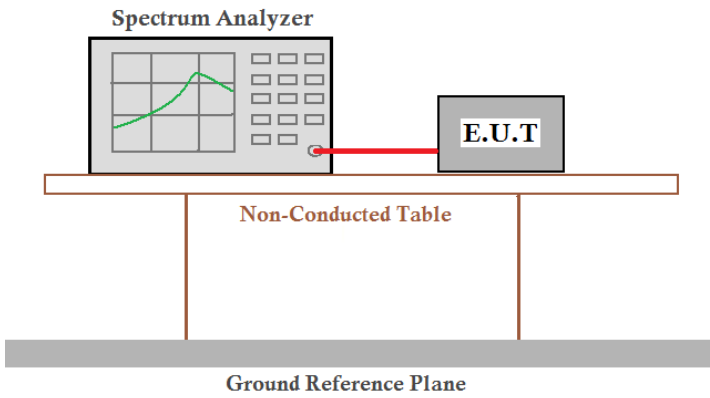
6.1 Antenna requirement:

| Standard requirement: | FCC Part 15 C Section 15.203 /247(c) | | | | | | | | | | |
|---|--------------------------------------|--------------------|-------------|--------------|--------------------|-----------|-----------------|---|-----------|--------------|----|
| <p><i>15.203 requirement:</i> <i>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. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.</i></p> <p><i>15.247(c) (1)(i) requirement:</i> <i>(i) Systems operating in the 2400-2483.5 MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6dBi.</i></p> | | | | | | | | | | | |
| E.U.T Antenna: | | | | | | | | | | | |
| <p><i>The product is a professionally installed device which has two types of antennas for the application. The antennas information as below table:</i></p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Antenna No.</th> <th>Antenna Type</th> <th>Antenna Gain (dBi)</th> </tr> </thead> <tbody> <tr> <td>Antenna 0</td> <td>Ceramic Antenna</td> <td>3</td> </tr> <tr> <td>Antenna 1</td> <td>Omni Antenna</td> <td>10</td> </tr> </tbody> </table> <p><i>According to above information, the antennas meet the requirements of this section</i></p> <p style="text-align: center;">Antenna 0: Antenna 1:</p> <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;">  </div> <div style="text-align: center;">  </div> </div> | | | Antenna No. | Antenna Type | Antenna Gain (dBi) | Antenna 0 | Ceramic Antenna | 3 | Antenna 1 | Omni Antenna | 10 |
| Antenna No. | Antenna Type | Antenna Gain (dBi) | | | | | | | | | |
| Antenna 0 | Ceramic Antenna | 3 | | | | | | | | | |
| Antenna 1 | Omni Antenna | 10 | | | | | | | | | |

6.2 Conducted Emission

| | | | |
|-----------------------|---|--------------|-----------|
| Test Requirement: | FCC Part 15 C Section 15.207 | | |
| Test Method: | ANSI C63.4: 2014 | | |
| Test Frequency Range: | 150 kHz to 30 MHz | | |
| Class / Severity: | Class B | | |
| Receiver setup: | RBW=9 kHz, VBW=30 kHz | | |
| Limit: | Frequency range (MHz) | Limit (dBUV) | |
| | | Quasi-peak | Average |
| | 0.15-0.5 | 66 to 56* | 56 to 46* |
| | 0.5-5 | 56 | 46 |
| | 5-30 | 60 | 50 |
| | * Decreases with the logarithm of the frequency. | | |
| Test procedure | <ol style="list-style-type: none"> 1. The E.U.T and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.), which provides a 50ohm/50uH coupling impedance for the measuring equipment. 2. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs). 3. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4: 2014 on conducted measurement. | | |
| Test setup: | <p><i>Remark</i> <i>E.U.T: Equipment Under Test</i> <i>LISN: Line Impedance Stabilization Network</i> <i>Test table height=0.8m</i></p> | | |
| Test Instruments: | Refer to section 5.8 for details | | |
| Test mode: | Refer to section 5.3 for details | | |
| Test results: | Refer to FCC ID:Z9W-RMB | | |

6.3 Conducted Output Power

| | |
|-------------------|---|
| Test Requirement: | FCC Part 15 C Section 15.247 (b)(3) |
| Test Method: | ANSI C63.10:2013 and KDB558074v03r05 section 9.2.2.2 |
| Limit: | 30dBm |
| Test setup: |  <p>The diagram illustrates the test setup. A Spectrum Analyzer is connected to an E.U.T. (Equipment Under Test) via a red cable. Both are placed on a Non-Conducted Table, which is supported by a Ground Reference Plane.</p> |
| Test Instruments: | Refer to section 5.8 for details |
| Test mode: | Refer to section 5.3 for details |
| Test results: | Passed |

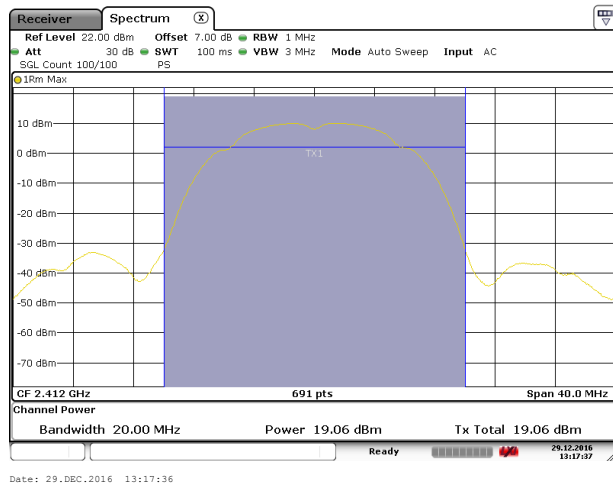
Measurement Data:

| Mode | Test CH | Ant. Port | Conducted Output power (dBm) | Total power (dBm) | Limit (dBm) | Result |
|--------------|---------|-----------|------------------------------|-------------------|-------------|--------|
| 802.11b | Lowest | TX0 | 19.06 | 21.74 | 26.00 | Pass |
| | | TX1 | 18.37 | | | |
| | Middle | TX0 | 19.39 | 22.36 | 26.00 | Pass |
| | | TX1 | 19.30 | | | |
| | Highest | TX0 | 19.11 | 22.39 | 26.00 | Pass |
| | | TX1 | 19.63 | | | |
| 802.11g | Lowest | TX0 | 17.24 | 19.76 | 26.00 | Pass |
| | | TX1 | 16.19 | | | |
| | Middle | TX0 | 18.98 | 21.91 | 26.00 | Pass |
| | | TX1 | 18.81 | | | |
| | Highest | TX0 | 16.53 | 19.56 | 26.00 | Pass |
| | | TX1 | 16.57 | | | |
| 802.11n(H20) | Lowest | TX0 | 16.31 | 19.24 | 26.00 | Pass |
| | | TX1 | 16.15 | | | |
| | Middle | TX0 | 18.43 | 21.88 | 26.00 | Pass |
| | | TX1 | 19.26 | | | |
| | Highest | TX0 | 16.48 | 19.30 | 26.00 | Pass |
| | | TX1 | 16.10 | | | |
| 802.11n(H40) | Lowest | TX0 | 16.99 | 19.84 | 26.00 | Pass |
| | | TX1 | 16.67 | | | |
| | Middle | TX0 | 18.86 | 22.01 | 26.00 | Pass |
| | | TX1 | 19.14 | | | |
| | Highest | TX0 | 16.12 | 19.32 | 26.00 | Pass |
| | | TX1 | 16.49 | | | |

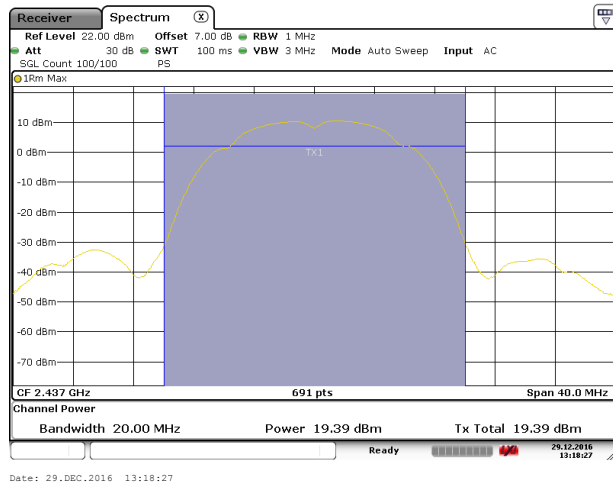
Note: For the maximum antenna gain is 10 dBi, so the limit is 26 dBm.

Test plot as follows:
TX0

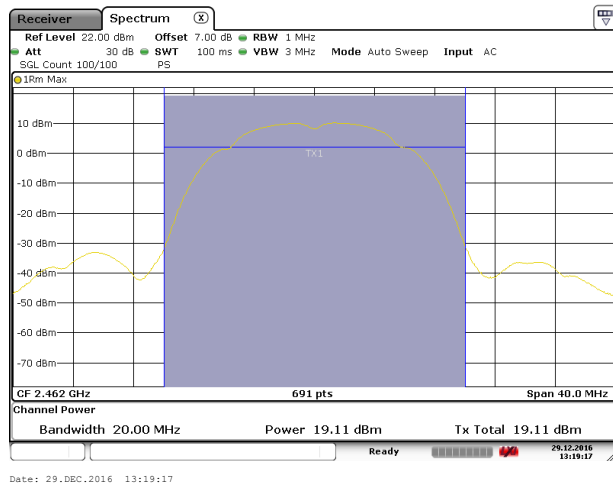
Test mode: 802.11b



Lowest channel

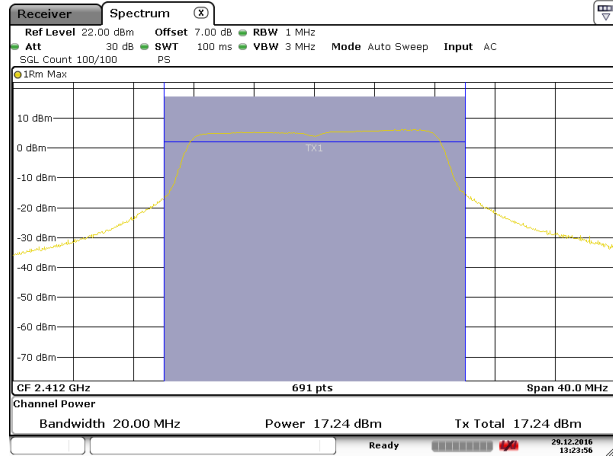


Middle channel



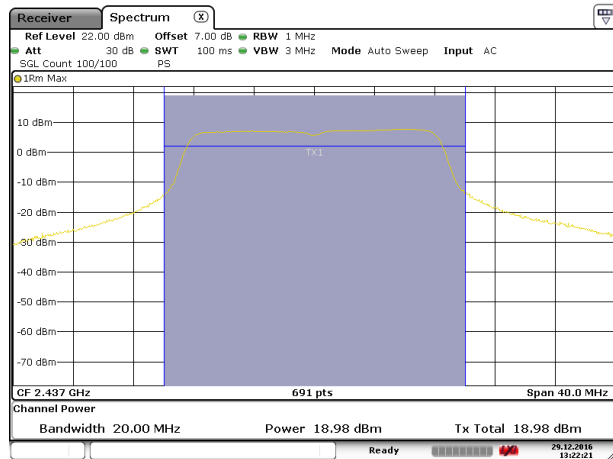
Highest channel

Test mode: 802.11g



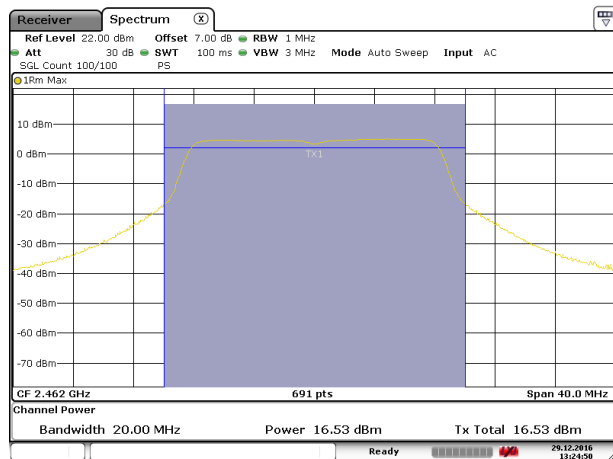
Date: 29. DEC. 2016 13:23:56

Lowest channel



Date: 29. DEC. 2016 13:22:20

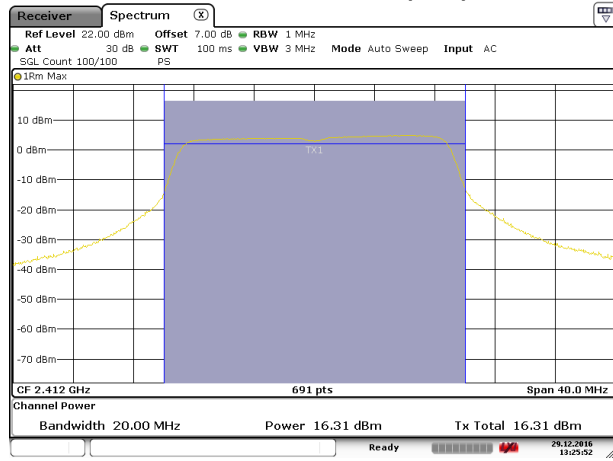
Middle channel



Date: 29. DEC. 2016 13:24:50

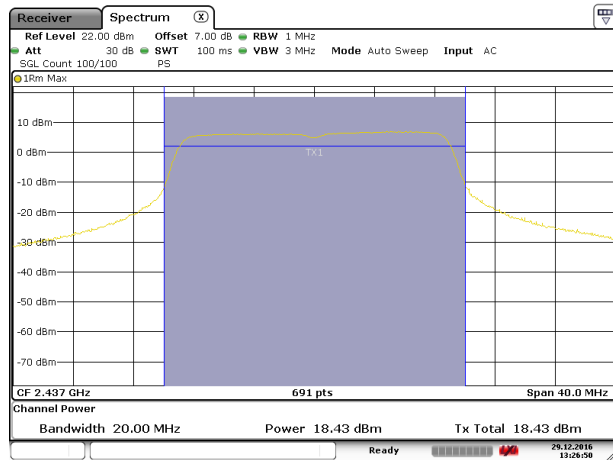
Highest channel

Test mode: 802.11n(H20)



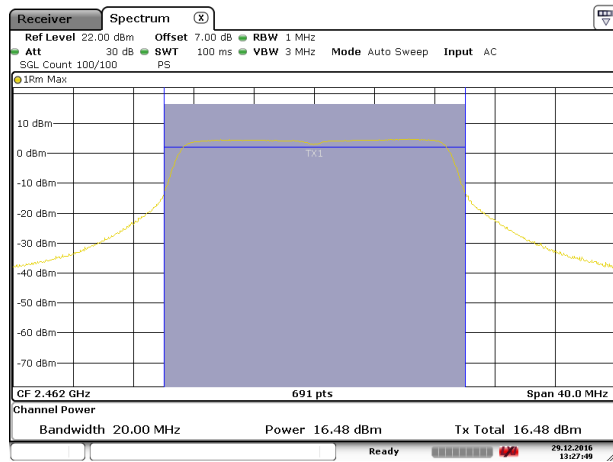
Date: 29. DEC. 2016 13:25:52

Lowest channel



Date: 29. DEC. 2016 13:26:49

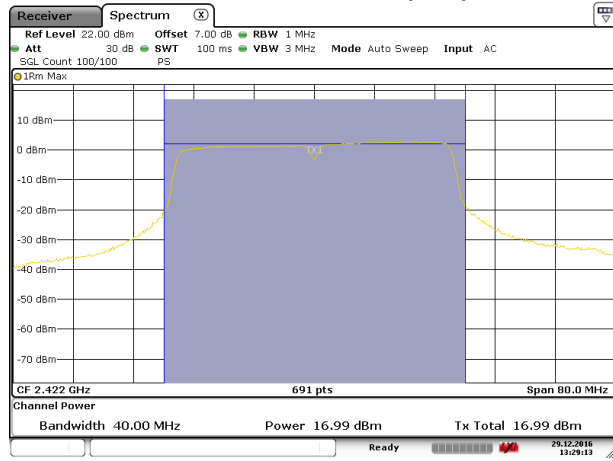
Middle channel



Date: 29. DEC. 2016 13:27:48

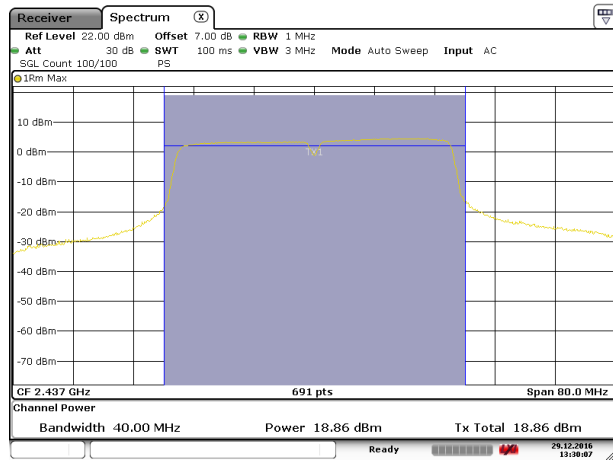
Highest channel

Test mode: 802.11n(H40)



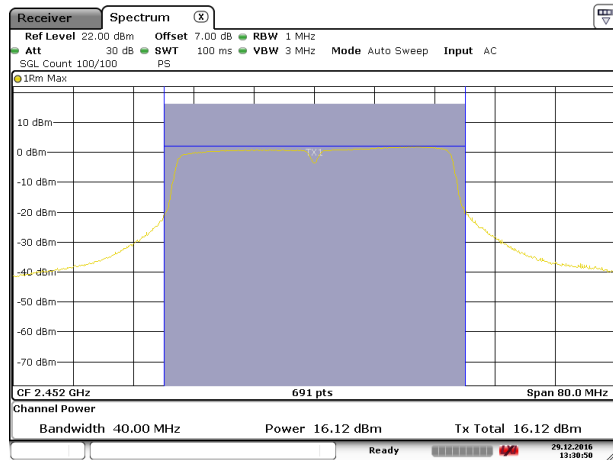
Date: 29.DEC.2016 13:29:12

Lowest channel



Date: 29.DEC.2016 13:30:07

Middle channel

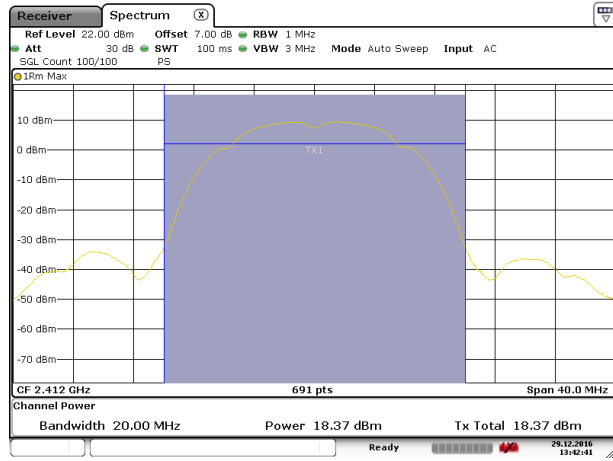


Date: 29.DEC.2016 13:30:50

Highest channel

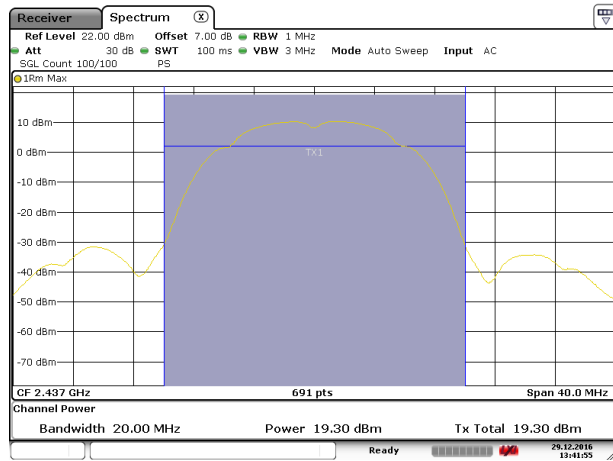
TX1

Test mode: 802.11b



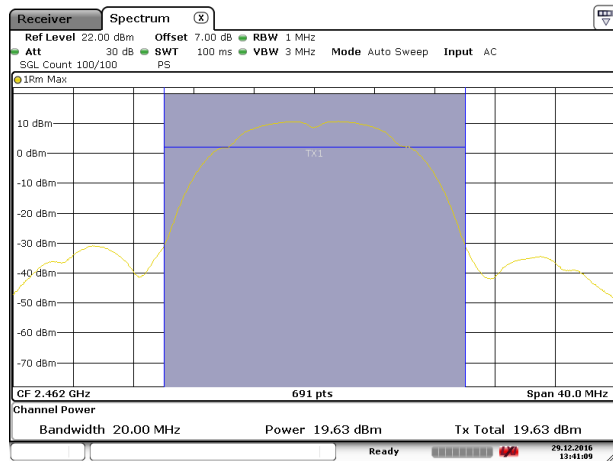
Date: 29.DEC.2016 13:42:41

Lowest channel



Date: 29.DEC.2016 13:41:55

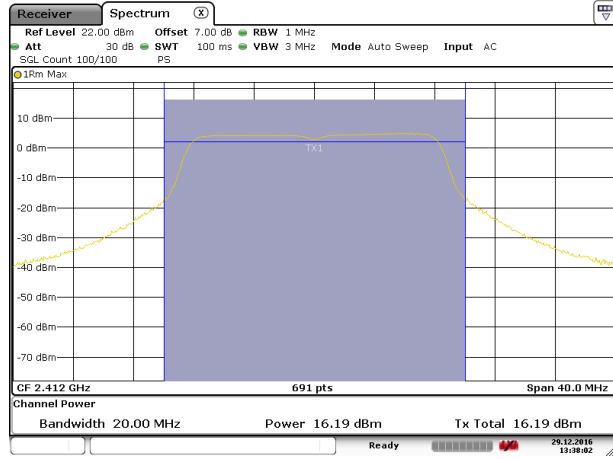
Middle channel



Date: 29.DEC.2016 13:41:09

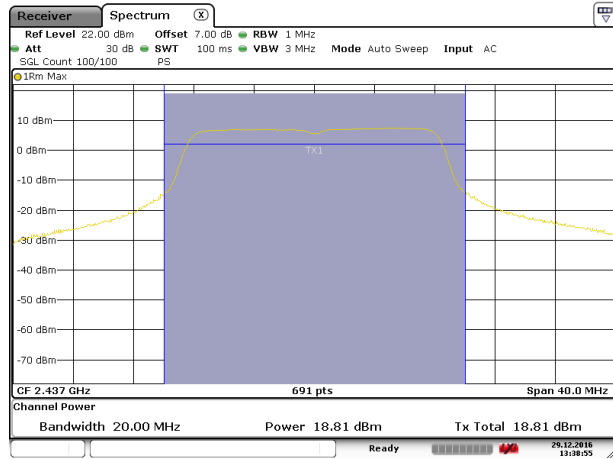
Highest channel

Test mode: 802.11g



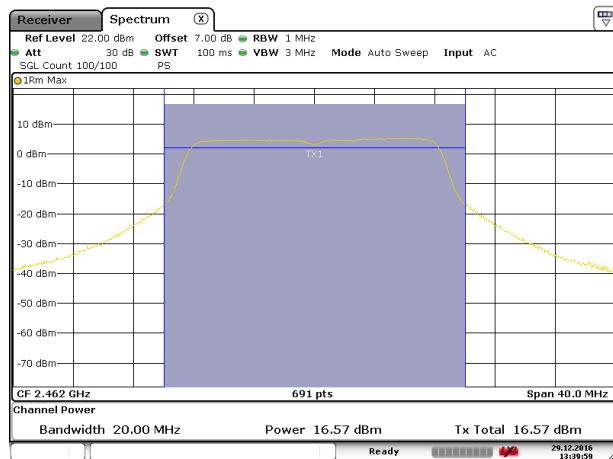
Date: 29. DEC. 2016 13:38:02

Lowest channel



Date: 29. DEC. 2016 13:38:54

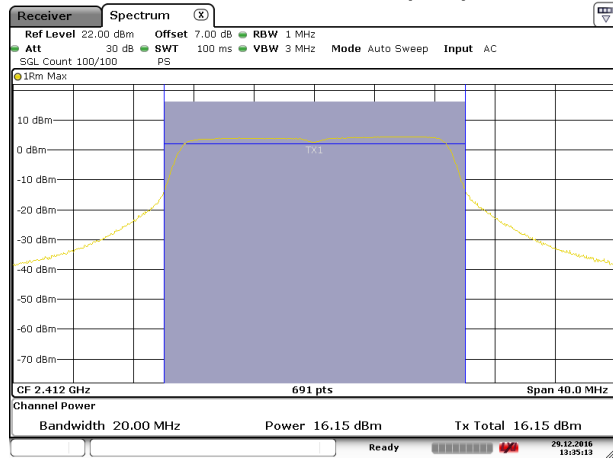
Middle channel



Date: 29. DEC. 2016 13:39:59

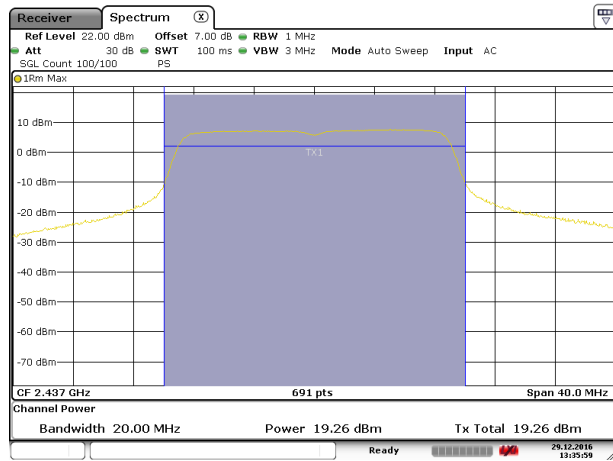
Highest channel

Test mode: 802.11n(H20)



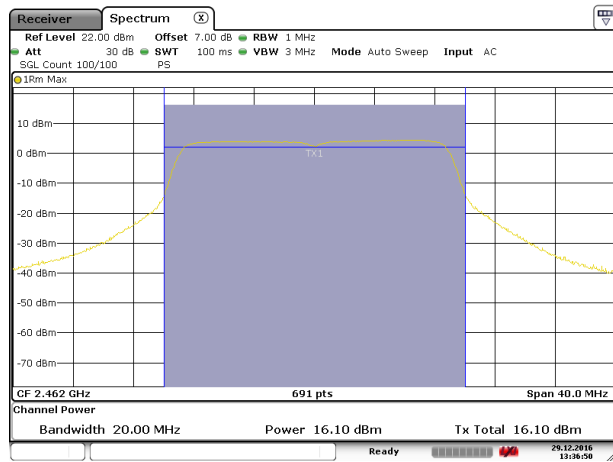
Date: 29. DEC. 2016 13:35:13

Lowest channel



Date: 29. DEC. 2016 13:35:59

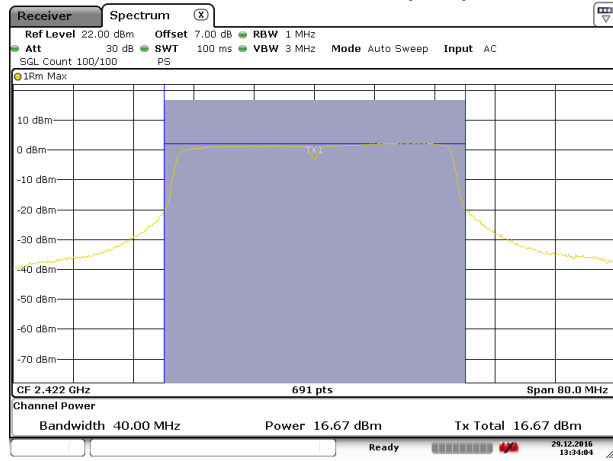
Middle channel



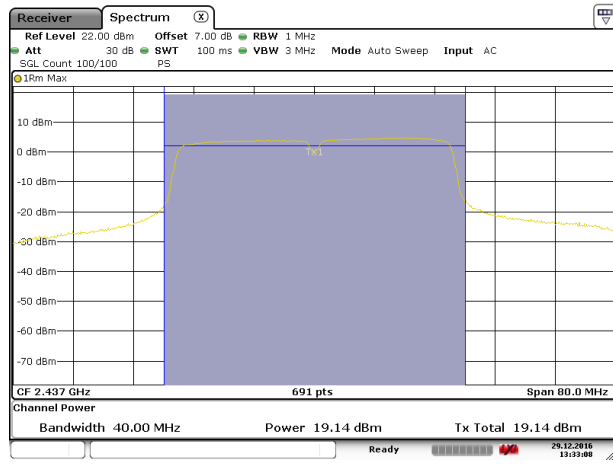
Date: 29. DEC. 2016 13:36:58

Highest channel

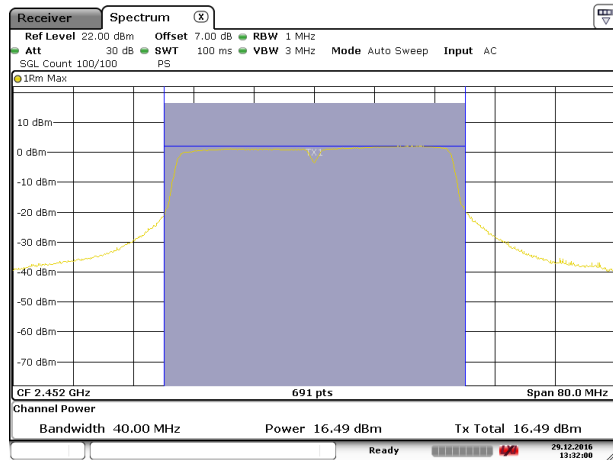
Test mode: 802.11n(H40)



Lowest channel

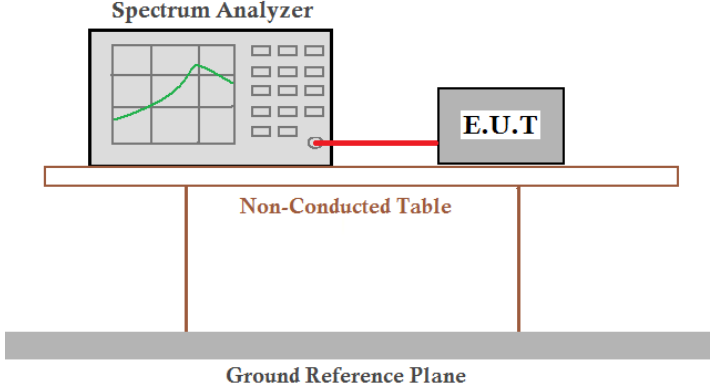


Middle channel

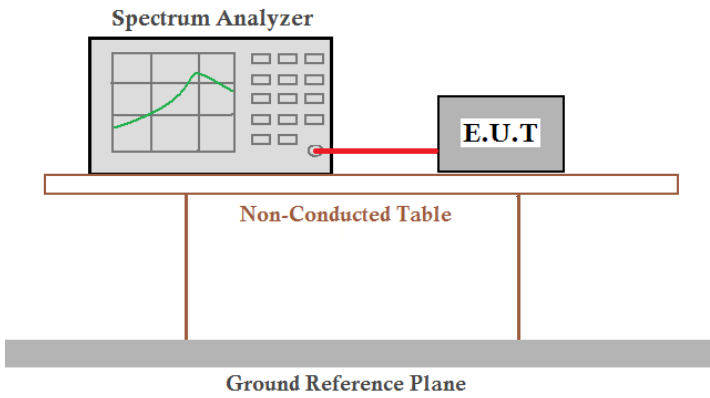


Highest channel

6.4 Occupy Bandwidth

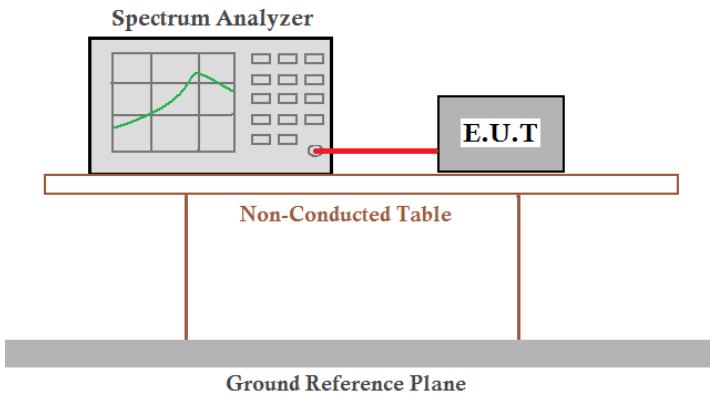
| | |
|-------------------|--|
| Test Requirement: | FCC Part 15 C Section 15.247 (a)(2) |
| Test Method: | ANSI C63.10:2013 and KDB558074v03r05 section 8.1 |
| Limit: | >500kHz |
| Test setup: |  <p>The diagram illustrates the test setup. A Spectrum Analyzer is connected to an E.U.T. (Equipment Under Test) via a red cable. Both are placed on a Non-Conducted Table, which is supported by two legs. Below the table is a Ground Reference Plane.</p> |
| Test Instruments: | Refer to section 5.8 for details |
| Test mode: | Refer to section 5.3 for details |
| Test results: | Refer to FCC ID:Z9W-RMB |

6.5 Power Spectral Density

| | |
|-------------------|---|
| Test Requirement: | FCC Part 15 C Section 15.247 (e) |
| Test Method: | ANSI C63.10:2013 and KDB558074v03r05 section 10.2 |
| Limit: | 8dBm |
| Test setup: |  <p>The diagram illustrates the test setup. A Spectrum Analyzer is connected to an E.U.T. (Equipment Under Test) via a red cable. Both are placed on a Non-Conducted Table, which is supported by a Ground Reference Plane.</p> |
| Test Instruments: | Refer to section 5.8 for details |
| Test mode: | Refer to section 5.3 for details |
| Test results: | Refer to FCC ID:Z9W-RMB |

6.6 Band Edge

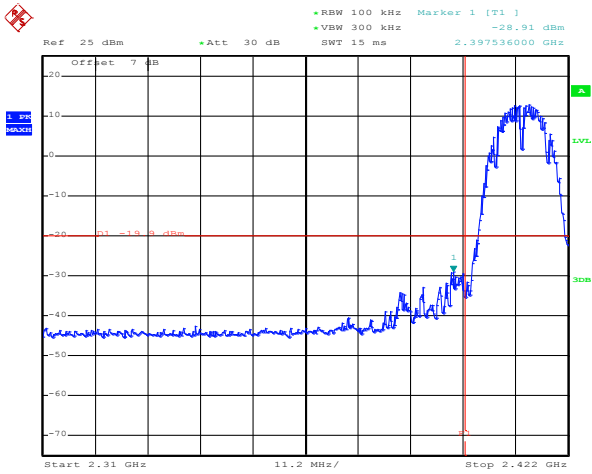
6.6.1 Conducted Emission Method

| | |
|-------------------|---|
| Test Requirement: | FCC Part 15 C Section 15.247 (d) |
| Test Method: | ANSI C63.10:2013 and KDB558074v03r05 section 13 |
| Limit: | In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 30 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. |
| Test setup: |  <p>The diagram illustrates the test setup. A Spectrum Analyzer is connected to an E.U.T. (Equipment Under Test) via a red cable. Both are placed on a Non-Conducted Table, which is supported by a Ground Reference Plane.</p> |
| Test Instruments: | Refer to section 5.8 for details |
| Test mode: | Refer to section 5.3 for details |
| Test results: | Passed |

Test plot as follows:

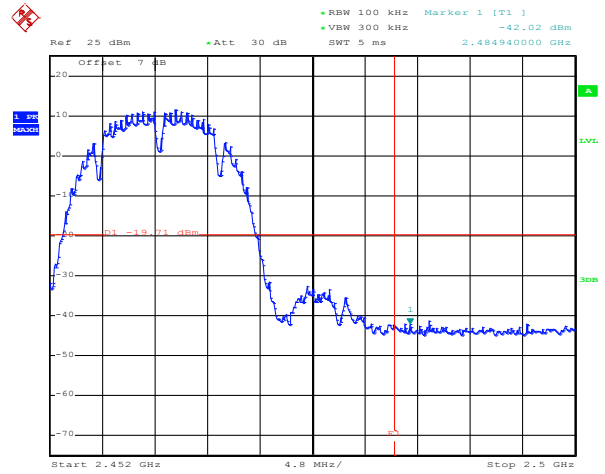
TX0

802.11b



Date: 13.DEC.2016 19:57:02

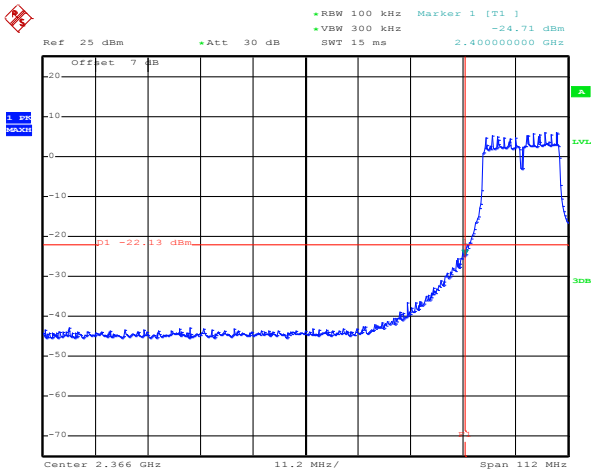
Lowest channel



Date: 13.DEC.2016 20:14:50

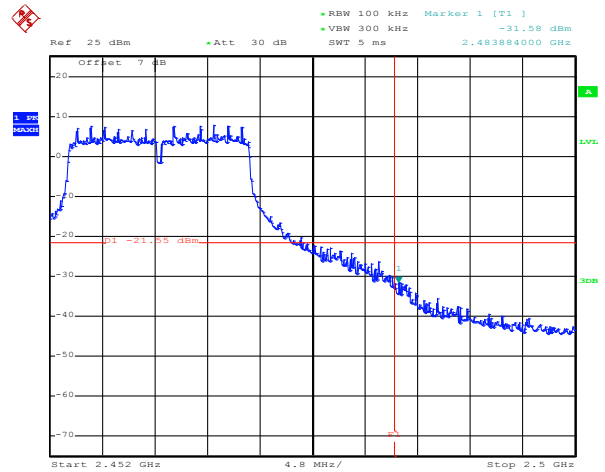
Highest channel

802.11g



Date: 13.DEC.2016 20:01:40

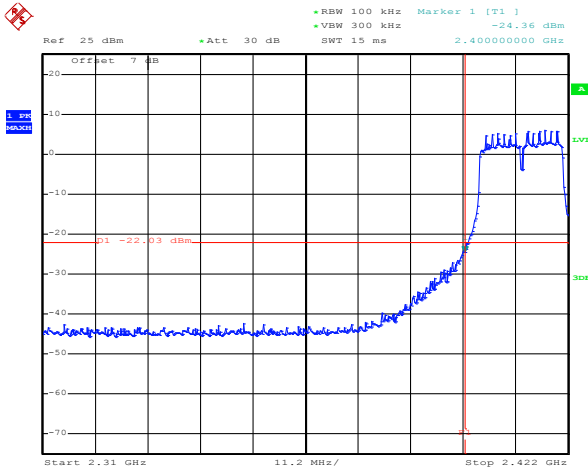
Lowest channel



Date: 13.DEC.2016 20:12:57

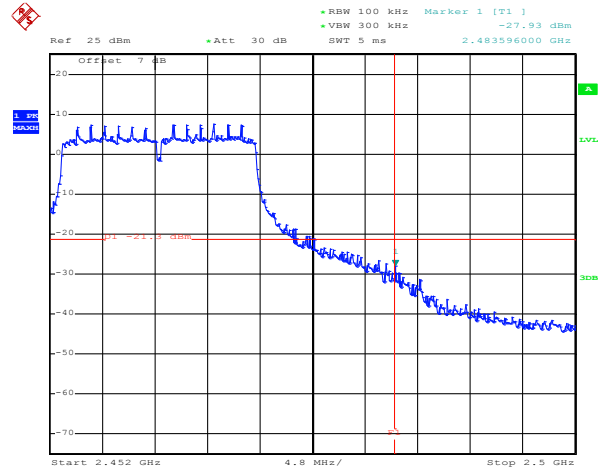
Highest channel

802.11n(H20)



Date: 13.DEC.2016 20:05:14

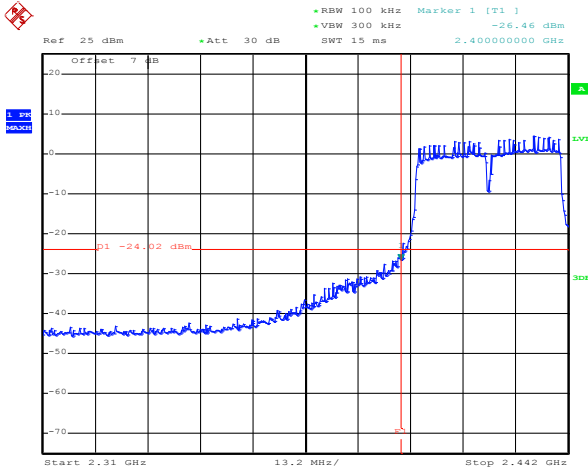
Lowest channel



Date: 13.DEC.2016 20:12:05

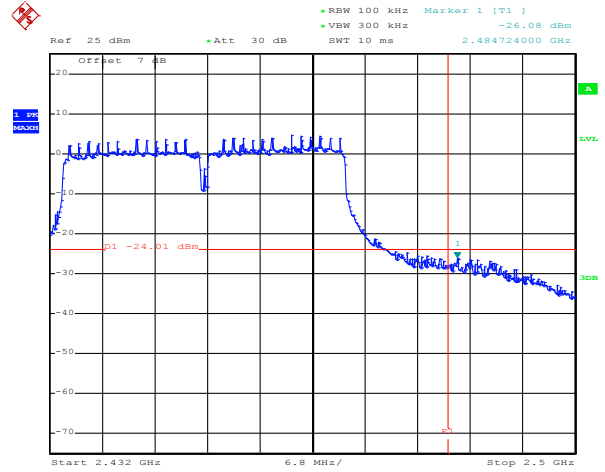
Highest channel

802.11n(H40)



Date: 13.DEC.2016 20:08:40

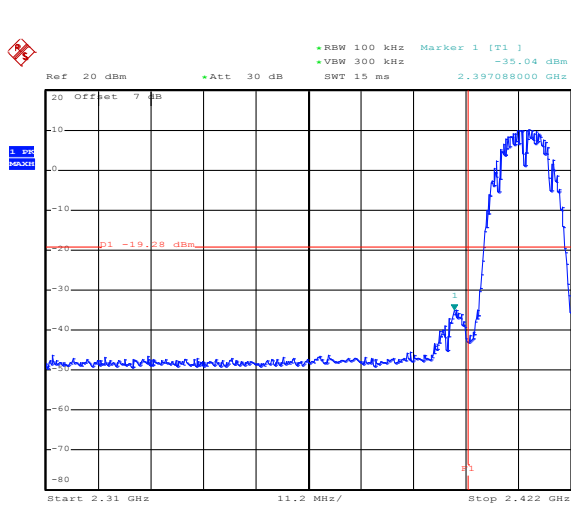
Lowest channel



Date: 13.DEC.2016 20:10:11

Highest channel

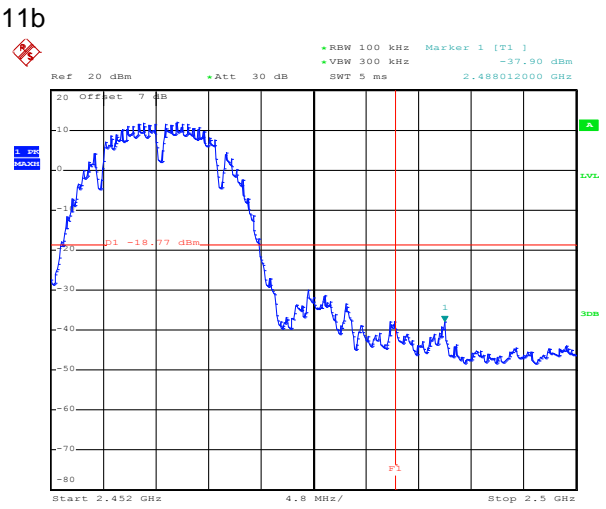
TX1



Date: 13.DEC.2016 21:14:29

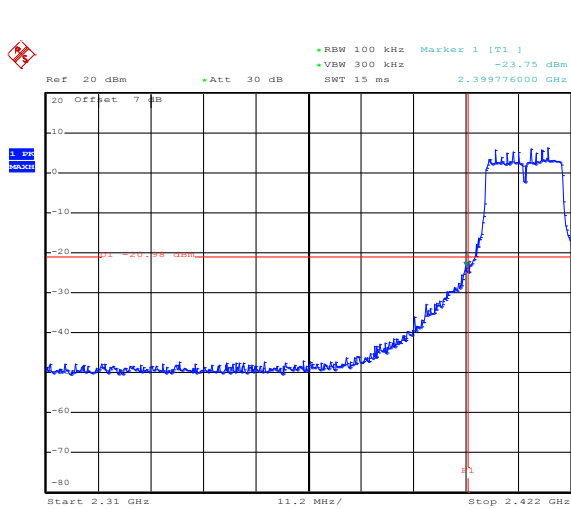
Lowest channel

802.11b



Date: 13.DEC.2016 21:25:06

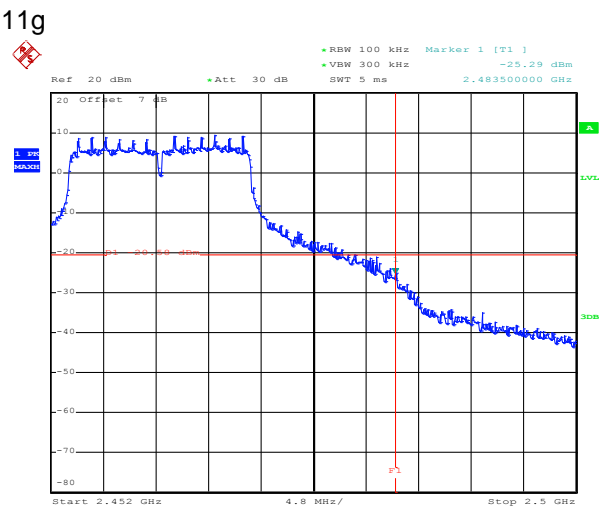
Highest channel



Date: 13.DEC.2016 21:16:52

Lowest channel

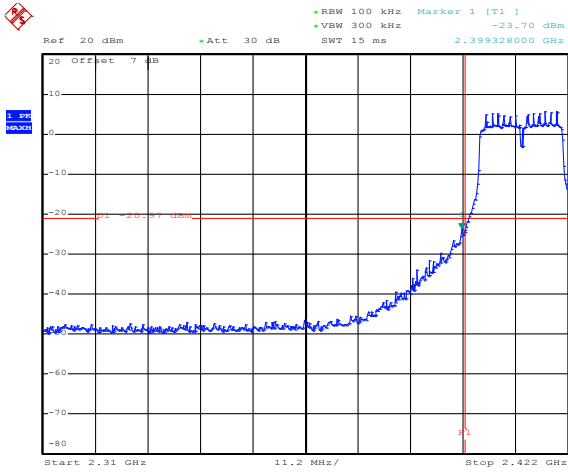
802.11g



Date: 13.DEC.2016 21:29:21

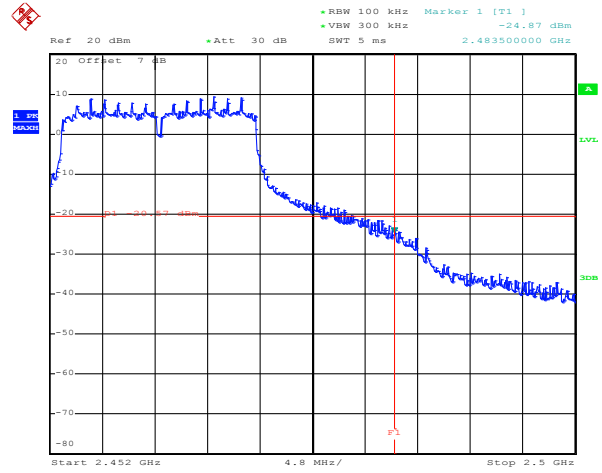
Highest channel

802.11n(H20)



Date: 13.DEC.2016 21:23:50

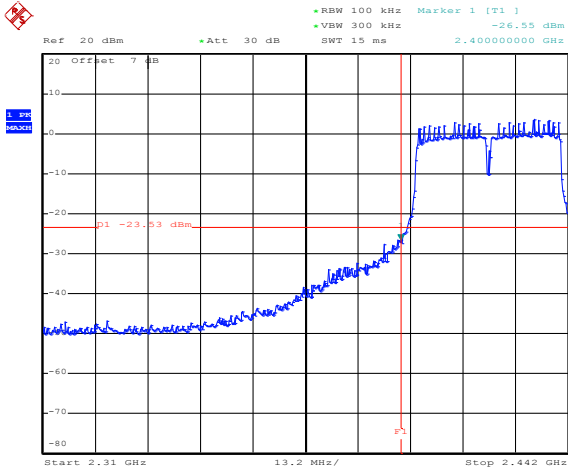
Lowest channel



Date: 13.DEC.2016 21:28:23

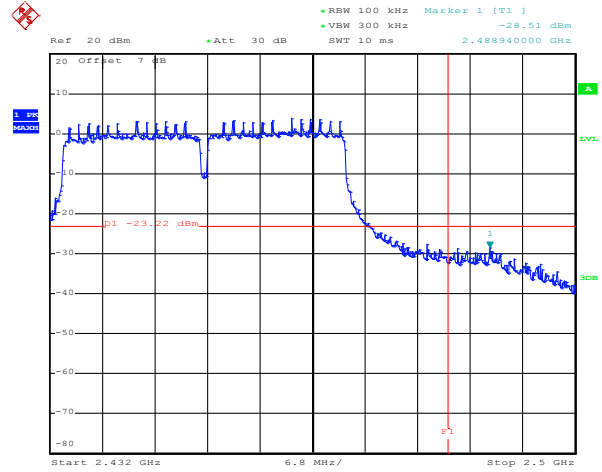
Highest channel

802.11n(H40)



Date: 13.DEC.2016 21:22:33

Lowest channel



Date: 13.DEC.2016 21:30:48

Highest channel

6.6.2 Radiated Emission Method

| | | | | | |
|-----------------------|---|--------------------|------|---------------|---------------|
| Test Requirement: | FCC Part 15 C Section 15.209 and 15.205 | | | | |
| Test Method: | ANSI C63.10: 2013 and KDB 558074v03r05 section 12.1 | | | | |
| Test Frequency Range: | 2.3GHz to 2.5GHz | | | | |
| Test site: | Measurement Distance: 3m | | | | |
| Receiver setup: | Frequency | Detector | RBW | VBW | Remark |
| | Above 1GHz | Peak | 1MHz | 3MHz | Peak Value |
| | | RMS | 1MHz | 3MHz | Average Value |
| Limit: | Frequency | Limit (dBuV/m @3m) | | Remark | |
| | Above 1GHz | 54.00 | | Average Value | |
| | | 74.00 | | Peak Value | |
| Test Procedure: | <ol style="list-style-type: none"> The EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. The antenna height 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. 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 rota table was turned from 0 degrees to 360 degrees to find the maximum reading. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet. | | | | |
| Test setup: | | | | | |
| Test Instruments: | Refer to section 5.8 for details | | | | |
| Test mode: | Refer to section 5.3 for details | | | | |
| Test results: | Passed | | | | |

Remark:

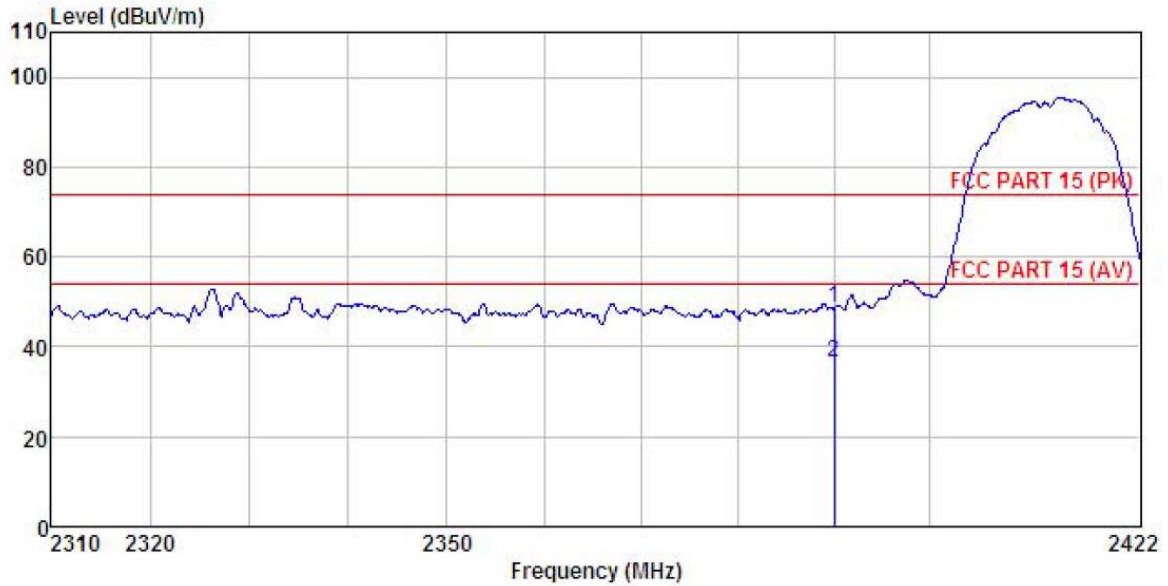
- During the test, pre-scan the Antenna 0 and Antenna 1, and found the Antenna 1 is the worst case, so only shows the data of Antenna 1 in this report.

MIMO TX mode

802.11b

Test channel: Lowest

Horizontal:



```

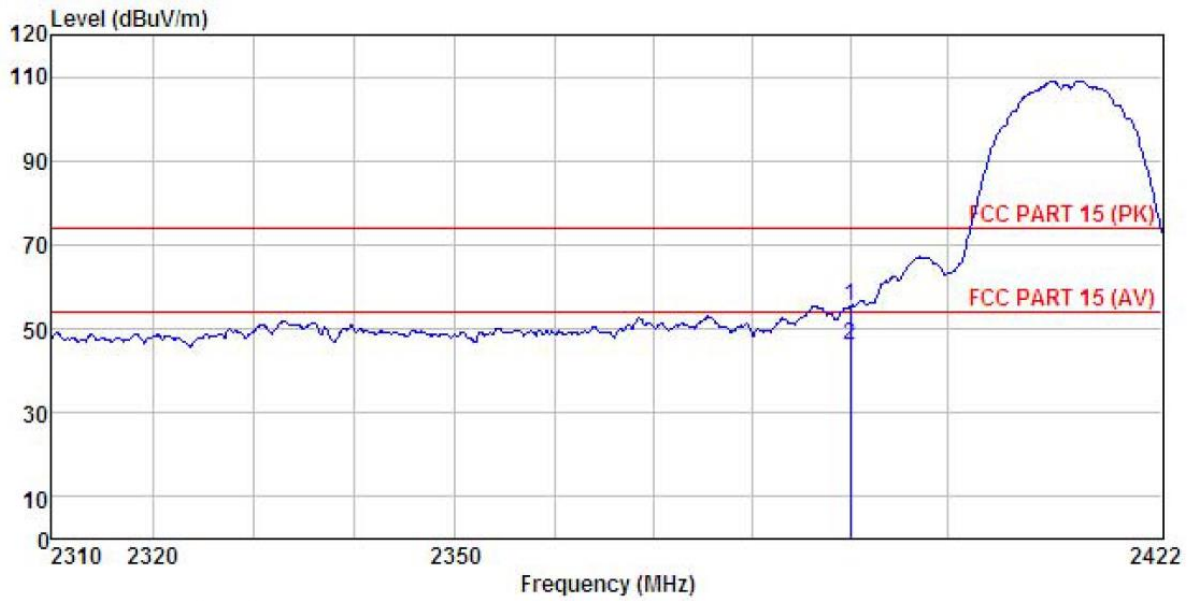
Site       : 3m chamber
Condition  : FCC PART 15 (PK) 3m BBHA9120(1G18) HORIZONTAL
Pro        :
EUT        : Broadband Digital Transmission System
Model      : Rambutan-I
Test mode  : 2.4G-Wifi-b-L mode
Power Rating : AC120V/60Hz
Environment : Temp:25.5°C Humi:55%
Test Engineer: MT
Remark     : 10dBi ant
    
```

| | Freq | Read Level | Antenna Factor | Cable Loss | Preamplifier Factor | Level | Limit Line | Over Limit | Remark |
|---|----------|------------|----------------|------------|---------------------|--------|------------|------------|---------|
| | MHz | dBuV | dB/m | dB | dB | dBuV/m | dBuV/m | dB | |
| 1 | 2390.000 | 20.51 | 23.68 | 4.69 | 0.00 | 48.88 | 74.00 | -25.12 | Peak |
| 2 | 2390.000 | 8.13 | 23.68 | 4.69 | 0.00 | 36.50 | 54.00 | -17.50 | Average |

Remark:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2. The emission levels of other frequencies are very lower than the limit and not show in test report.

Vertical:



Site : 3m chamber
 Condition : FCC PART 15 (PK) 3m BBHA9120(1G18) VERTICAL
 Pro :
 EUT : Broadband Digital Transmission System
 Model : Rambutan-I
 Test mode : 2.4G-Wifi-b-L mode
 Power Rating : AC120V/60Hz
 Environment : Temp:25.5°C Humi:55%
 Test Engineer: MT
 Remark : 10dBi ant

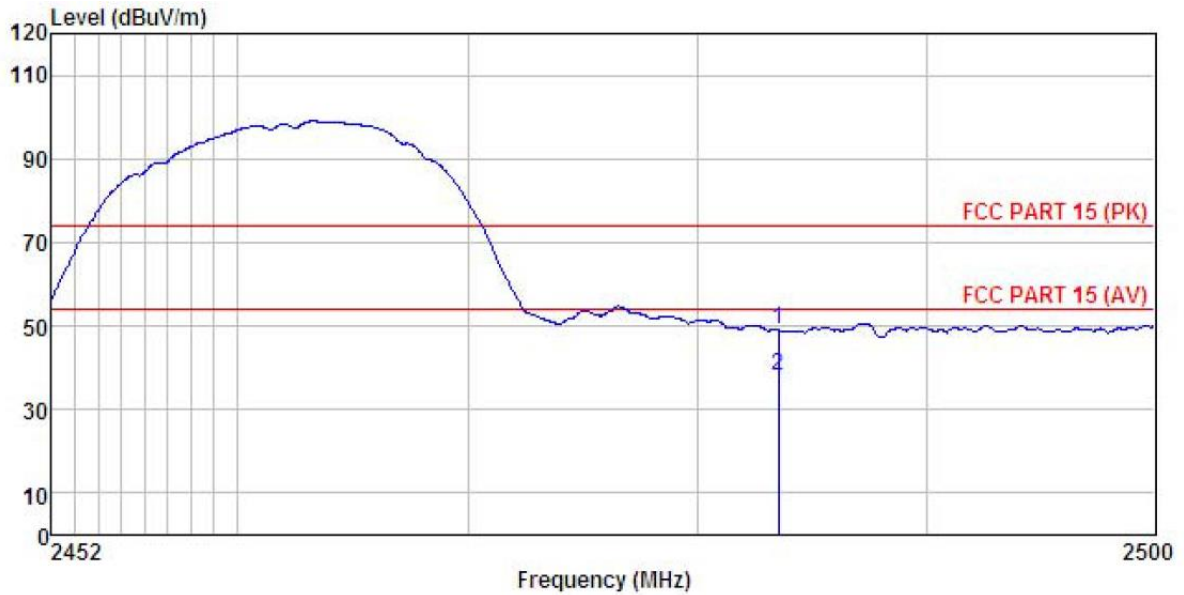
| | Read | Antenna | Cable | Preamp | Limit | Over | | |
|------|----------|---------|-------|--------|--------|--------|-------|---------------|
| Freq | Level | Factor | Loss | Factor | Level | Line | Limit | |
| MHz | dBuV | dB/m | dB | dB | dBuV/m | dBuV/m | dB | |
| 1 | 2390.000 | 27.19 | 23.68 | 4.69 | 0.00 | 55.56 | 74.00 | -18.44 Peak |
| 2 | 2390.000 | 17.89 | 23.68 | 4.69 | 0.00 | 46.26 | 54.00 | -7.74 Average |

Remark:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2. The emission levels of other frequencies are very lower than the limit and not show in test report.

Test channel: Highest

Horizontal:



```

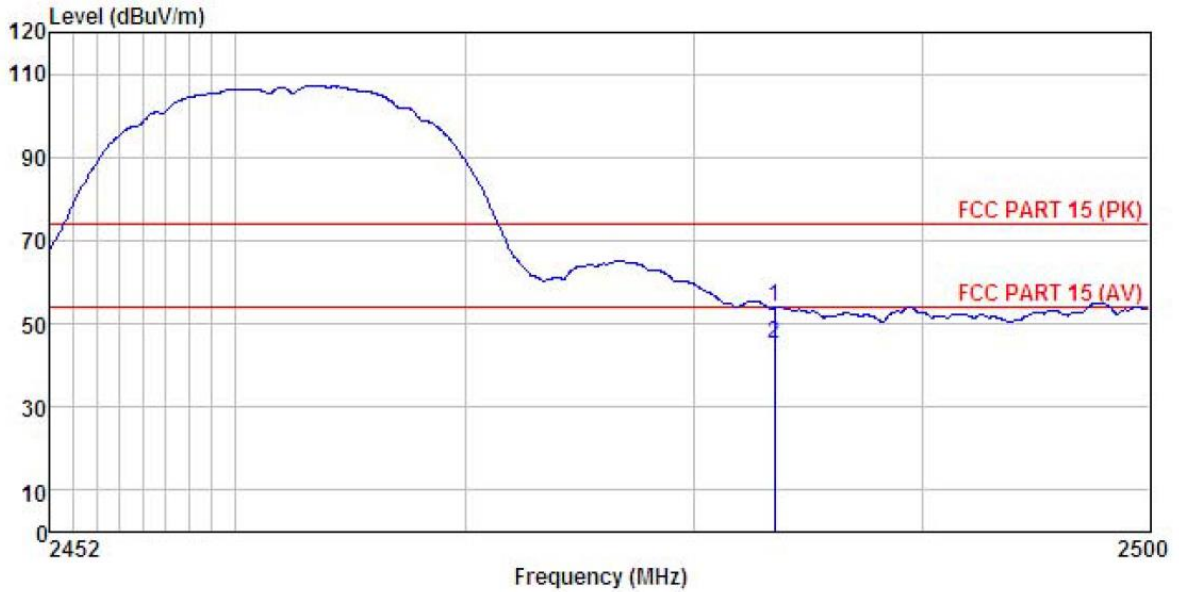
Site       : 3m chamber
Condition  : FCC PART 15 (PK) 3m BBHA9120(1G18) HORIZONTAL
Pro        :
EUT        : Broadband Digital Transmission System
Model      : Rambutan-I
Test mode  : 2.4G-Wifi-B-H mode
Power Rating : AC120V/60Hz
Environment : Temp:25.5°C Humi:55%
Test Engineer: MT
Remark     : 10dBi ant
    
```

| | Freq | Read Level | Antenna Factor | Cable Loss | Preamplifier | Level | Limit | Over | Remark |
|---|----------|------------|----------------|------------|--------------|--------|--------|--------|---------|
| | MHz | dBuV | dB/m | dB | dB | dBuV/m | dBuV/m | dB | |
| 1 | 2483.500 | 20.43 | 23.70 | 4.81 | 0.00 | 48.94 | 74.00 | -25.06 | Peak |
| 2 | 2483.500 | 9.44 | 23.70 | 4.81 | 0.00 | 37.95 | 54.00 | -16.05 | Average |

Remark:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2. The emission levels of other frequencies are very lower than the limit and not show in test report.

Vertical:



```

Site       : 3m chamber
Condition  : FCC PART 15 (PK) 3m BBHA9120(1G18) VERTICAL
Pro        :
EUT        : Broadband Digital Transmission System
Model      : Rambutan-I
Test mode  : 2.4G-Wifi-B-H mode
Power Rating : AC120V/60Hz
Environment : Temp:25.5°C Humi:55%
Test Engineer: MI
Remark     : 10dBi ant
    
```

| | Read | Antenna | Cable | Preamp | Limit | Over | |
|-------|----------|---------|-------|--------|--------|--------|---------------------|
| Freq | Level | Factor | Loss | Factor | Level | Line | Limit |
| ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| MHz | dBuV | dB/m | dB | dB | dBuV/m | dBuV/m | dB |
| 1 | 2483.500 | 25.61 | 23.70 | 4.81 | 0.00 | 54.12 | 74.00 -19.88 Peak |
| 2 | 2483.500 | 16.48 | 23.70 | 4.81 | 0.00 | 44.99 | 54.00 -9.01 Average |

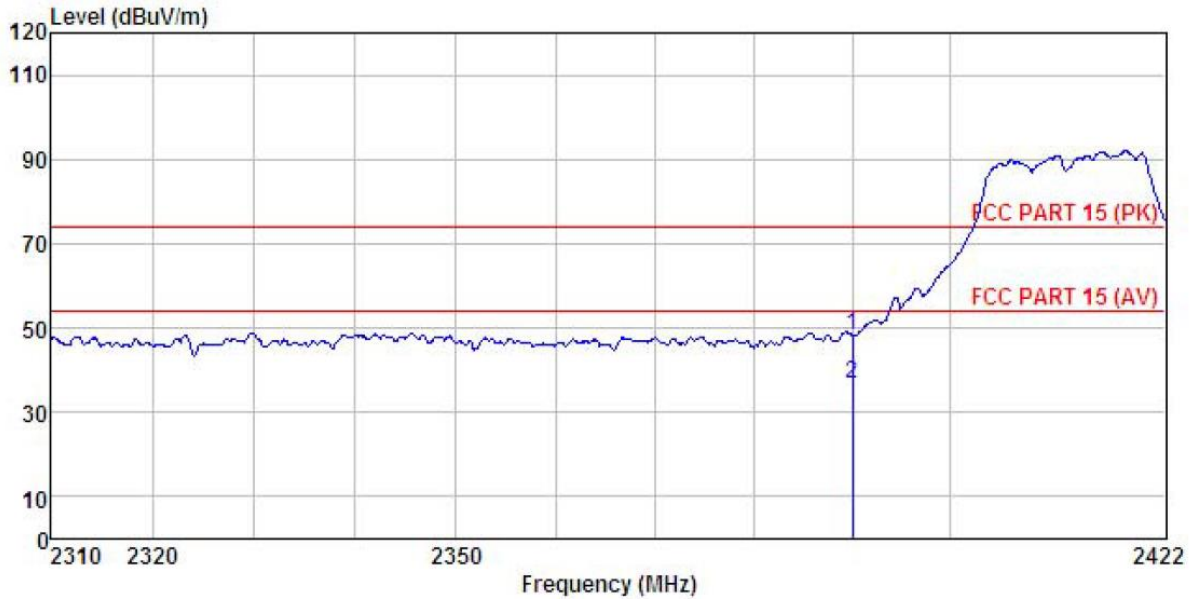
Remark:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Pre-amplifier Factor
2. The emission levels of other frequencies are very lower than the limit and not show in test report.

802.11g

Test channel: Lowest

Horizontal:



```

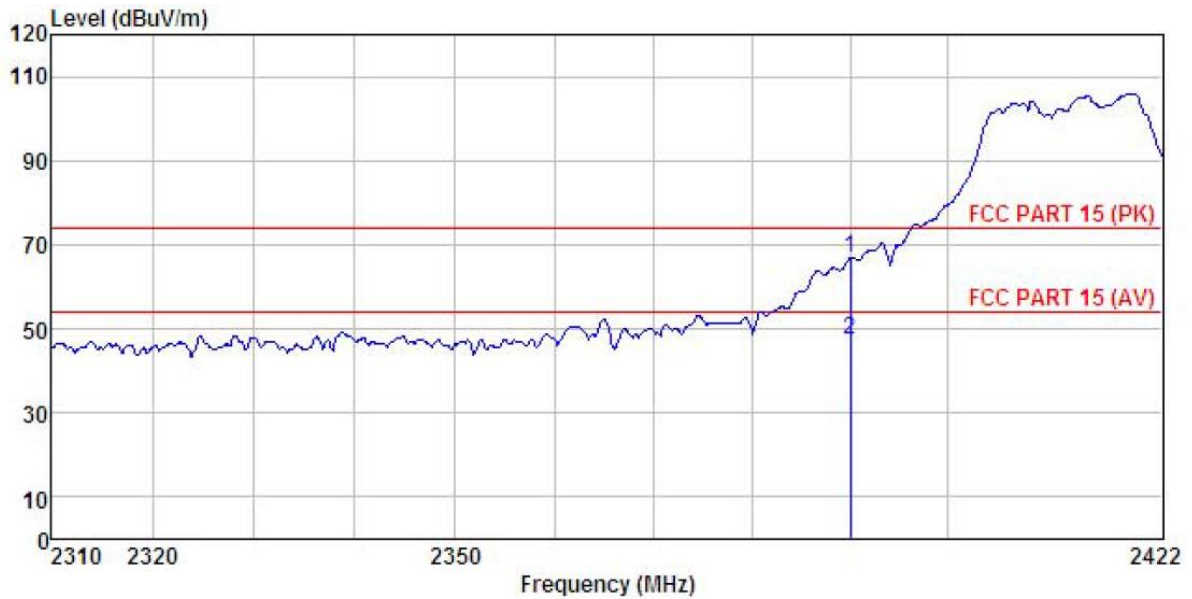
Site       : 3m chamber
Condition  : FCC PART 15 (PK) 3m BBHA9120(1G18) HORIZONTAL
Pro        :
EUT        : Broadband Digital Transmission System
Model      : Rambutan-I
Test mode  : 2.4G-Wifi-G-L mode
Power Rating : AC120V/60Hz
Environment : Temp:25.5°C Humi:55%
Test Engineer: MT
Remark     : 10dBi ant
    
```

| | Read | Antenna | Cable | Preamp | Limit | Over | |
|-------|----------|---------|-------|--------|--------|--------|----------------------|
| Freq | Level | Factor | Loss | Factor | Level | Line | Limit Remark |
| ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| MHz | dBuV | dB/m | dB | dB | dBuV/m | dBuV/m | dB |
| 1 | 2390.000 | 19.90 | 23.68 | 4.69 | 0.00 | 48.27 | 74.00 -25.73 Peak |
| 2 | 2390.000 | 8.29 | 23.68 | 4.69 | 0.00 | 36.66 | 54.00 -17.34 Average |

Remark:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2. The emission levels of other frequencies are very lower than the limit and not show in test report.

Vertical:



Site : 3m chamber
 Condition : FCC PART 15 (PK) 3m BBHA9120(1G18) VERTICAL
 Pro :
 EUT : Broadband Digital Transmission System
 Model : Rambutan-I
 Test mode : 2.4G-Wifi-G-L mode
 Power Rating : AC120V/60Hz
 Environment : Temp:25.5°C Humi:55%
 Test Engineer: MT
 Remark : 10dBi ant

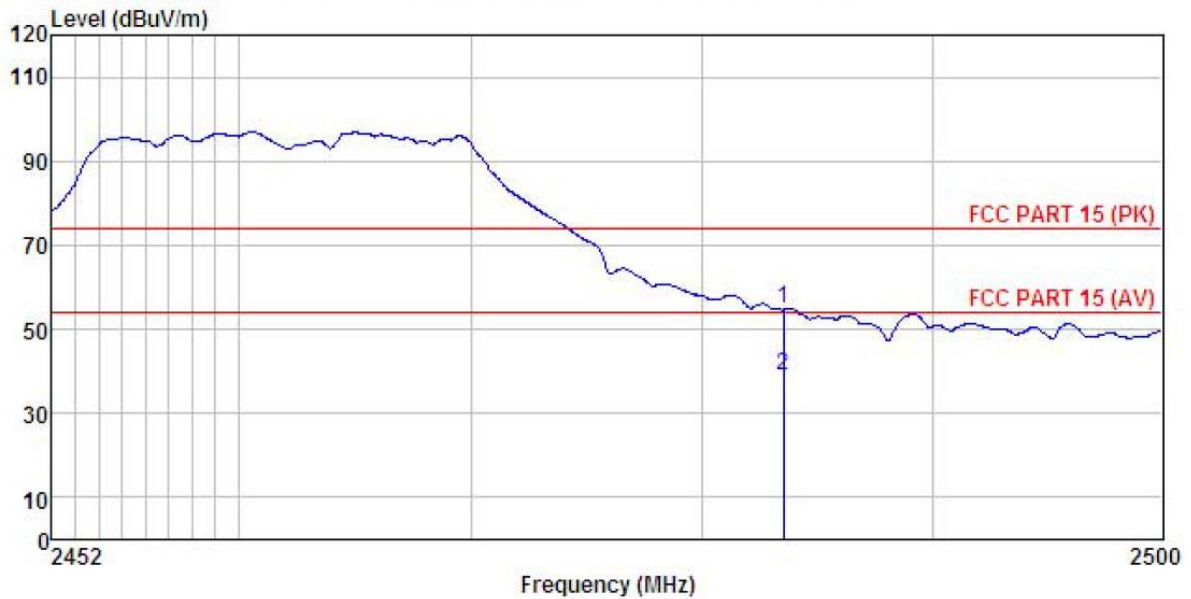
| | Read | Antenna | Cable | Preamp | Limit | Over | | |
|------|----------|---------|-------|--------|--------|--------|-------|---------------|
| Freq | Level | Factor | Loss | Factor | Level | Line | Limit | |
| MHz | dBuV | dB/m | dB | dB | dBuV/m | dBuV/m | dB | |
| 1 | 2390.000 | 38.65 | 23.68 | 4.69 | 0.00 | 67.02 | 74.00 | -6.98 Peak |
| 2 | 2390.000 | 18.93 | 23.68 | 4.69 | 0.00 | 47.30 | 54.00 | -6.70 Average |

Remark:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Pre-amplifier Factor
2. The emission levels of other frequencies are very lower than the limit and not show in test report.

Test channel: Highest

Horizontal:



```

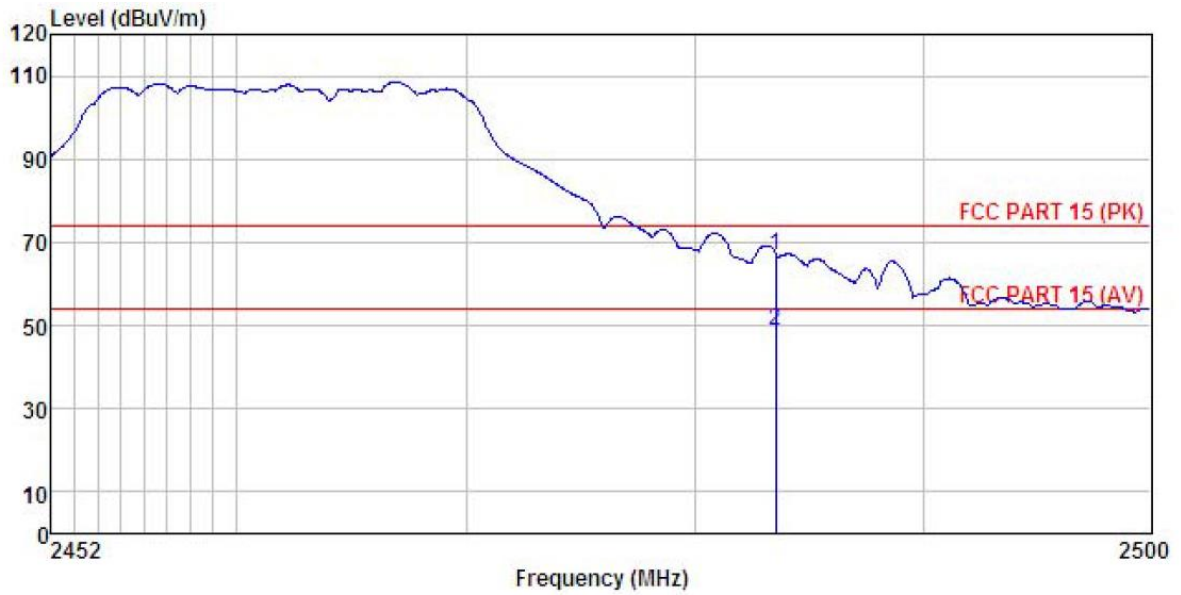
Site       : 3m chamber
Condition  : FCC PART 15 (PK) 3m BBHA9120(1G18) HORIZONTAL
Pro        :
EUT        : Broadband Digital Transmission System
Model      : Rambutan-I
Test mode   : 2.4G-Wifi-G-H mode
Power Rating : AC120V/60Hz
Environment : Temp:25.5°C Humi:55%
Test Engineer: MT
Remark     : 10dBi ant
    
```

| | Read | Antenna | Cable | Preamp | Limit | Over | |
|-------|----------|---------|-------|--------|--------|--------|----------------------|
| Freq | Level | Factor | Loss | Factor | Level | Line | Limit |
| ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| MHz | dBuV | dB/m | dB | dB | dBuV/m | dBuV/m | dB |
| 1 | 2483.500 | 26.27 | 23.70 | 4.81 | 0.00 | 54.78 | 74.00 -19.22 Peak |
| 2 | 2483.500 | 10.47 | 23.70 | 4.81 | 0.00 | 38.98 | 54.00 -15.02 Average |

Remark:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2. The emission levels of other frequencies are very lower than the limit and not show in test report.

Vertical:



Site : 3m chamber
 Condition : FCC PART 15 (PK) 3m BBHA9120(1G18) VERTICAL
 Pro :
 EUT : Broadband Digital Transmission System
 Model : Rambutan-I
 Test mode : 2.4G-Wifi-G-H mode
 Power Rating : AC120V/60Hz
 Environment : Temp:25.5°C Humi:55%
 Test Engineer: MT
 Remark : 10dBi ant

| | Read | Antenna | Cable | Preamp | Limit | Over | | |
|------|----------|---------|-------|--------|--------|--------|--------|---------------|
| Freq | Level | Factor | Loss | Factor | Line | Limit | Remark | |
| MHz | dBuV | dB/m | dB | dB | dBuV/m | dBuV/m | dB | |
| 1 | 2483.500 | 38.39 | 23.70 | 4.81 | 0.00 | 66.90 | 74.00 | -7.10 Peak |
| 2 | 2483.500 | 20.17 | 23.70 | 4.81 | 0.00 | 48.68 | 54.00 | -5.32 Average |

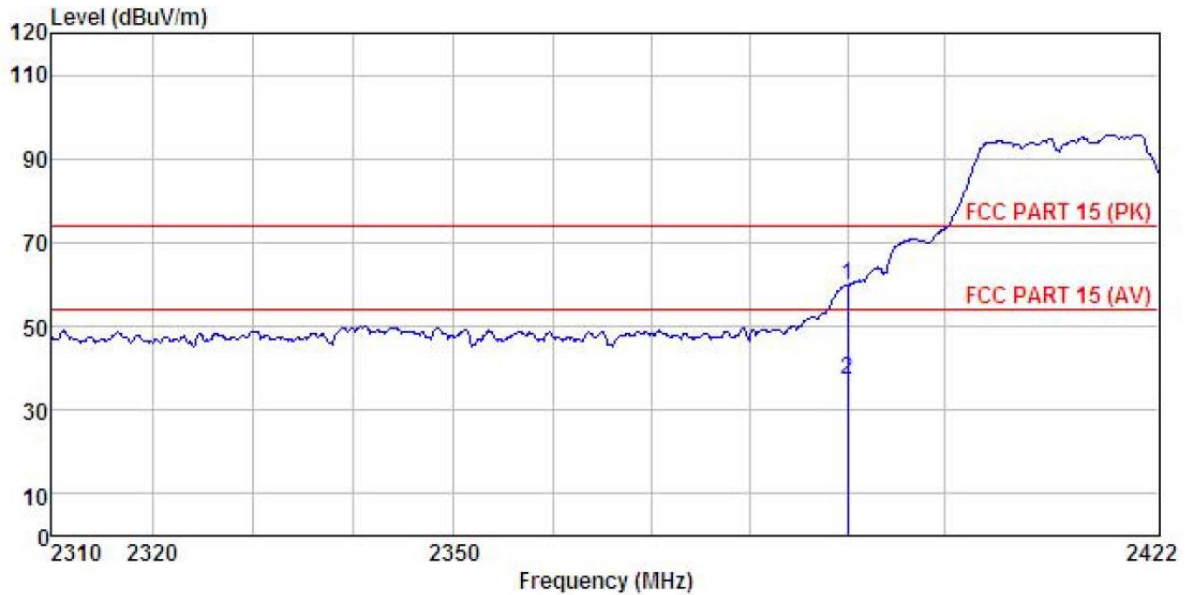
Remark:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2. The emission levels of other frequencies are very lower than the limit and not show in test report.

802.11n (H20)

Test channel: Lowest

Horizontal:



```

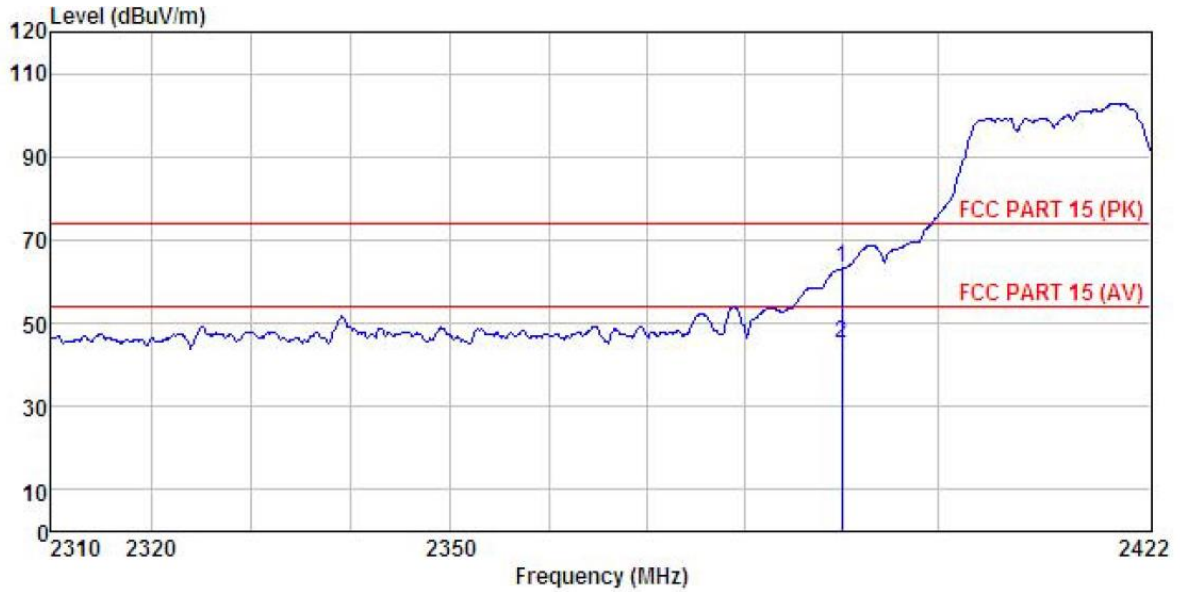
Site       : 3m chamber
Condition  : FCC PART 15 (PK) 3m BBHA9120(1G18) HORIZONTAL
Pro       :
EUT       : Broadband Digital Transmission System
Model     : Rambutan-I
Test mode : 2.4G-Wifi-N20-L mode
Power Rating : AC120V/60Hz
Environment : Temp:25.5°C Humi:55%
Test Engineer: MT
Remark    : 10dBi ant
    
```

| | Read | Antenna | Cable | Preamp | Level | Limit | Over | |
|------|----------|---------|-------|--------|--------|--------|-------|----------------|
| Freq | Level | Factor | Loss | Factor | Level | Line | Limit | Remark |
| MHz | dBuV | dB/m | dB | dB | dBuV/m | dBuV/m | dB | |
| 1 | 2390.000 | 31.55 | 23.68 | 4.69 | 0.00 | 59.92 | 74.00 | -14.08 Peak |
| 2 | 2390.000 | 8.97 | 23.68 | 4.69 | 0.00 | 37.34 | 54.00 | -16.66 Average |

Remark:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Pre-amplifier Factor
2. The emission levels of other frequencies are very lower than the limit and not show in test report.

Vertical:



Site : 3m chamber
 Condition : FCC PART 15 (PK) 3m BBHA9120(1G18) VERTICAL
 Pro :
 EUT : Broadband Digital Transmission System
 Model : Rambutan-I
 Test mode : 2.4G-Wifi-N20-L mode
 Power Rating : AC120V/60Hz
 Environment : Temp:25.5°C Humi:55%
 Test Engineer: MT
 Remark : 10dBi ant

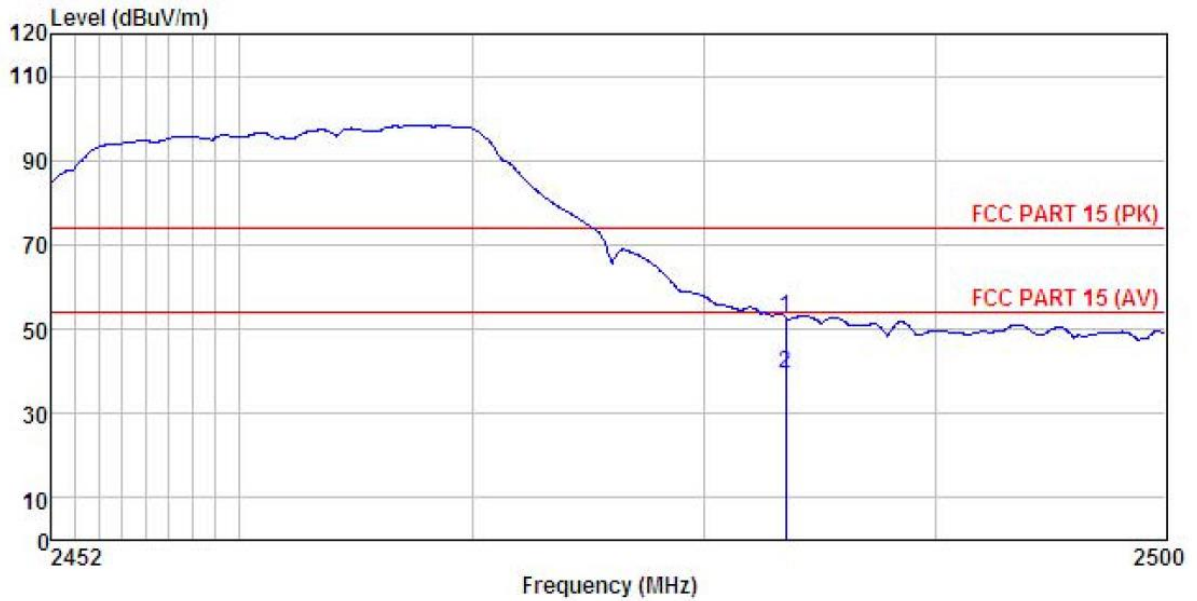
| | Read | Antenna | Cable | Preamp | Limit | Over | |
|-------|----------|---------|-------|--------|--------|--------|---------------------|
| Freq | Level | Factor | Loss | Factor | Line | Limit | Remark |
| ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| MHz | dBuV | dB/m | dB | dB | dBuV/m | dBuV/m | dB |
| 1 | 2390.000 | 34.79 | 23.68 | 4.69 | 0.00 | 63.16 | 74.00 -10.84 Peak |
| 2 | 2390.000 | 16.85 | 23.68 | 4.69 | 0.00 | 45.22 | 54.00 -8.78 Average |

Remark:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Pre-amplifier Factor
2. The emission levels of other frequencies are very lower than the limit and not show in test report.

Test channel: Highest

Horizontal:



```

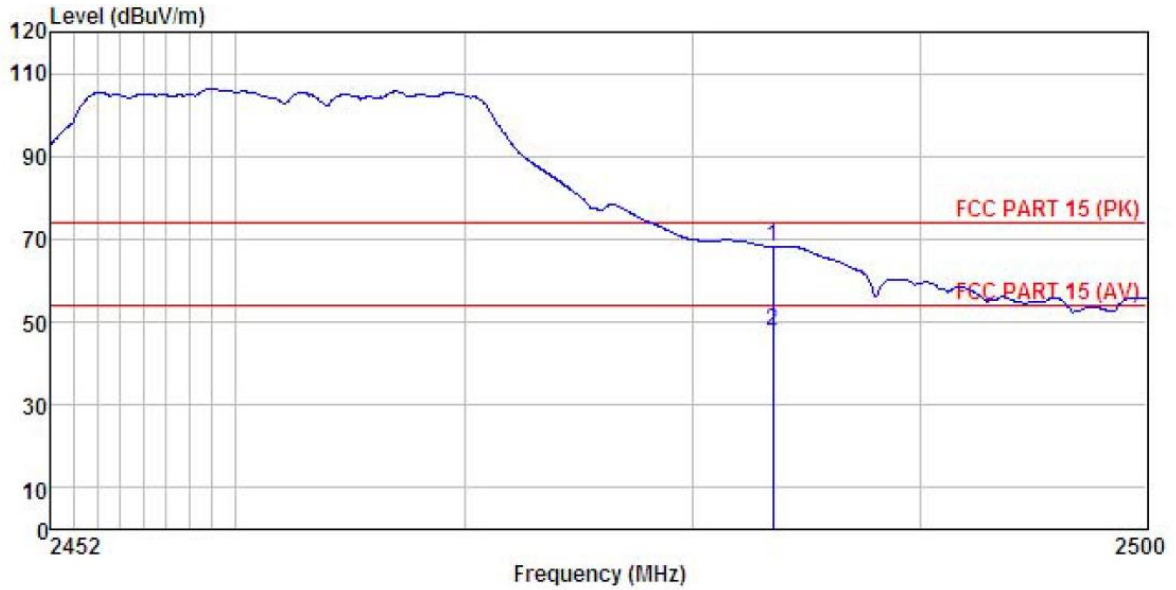
Site       : 3m chamber
Condition  : FCC PART 15 (PK) 3m BBHA9120(1G18) HORIZONTAL
Pro        :
EUT        : Broadband Digital Transmission System
Model      : Rambutan-I
Test mode   : 2.4G-Wifi-N20-H mode
Power Rating : AC120V/60Hz
Environment : Temp:25.5°C Humi:55%
Test Engineer: MT
Remark     : 10dBi ant
    
```

| | Read | Antenna | Cable | Preamp | Limit | Over | |
|------|----------|---------|-------|--------|--------|--------|----------------------|
| Freq | Level | Factor | Loss | Factor | Level | Line | Limit Remark |
| MHz | dBuV | dB/m | dB | dB | dBuV/m | dBuV/m | dB |
| 1 | 2483.500 | 24.01 | 23.70 | 4.81 | 0.00 | 52.52 | 74.00 -21.48 Peak |
| 2 | 2483.500 | 10.92 | 23.70 | 4.81 | 0.00 | 39.43 | 54.00 -14.57 Average |

Remark:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2. The emission levels of other frequencies are very lower than the limit and not show in test report.

Vertical:



Site : 3m chamber
 Condition : FCC PART 15 (PK) 3m BBHA9120(1G18) VERTICAL
 Pro :
 EUT : Broadband Digital Transmission System
 Model : Rambutan-I
 Test mode : 2.4G-Wifi-N20-H mode
 Power Rating : AC120V/60Hz
 Environment : Temp:25.5°C Humi:55%
 Test Engineer: MT
 Remark : 10dBi ant

| | Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Limit Level | Over Limit | Remark |
|---|----------|------------|----------------|------------|---------------|-------------|------------|---------------|
| | MHz | dBuV | dB/m | dB | dB | dBuV/m | dBuV/m | dB |
| 1 | 2483.500 | 39.57 | 23.70 | 4.81 | 0.00 | 68.08 | 74.00 | -5.92 Peak |
| 2 | 2483.500 | 19.30 | 23.70 | 4.81 | 0.00 | 47.81 | 54.00 | -6.19 Average |

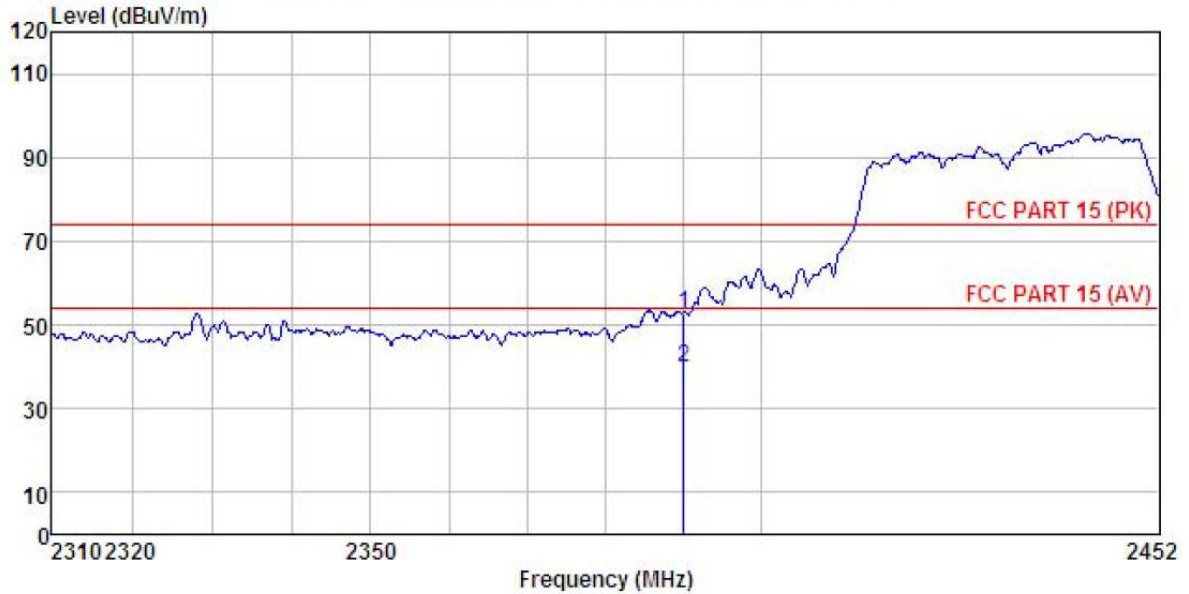
Remark:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Pre-amplifier Factor
2. The emission levels of other frequencies are very lower than the limit and not show in test report.

802.11n (H40)

Test channel: Lowest

Horizontal:



```

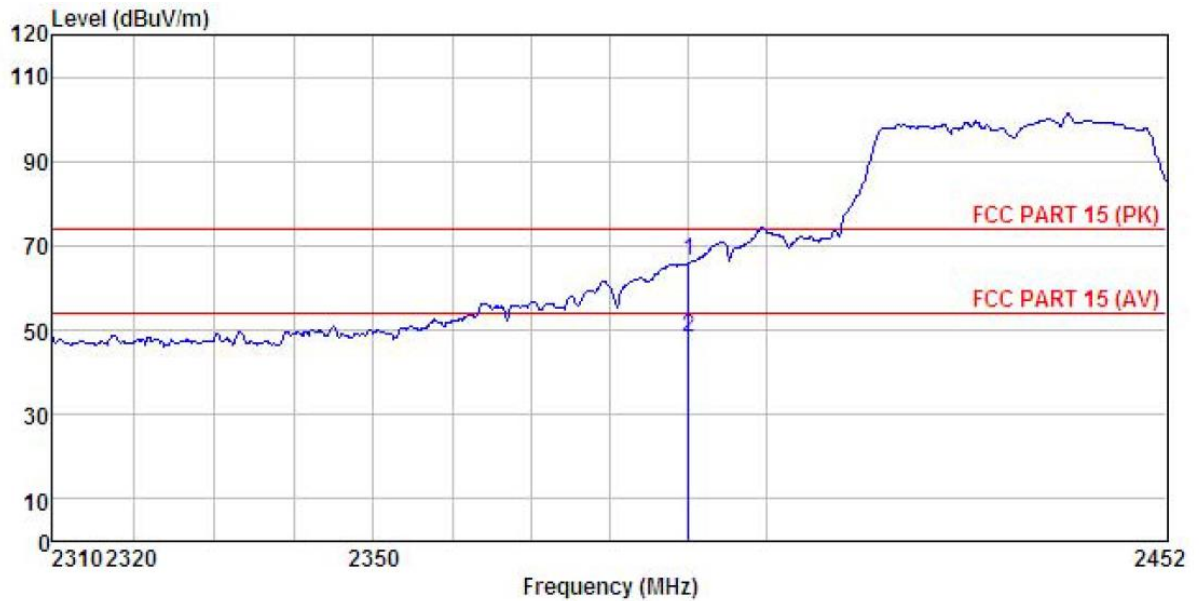
Site       : 3m chamber
Condition  : FCC PART 15 (PK) 3m BBHA9120(1G18) HORIZONTAL
Pro        :
EUT        : Broadband Digital Transmission System
Model      : Rambutan-I
Test mode  : 2.4G-Wifi-N40-L mode
Power Rating : AC120V/60Hz
Environment : Temp:25.5°C Humi:55%
Test Engineer: MT
Remark     : 10dBi ant
    
```

| | Read | Antenna | Cable | Preamp | Limit | Over | |
|------|----------|---------|-------|--------|--------|--------|----------------------|
| Freq | Level | Factor | Loss | Factor | Line | Limit | Remark |
| MHz | dBuV | dB/m | dB | dB | dBuV/m | dBuV/m | dB |
| 1 | 2390.000 | 24.14 | 23.68 | 4.69 | 0.00 | 52.51 | 74.00 -21.49 Peak |
| 2 | 2390.000 | 11.69 | 23.68 | 4.69 | 0.00 | 40.06 | 54.00 -13.94 Average |

Remark:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2. The emission levels of other frequencies are very lower than the limit and not show in test report.

Vertical:



```

Site       : 3m chamber
Condition  : FCC PART 15 (PK) 3m BBHA9120(1G18) VERTICAL
Pro       :
EUT       : Broadband Digital Transmission System
Model     : Rambutan-I
Test mode : 2.4G-Wifi-N40-L mode
Power Rating : AC120V/60Hz
Environment : Temp:25.5°C Humi:55%
Test Engineer: MT
Remark    : 10dBi ant
    
```

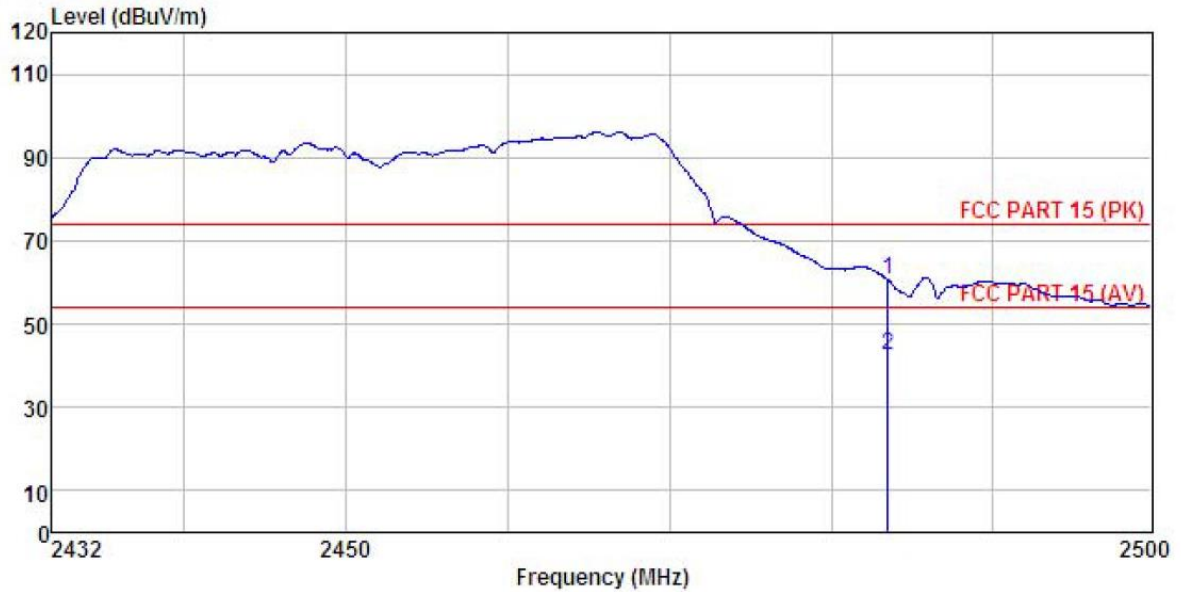
| | Read | Antenna | Cable | Preamp | Level | Limit | Over | |
|------|----------|---------|-------|--------|--------|--------|-------|---------------|
| Freq | Level | Factor | Loss | Factor | Level | Line | Limit | Remark |
| MHz | dBuV | dB/m | dB | dB | dBuV/m | dBuV/m | dB | |
| 1 | 2390.000 | 38.07 | 23.68 | 4.69 | 0.00 | 66.44 | 74.00 | -7.56 Peak |
| 2 | 2390.000 | 19.82 | 23.68 | 4.69 | 0.00 | 48.19 | 54.00 | -5.81 Average |

Remark:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2. The emission levels of other frequencies are very lower than the limit and not show in test report.

Test channel: Highest

Horizontal:



```

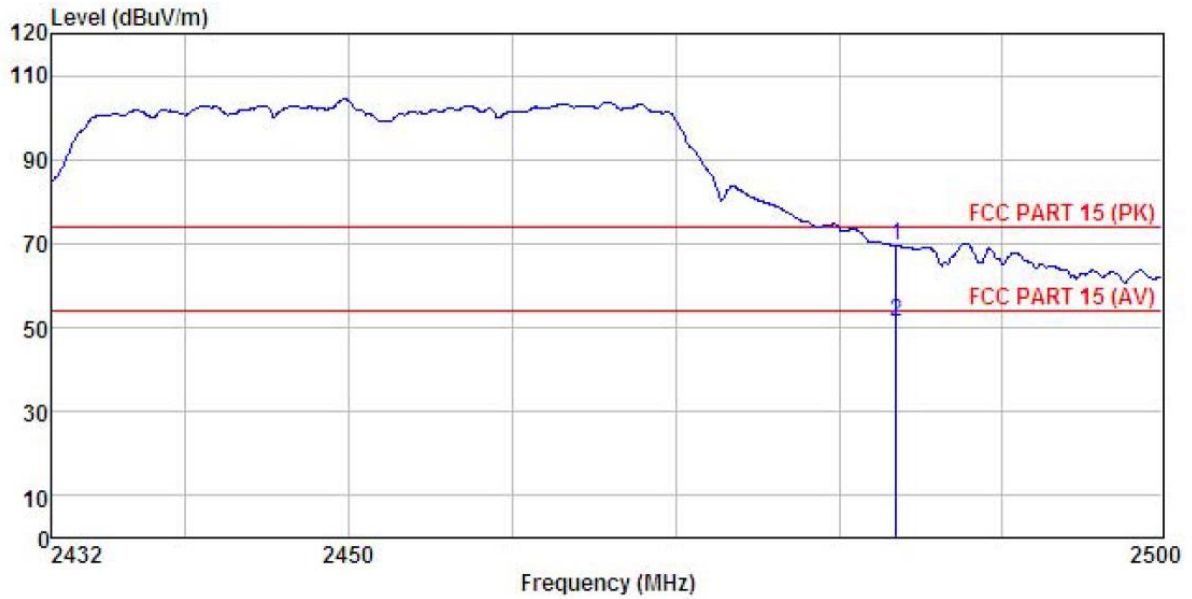
Site       : 3m chamber
Condition  : FCC PART 15 (PK) 3m BBHA9120(1G18) HORIZONTAL
Pro        :
EUT        : Broadband Digital Transmission System
Model      : Rambutan-I
Test mode  : 2.4G-Wifi-N40-H mode
Power Rating : AC120V/60Hz
Environment : Temp:25.5°C Humi:55%
Test Engineer: MT
Remark     : 10dBi ant
    
```

| | Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Level | Limit Line | Over Limit | Remark |
|---|----------|------------|----------------|------------|---------------|--------|------------|------------|---------|
| | MHz | dBuV | dB/m | dB | dB | dBuV/m | dBuV/m | dB | |
| 1 | 2483.500 | 32.17 | 23.70 | 4.81 | 0.00 | 60.68 | 74.00 | -13.32 | Peak |
| 2 | 2483.500 | 13.94 | 23.70 | 4.81 | 0.00 | 42.45 | 54.00 | -11.55 | Average |

Remark:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Pre-amplifier Factor
2. The emission levels of other frequencies are very lower than the limit and not show in test report.

Vertical:



Site : 3m chamber
 Condition : FCC PART 15 (PK) 3m BBHA9120(1G18) VERTICAL
 Pro :
 EUT : Broadband Digital Transmission System
 Model : Rambutan-I
 Test mode : 2.4G-Wifi-N40-H mode
 Power Rating : AC120V/60Hz
 Environment : Temp:25.5°C Humi:55%
 Test Engineer: MT
 Remark : 10dBi ant

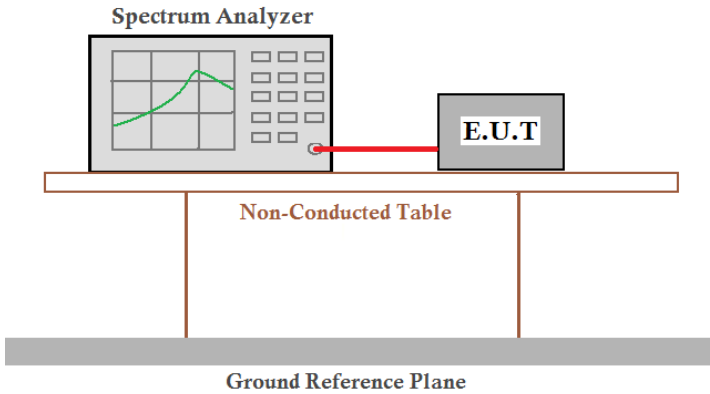
| | Read | Antenna | Cable | Preamp | Limit | Over | | |
|------|----------|---------|-------|--------|--------|--------|--------|---------------|
| Freq | Level | Factor | Loss | Factor | Line | Limit | Remark | |
| MHz | dBuV | dB/m | dB | dB | dBuV/m | dBuV/m | dB | |
| 1 | 2483.500 | 40.94 | 23.70 | 4.81 | 0.00 | 69.45 | 74.00 | -4.55 Peak |
| 2 | 2483.500 | 22.90 | 23.70 | 4.81 | 0.00 | 51.41 | 54.00 | -2.59 Average |

Remark:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2. The emission levels of other frequencies are very lower than the limit and not show in test report.

6.7 Spurious Emission

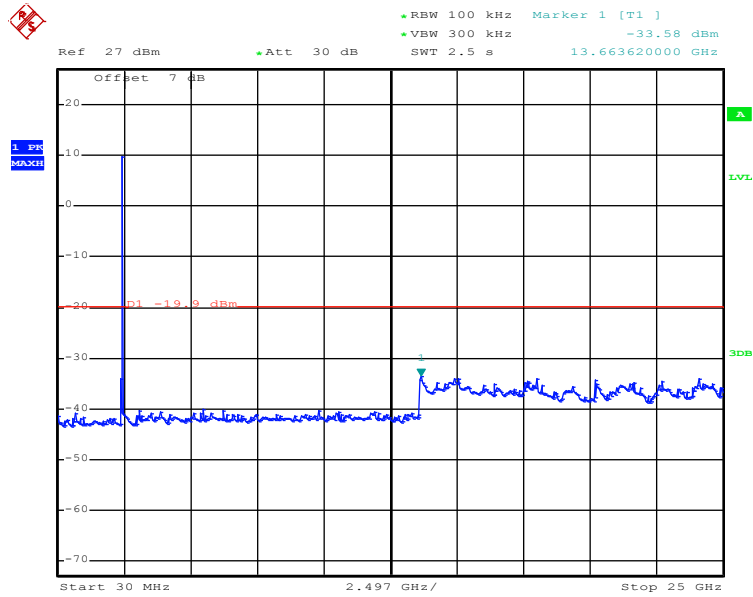
6.7.1 Conducted Emission Method

| | |
|-------------------|--|
| Test Requirement: | FCC Part 15 C Section 15.247 (d) |
| Test Method: | ANSI C63.10:2013 and KDB558074v03r05 section 11 |
| Limit: | In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator 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, based on either an RF conducted or a radiated measurement. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph(b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. |
| Test setup: |  <p>The diagram illustrates the test setup. A Spectrum Analyzer is connected to an E.U.T. (Equipment Under Test) via a red cable. Both are placed on a Non-Conducted Table, which is supported by two legs. Below the table is a Ground Reference Plane.</p> |
| Test Instruments: | Refer to section 5.8 for details |
| Test mode: | Refer to section 5.3 for details |
| Test results: | Passed |

Test plot as follows:

TX0

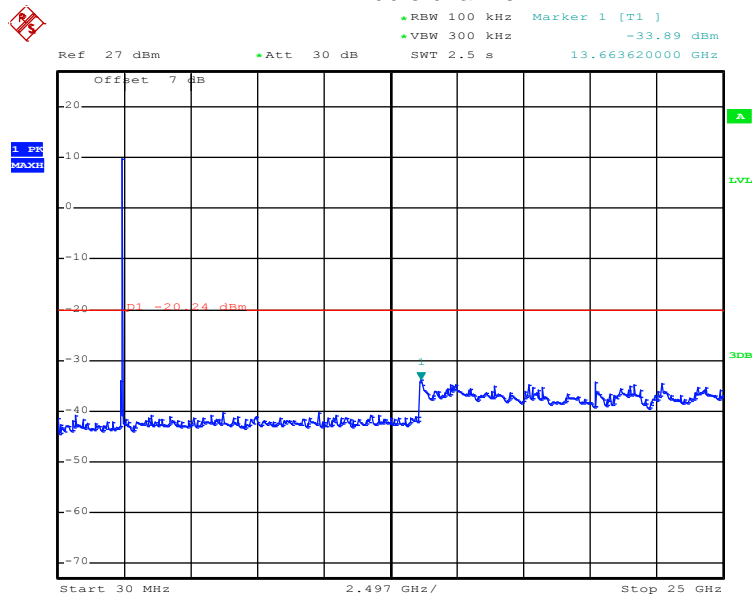
Test mode: 802.11b
Lowest channel



Date: 13.DEC.2016 20:17:58

30MHz~25GHz

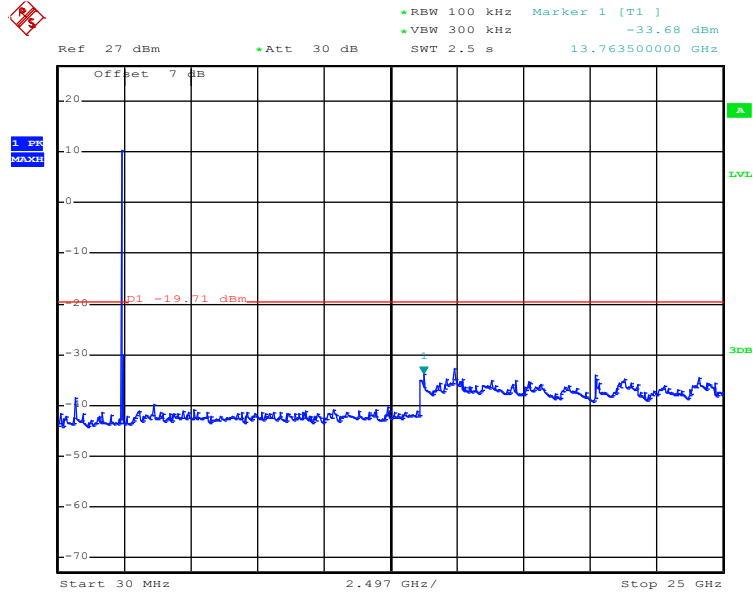
Middle channel



Date: 13.DEC.2016 20:17:07

30MHz~25GHz

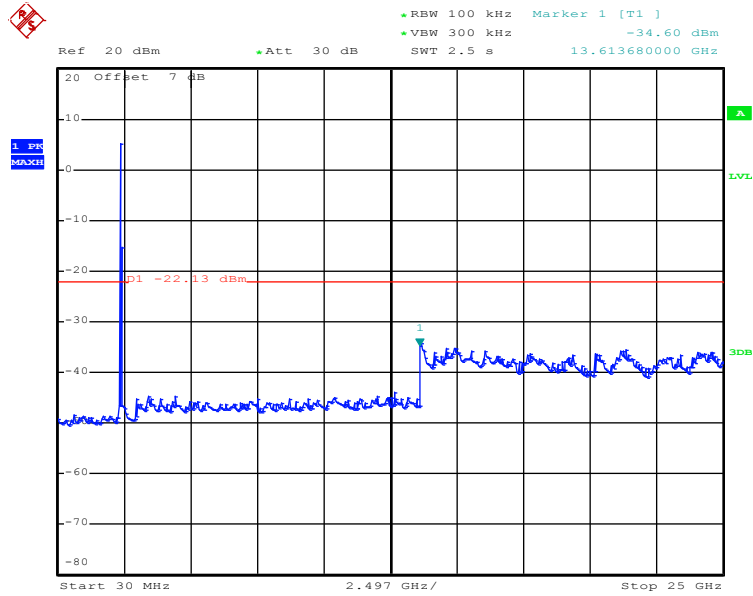
Highest channel



Date: 13.DEC.2016 20:16:22

30MHz~25GHz

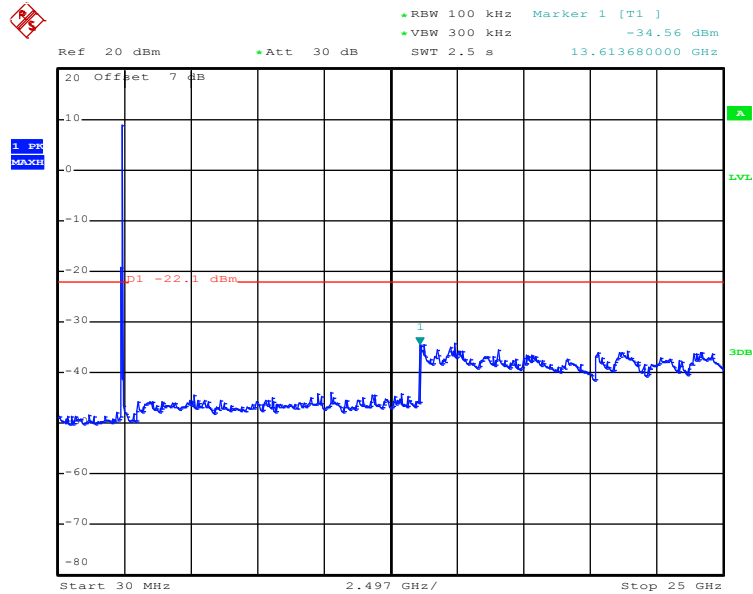
Test mode: 802.11g
Lowest channel



Date: 13.DEC.2016 20:19:49

30MHz~25GHz

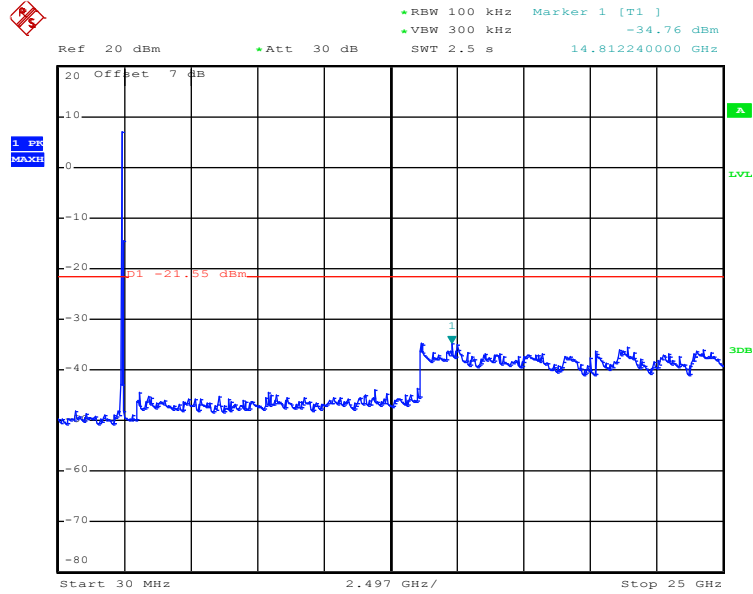
Middle channel



Date: 13.DEC.2016 20:20:38

30MHz~25GHz

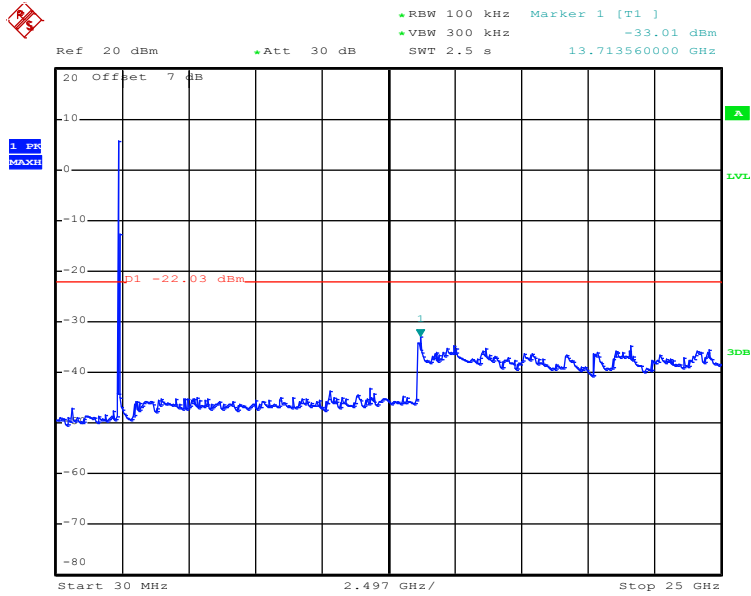
Highest channel



Date: 13.DEC.2016 20:21:16

30MHz~25GHz

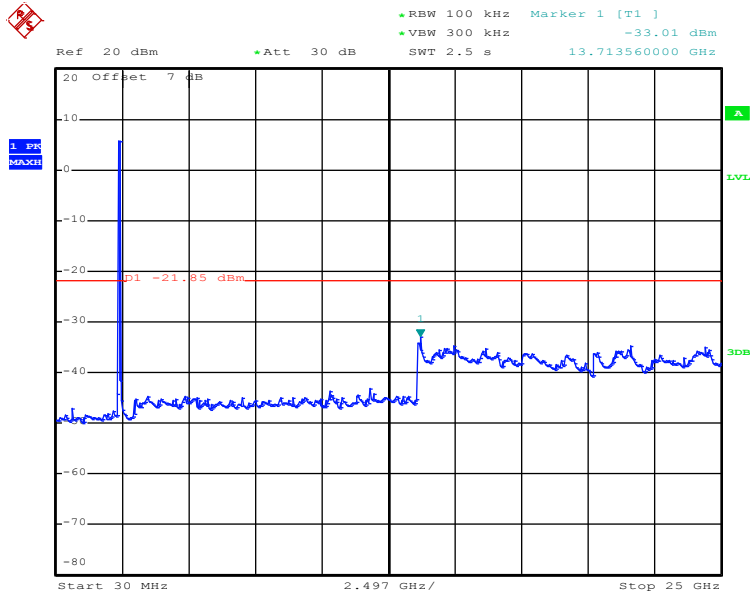
Test mode: 802.11n(H20)
Lowest channel



Date: 13.DEC.2016 20:23:22

30MHz~25GHz

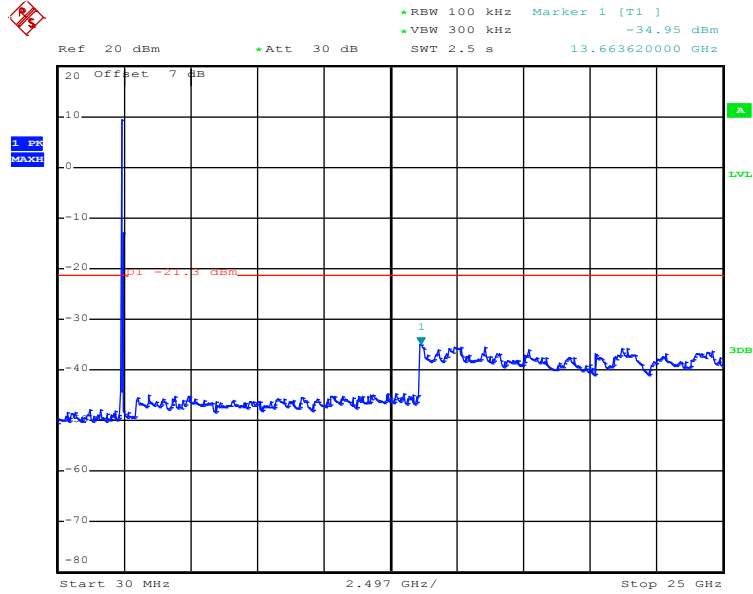
Middle channel



Date: 13.DEC.2016 20:24:01

30MHz~25GHz

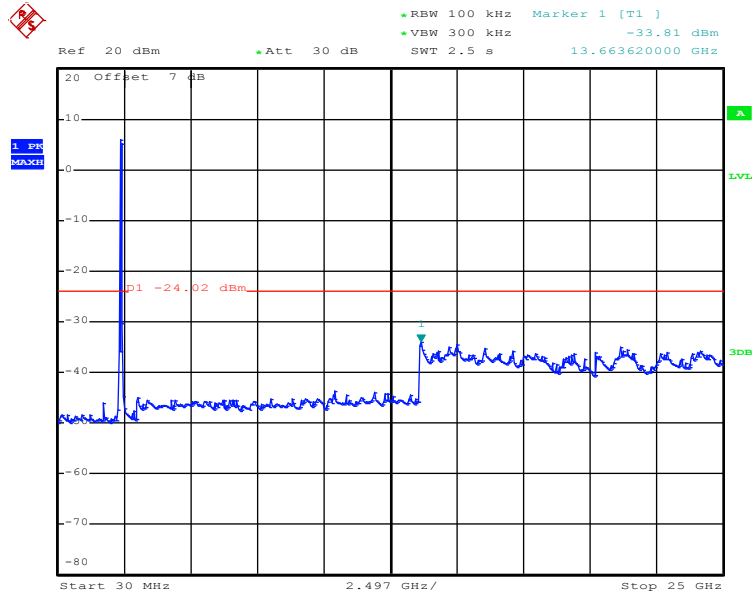
Highest channel



Date: 13.DEC.2016 20:24:55

30MHz~25GHz

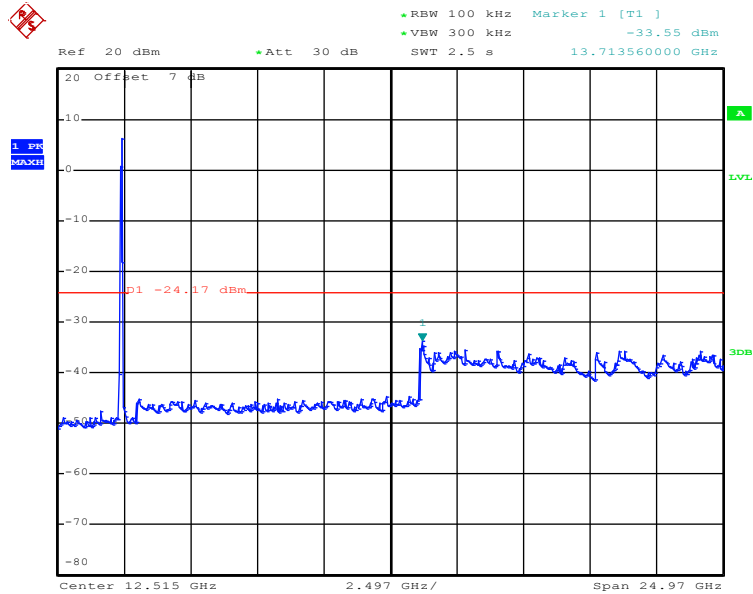
Test mode: 802.11n(H40)
Lowest channel



Date: 13.DEC.2016 20:26:14

30MHz~25GHz

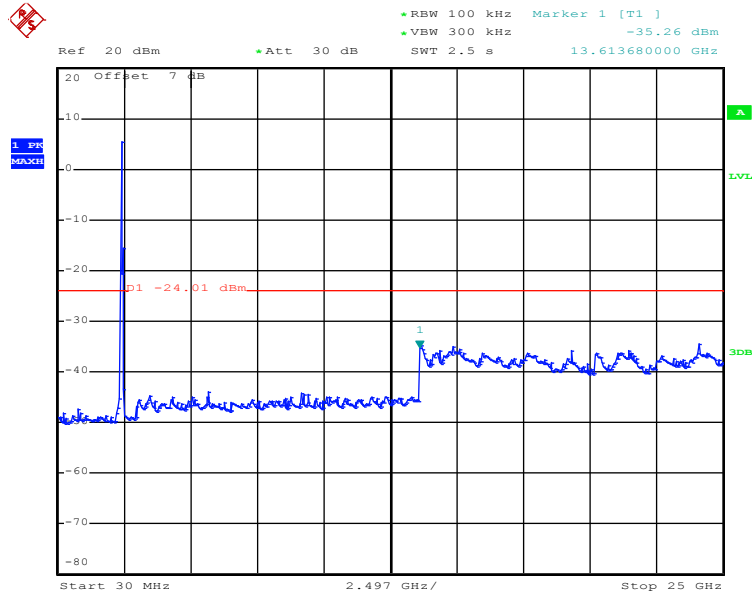
Middle channel



Date: 13.DEC.2016 20:27:00

30MHz~25GHz

Highest channel

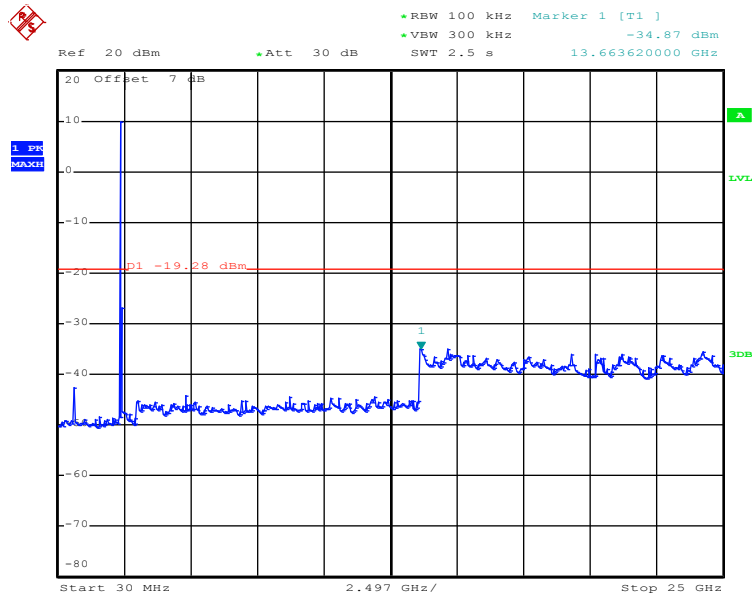


Date: 13.DEC.2016 20:28:01

30MHz~25GHz

TX1

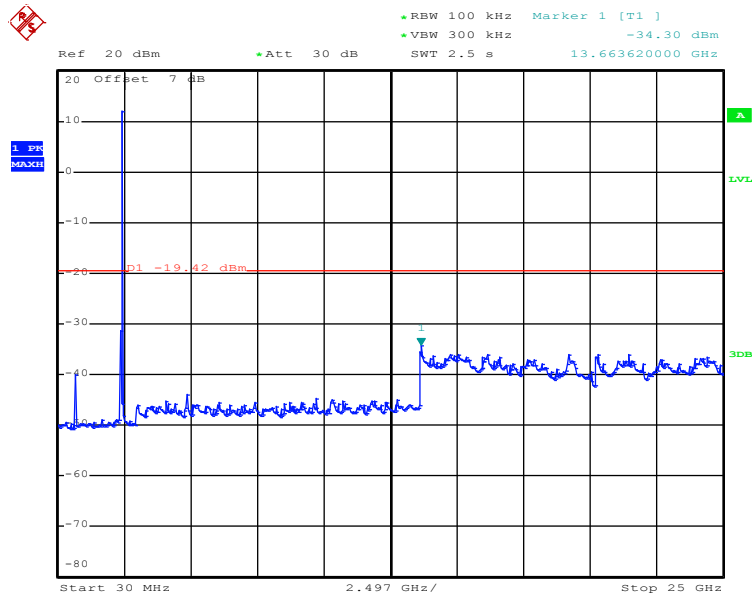
Test mode: 802.11b Lowest channel



Date: 13.DEC.2016 21:39:31

30MHz~25GHz

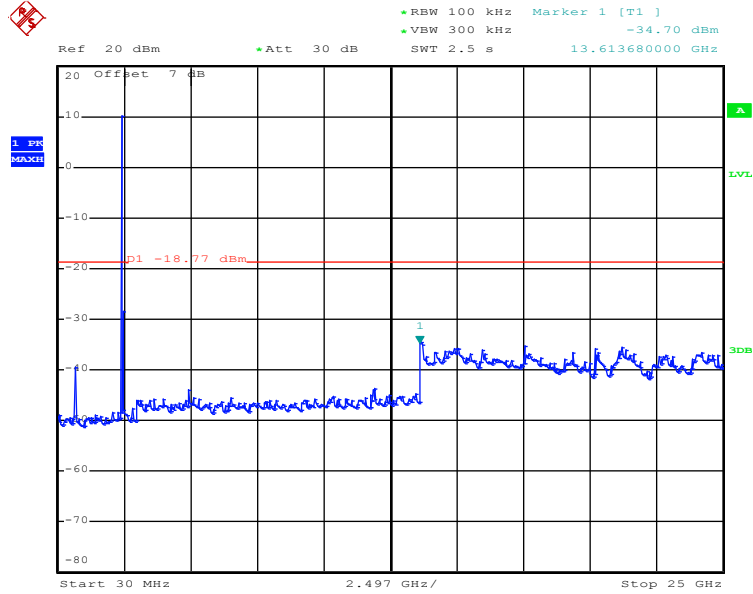
Middle channel



Date: 13.DEC.2016 21:40:03

30MHz~25GHz

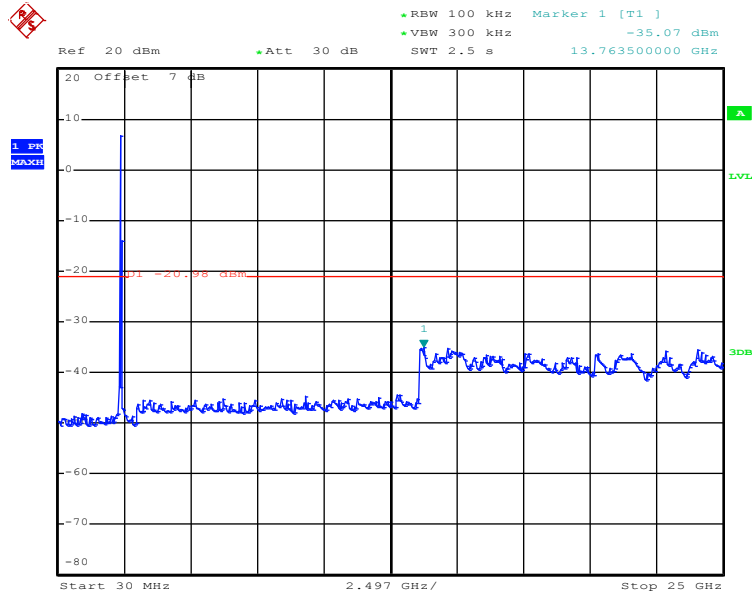
Highest channel



Date: 13.DEC.2016 21:40:37

30MHz~25GHz

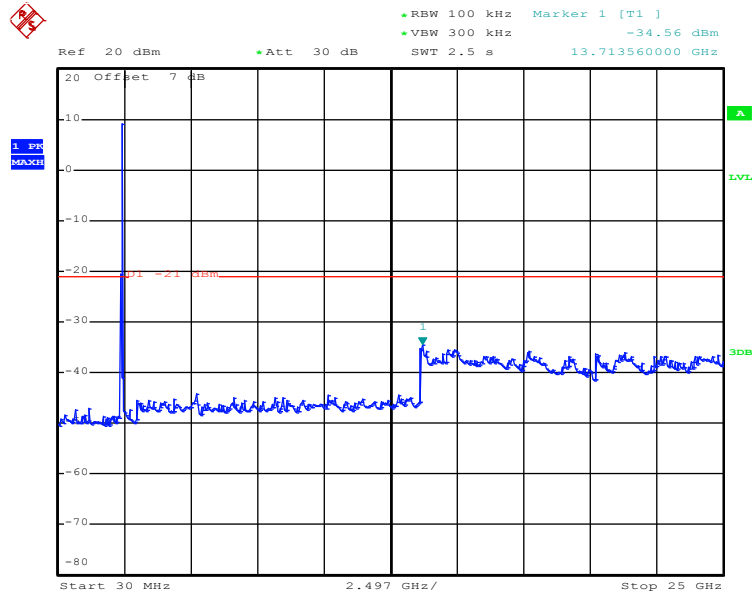
Test mode: 802.11g
Lowest channel



Date: 13.DEC.2016 21:37:32

30MHz~25GHz

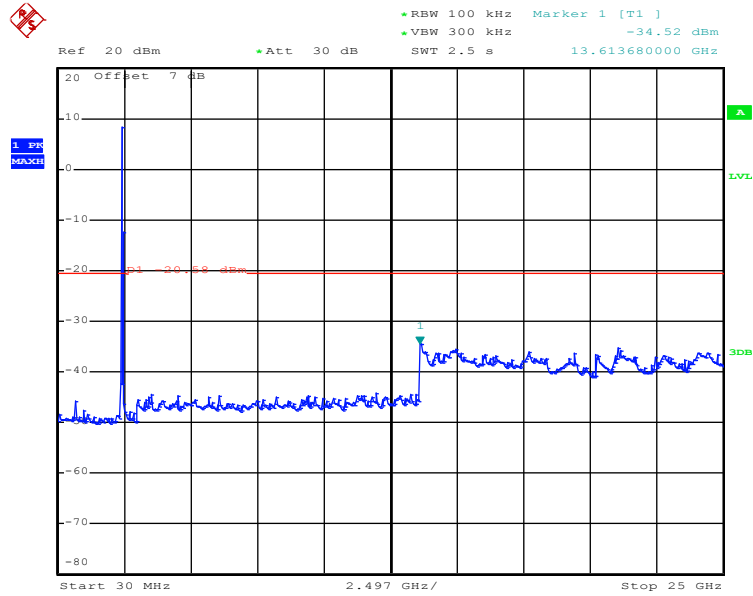
Middle channel



Date: 13.DEC.2016 21:38:10

30MHz~25GHz

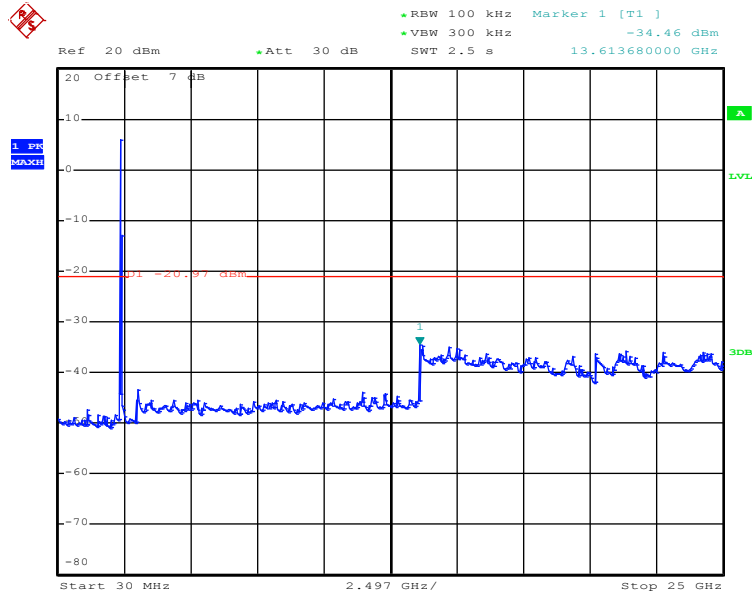
Highest channel



Date: 13.DEC.2016 21:38:55

30MHz~25GHz

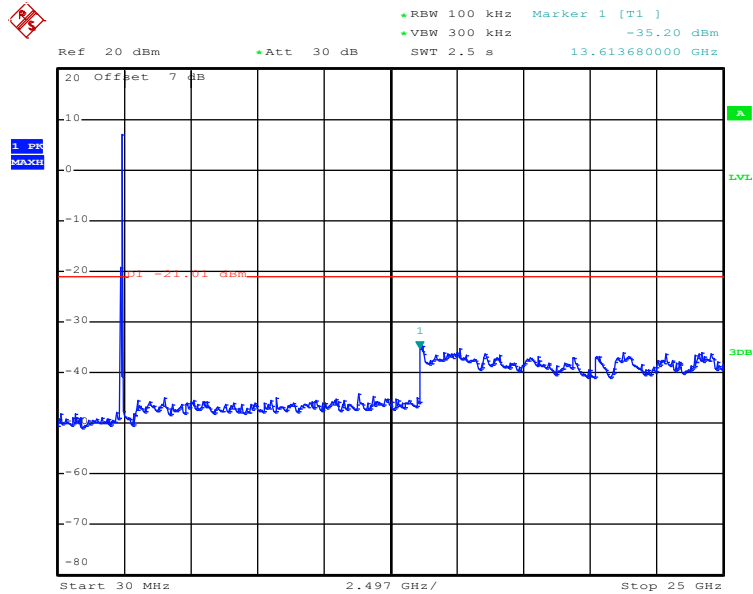
Test mode: 802.11n(H20)
Lowest channel



Date: 13.DEC.2016 21:35:01

30MHz~25GHz

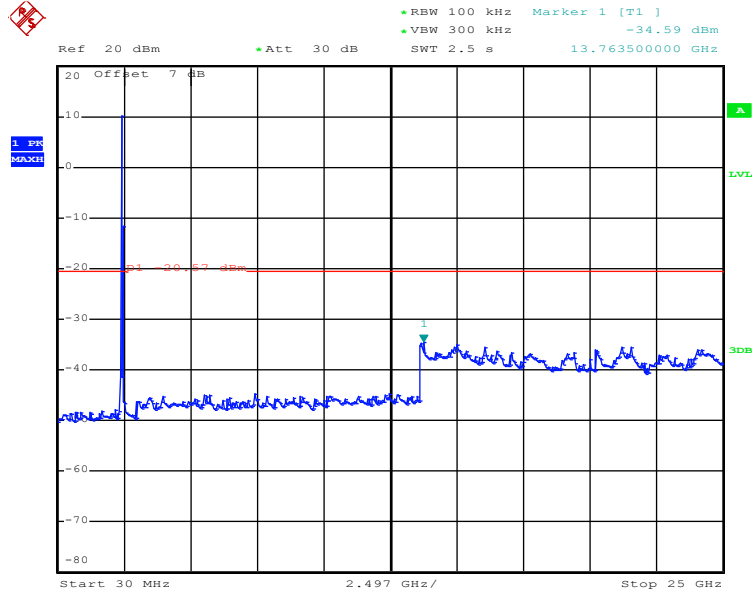
Middle channel



Date: 13.DEC.2016 21:36:58

30MHz~25GHz

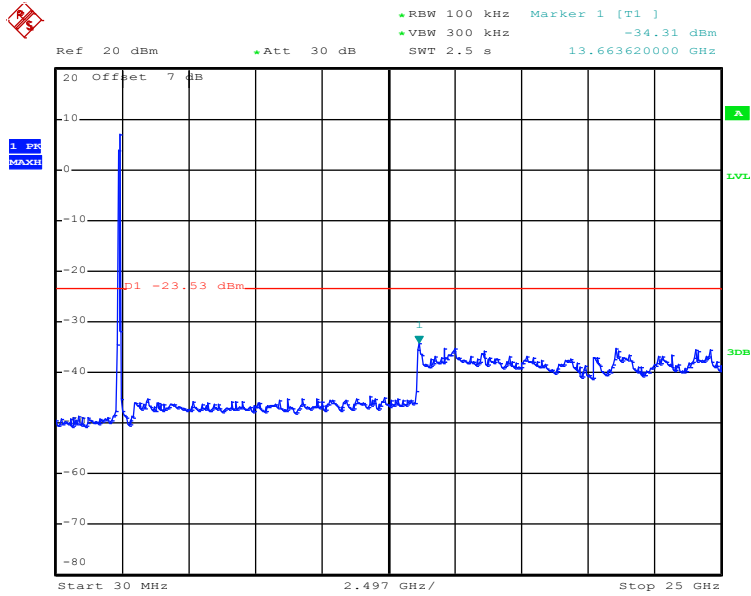
Highest channel



Date: 13.DEC.2016 21:36:24

30MHz~25GHz

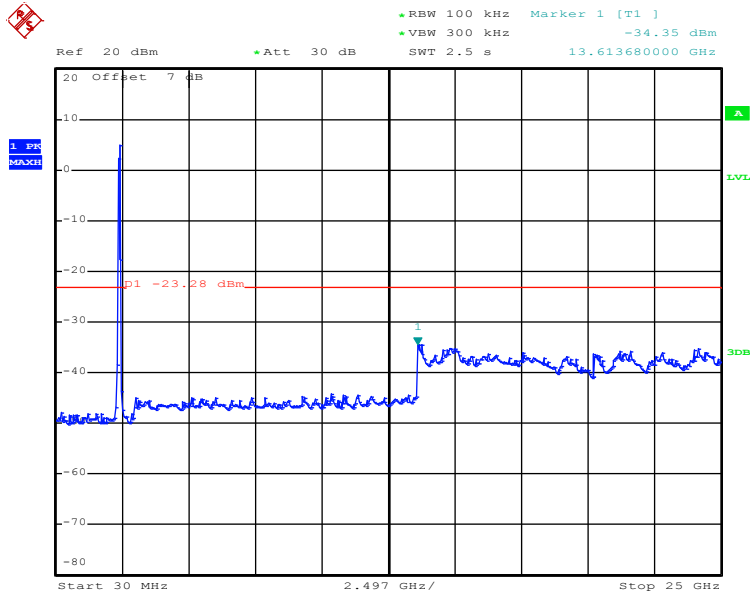
Test mode: 802.11n(H40)
Lowest channel



Date: 13.DEC.2016 21:34:19

30MHz~25GHz

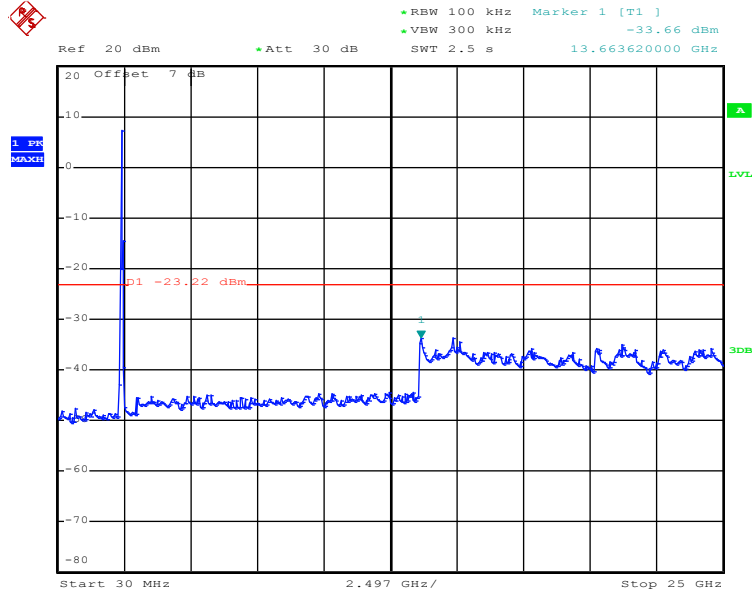
Middle channel



Date: 13.DEC.2016 21:33:35

30MHz~25GHz

Highest channel

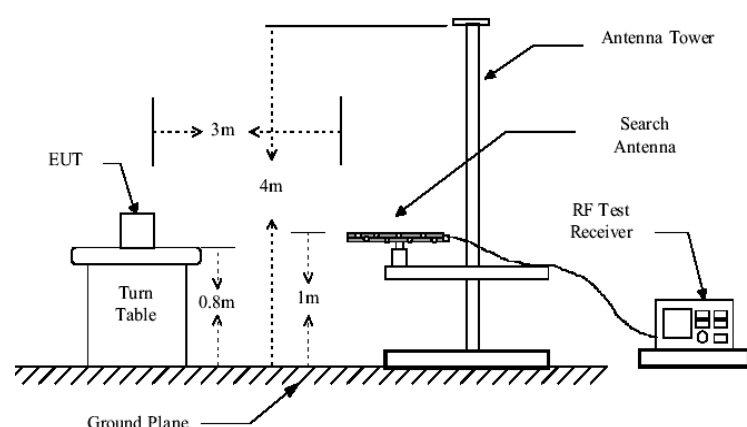
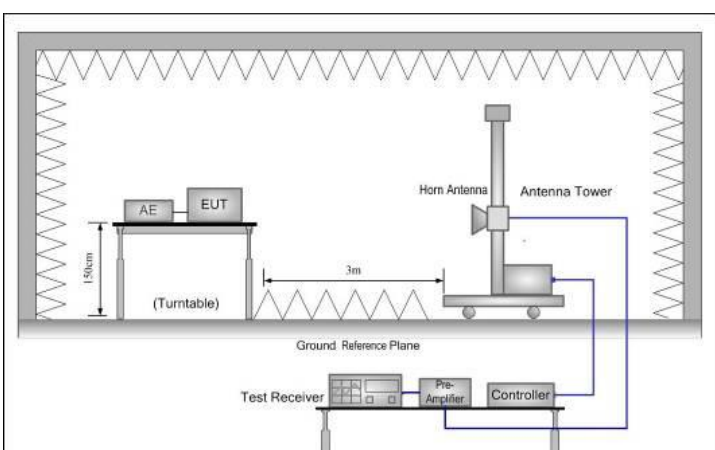


Date: 13.DEC.2016 21:32:24

30MHz~25GHz

6.7.2 Radiated Emission Method

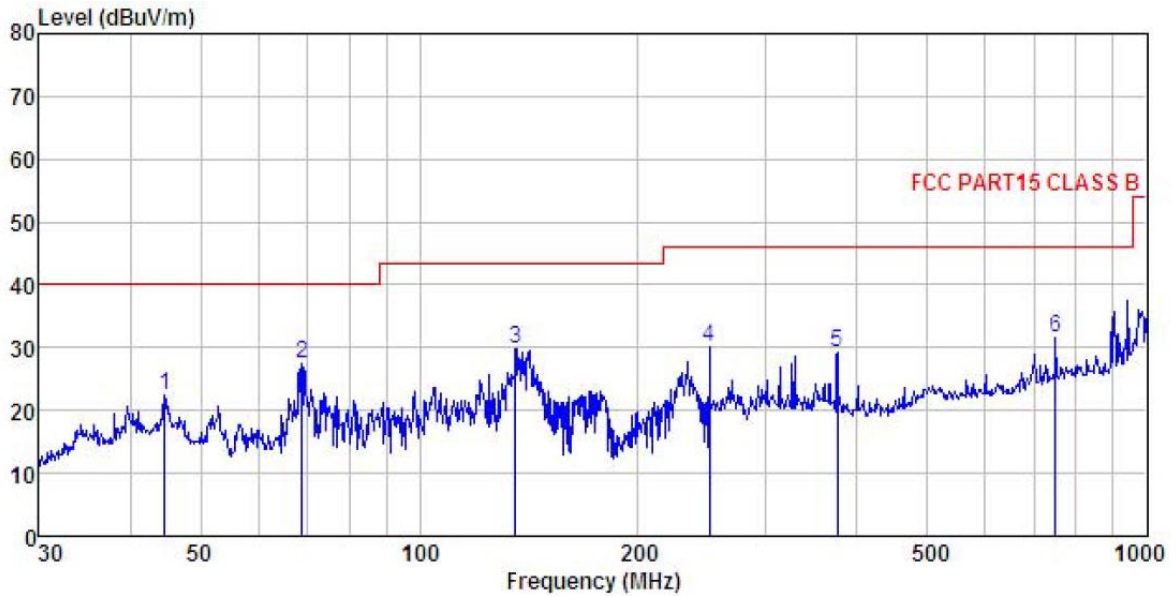
| | | | | | |
|-----------------------|---|--------------------|--------|------------------|------------------|
| Test Requirement: | FCC Part 15 C Section 15.209 and 15.205 | | | | |
| Test Method: | ANSI C63.10:2013 | | | | |
| Test Frequency Range: | 9kHz to 25GHz | | | | |
| Test site: | Measurement Distance: 3m | | | | |
| Receiver setup: | Frequency | Detector | RBW | VBW | Remark |
| | 30MHz-1GHz | Quasi-peak | 120KHz | 300KHz | Quasi-peak Value |
| | Above 1GHz | Peak | 1MHz | 3MHz | Peak Value |
| RMS | | 1MHz | 3MHz | Average Value | |
| Limit: | Frequency | Limit (dBuV/m @3m) | | Remark | |
| | 30MHz-88MHz | 40.0 | | Quasi-peak Value | |
| | 88MHz-216MHz | 43.5 | | Quasi-peak Value | |
| | 216MHz-960MHz | 46.0 | | Quasi-peak Value | |
| | 960MHz-1GHz | 54.0 | | Quasi-peak Value | |
| | Above 1GHz | 54.0 | | Average Value | |
| 74.0 | | Peak Value | | | |
| Test Procedure: | <ol style="list-style-type: none"> 1. The EUT was placed on the top of a rotating table 0.8m(below 1GHz)/1.5m(above 1GHz) above the ground at a 3 meter chamber. 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 antenna height 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 rota table was turned from 0 degrees to 360 degrees to find the maximum reading. 5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. 6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet. | | | | |

| | |
|--------------------------|---|
| <p>Test setup:</p> | <p>Below 1GHz</p>  <p>Above 1GHz</p>  |
| <p>Test Instruments:</p> | <p>Refer to section 5.8 for details</p> |
| <p>Test mode:</p> | <p>Refer to section 5.3 for details</p> |
| <p>Test results:</p> | <p>Passed</p> |
| <p>Remark:</p> | <ol style="list-style-type: none"> 1. Pre-scan all kind of the place mode (X-axis, Y-axis, Z-axis), and found the Y-axis is the worst case. 2. 9 kHz to 30MHz is too low, so only shows the data of above 30MHz in this report. |

MIMO TX mode

Below 1GHz

Horizontal:

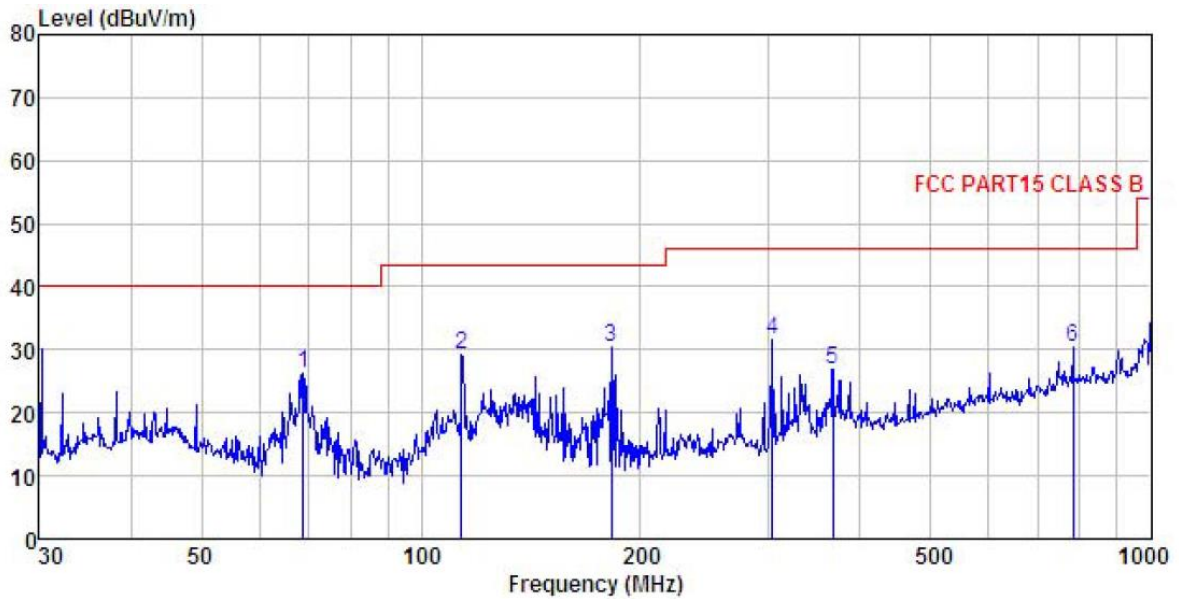


```

Site       : 3m chamber
Condition  : FCC PART15 CLASS B 3m VULB9163(30M3G) HORIZONTAL
Pro        :
EUT        : Broadband Digital Transmission System
Model      : Rambutan-I
Test mode  : TX mode
Power Rating : AC120V/60Hz
Environment : Temp:25.5°C Humi:55%
Test Engineer: MT
Remark     : 2.4Gwifi(10 dBi ant)
    
```

| | Read | Antenna | Cable | Preamp | Level | Limit | Over | |
|------|---------|---------|-------|--------|--------|--------|-------|-----------|
| Freq | Level | Factor | Loss | Factor | Level | Line | Limit | Remark |
| MHz | dBuV | dB/m | dB | dB | dBuV/m | dBuV/m | dB | |
| 1 | 44.587 | 33.63 | 17.48 | 1.28 | 29.86 | 22.53 | 40.00 | -17.47 QP |
| 2 | 68.872 | 48.51 | 7.20 | 1.49 | 29.73 | 27.47 | 40.00 | -12.53 QP |
| 3 | 135.506 | 44.88 | 11.98 | 2.35 | 29.30 | 29.91 | 43.50 | -13.59 QP |
| 4 | 250.301 | 44.02 | 11.88 | 2.81 | 28.54 | 30.17 | 46.00 | -15.83 QP |
| 5 | 375.939 | 39.60 | 15.09 | 3.09 | 28.68 | 29.10 | 46.00 | -16.90 QP |
| 6 | 750.108 | 35.44 | 20.40 | 4.36 | 28.48 | 31.72 | 46.00 | -14.28 QP |

Vertical:



Site : 3m chamber
 Condition : FCC PART15 CLASS B 3m VULB9163(30M3G) VERTICAL
 Pro :
 EUT : Broadband Digital Transmission System
 Model : Rambutan-I
 Test mode : TX mode
 Power Rating : AC120V/60Hz
 Environment : Temp:25.5'C Humi:55%
 Test Engineer: MT
 Remark : 2.4Gwifi(10 dBi ant)

| | ReadAntenna | Cable | Preamp | Limit | Over | | | |
|------|-------------|--------|--------|--------|--------|--------|-------|-----------|
| Freq | Level | Factor | Loss | Factor | Level | Line | Limit | Remark |
| MHz | dBuV | dB/m | dB | dB | dBuV/m | dBuV/m | dB | |
| 1 | 68.872 | 47.44 | 7.20 | 1.49 | 29.73 | 26.40 | 40.00 | -13.60 QP |
| 2 | 113.714 | 45.60 | 10.85 | 2.10 | 29.43 | 29.12 | 43.50 | -14.38 QP |
| 3 | 182.559 | 47.20 | 9.32 | 2.75 | 28.95 | 30.32 | 43.50 | -13.18 QP |
| 4 | 303.544 | 44.26 | 12.83 | 2.95 | 28.46 | 31.58 | 46.00 | -14.42 QP |
| 5 | 366.823 | 37.74 | 14.78 | 3.09 | 28.64 | 26.97 | 46.00 | -19.03 QP |
| 6 | 782.345 | 33.96 | 20.53 | 4.35 | 28.29 | 30.55 | 46.00 | -15.45 QP |

Above 1GHz

| Test mode: 802.11b | | | Test channel: Lowest | | | Remark: Peak | | |
|--------------------|-------------------|-----------------------|----------------------|--------------------|----------------|---------------------|-----------------|------------|
| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polar. |
| 4824.00 | 53.17 | 36.06 | 6.81 | 41.82 | 54.22 | 74.00 | -19.78 | Vertical |
| 4824.00 | 50.42 | 36.06 | 6.81 | 41.82 | 51.47 | 74.00 | -22.53 | Horizontal |
| Test mode: 802.11b | | | Test channel: Lowest | | | Remark: Average | | |
| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polar. |
| 4824.00 | 47.06 | 36.06 | 6.81 | 41.82 | 48.11 | 54.00 | -5.89 | Vertical |
| 4824.00 | 43.26 | 36.06 | 6.81 | 41.82 | 44.31 | 54.00 | -9.69 | Horizontal |

| Test mode: 802.11b | | | Test channel: Middle | | | Remark: Peak | | |
|--------------------|-------------------|-----------------------|----------------------|--------------------|----------------|---------------------|-----------------|------------|
| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polar. |
| 4874.00 | 54.19 | 36.32 | 6.85 | 41.84 | 55.52 | 74.00 | -18.48 | Vertical |
| 4874.00 | 50.26 | 36.32 | 6.85 | 41.84 | 51.59 | 74.00 | -22.41 | Horizontal |
| Test mode: 802.11b | | | Test channel: Middle | | | Remark: Average | | |
| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polar. |
| 4874.00 | 42.36 | 36.32 | 6.85 | 41.84 | 43.69 | 54.00 | -10.31 | Vertical |
| 4874.00 | 48.51 | 36.32 | 6.85 | 41.84 | 49.84 | 54.00 | -4.16 | Horizontal |

| Test mode: 802.11b | | | Test channel: Highest | | | Remark: Peak | | |
|--------------------|-------------------|-----------------------|-----------------------|--------------------|----------------|---------------------|-----------------|------------|
| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polar. |
| 4924.00 | 55.12 | 36.58 | 6.89 | 41.86 | 56.73 | 74.00 | -17.27 | Vertical |
| 4924.00 | 50.01 | 36.58 | 6.89 | 41.86 | 51.62 | 74.00 | -22.38 | Horizontal |
| Test mode: 802.11b | | | Test channel: Highest | | | Remark: Average | | |
| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polar. |
| 4924.00 | 49.25 | 36.58 | 6.89 | 41.86 | 50.86 | 54.00 | -3.14 | Vertical |
| 4924.00 | 46.32 | 36.58 | 6.89 | 41.86 | 47.93 | 54.00 | -6.07 | Horizontal |

Remark:

1. *Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

| Test mode: 802.11g | | | Test channel: Lowest | | | Remark: Peak | | |
|--------------------|-------------------|-----------------------|----------------------|--------------------|---------------|---------------------|-----------------|------------|
| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Level (dBuV/) | Limit Line (dBuV/m) | Over Limit (dB) | Polar. |
| 4824.00 | 49.58 | 36.06 | 6.81 | 41.82 | 50.63 | 74.00 | -23.37 | Vertical |
| 4824.00 | 48.67 | 36.06 | 6.81 | 41.82 | 49.72 | 74.00 | -24.28 | Horizontal |
| Test mode: 802.11g | | | Test channel: Lowest | | | Remark: Average | | |
| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Level (dBuV/) | Limit Line (dBuV/m) | Over Limit (dB) | Polar. |
| 4824.00 | 48.51 | 36.06 | 6.81 | 41.82 | 49.56 | 54.00 | -4.44 | Vertical |
| 4824.00 | 44.03 | 36.06 | 6.81 | 41.82 | 45.08 | 54.00 | -8.92 | Horizontal |

| Test mode: 802.11g | | | Test channel: Middle | | | Remark: Peak | | |
|--------------------|-------------------|-----------------------|----------------------|--------------------|---------------|---------------------|-----------------|------------|
| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Level (dBuV/) | Limit Line (dBuV/m) | Over Limit (dB) | Polar. |
| 4874.00 | 52.59 | 36.32 | 6.85 | 41.84 | 53.92 | 74.00 | -20.08 | Vertical |
| 4874.00 | 50.37 | 36.32 | 6.85 | 41.84 | 51.70 | 74.00 | -22.30 | Horizontal |
| Test mode: 802.11g | | | Test channel: Middle | | | Remark: Average | | |
| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Level (dBuV/) | Limit Line (dBuV/m) | Over Limit (dB) | Polar. |
| 4874.00 | 42.17 | 36.32 | 6.85 | 41.84 | 43.50 | 54.00 | -10.50 | Vertical |
| 4874.00 | 47.79 | 36.32 | 6.85 | 41.84 | 49.12 | 54.00 | -4.88 | Horizontal |

| Test mode: 802.11g | | | Test channel: Highest | | | Remark: Peak | | |
|--------------------|-------------------|-----------------------|-----------------------|--------------------|-----------------|---------------------|-----------------|------------|
| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polar. |
| 4924.00 | 54.16 | 36.58 | 6.89 | 41.86 | 55.77 | 74.00 | -18.23 | Vertical |
| 4924.00 | 50.01 | 36.58 | 6.89 | 41.86 | 51.62 | 74.00 | -22.38 | Horizontal |
| Test mode: 802.11g | | | Test channel: Highest | | | Remark: Average | | |
| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polar. |
| 4924.00 | 48.12 | 36.58 | 6.89 | 41.86 | 49.73 | 54.00 | -4.27 | Vertical |
| 4924.00 | 46.36 | 36.58 | 6.89 | 41.86 | 47.97 | 54.00 | -6.03 | Horizontal |

Remark:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Pre-amplifier Factor
2. The emission levels of other frequencies are very lower than the limit and not show in test report.

| Test mode: 802.11n(H20) | | | Test channel: Lowest | | | Remark: Peak | | |
|-------------------------|-------------------|-----------------------|----------------------|--------------------|----------------|---------------------|-----------------|------------|
| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polar. |
| 4824.00 | 49.25 | 36.06 | 6.81 | 41.82 | 50.30 | 74.00 | -23.70 | Vertical |
| 4824.00 | 49.01 | 36.06 | 6.81 | 41.82 | 50.06 | 74.00 | -23.94 | Horizontal |
| Test mode: 802.11n(H20) | | | Test channel: Lowest | | | Remark: Average | | |
| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polar. |
| 4824.00 | 47.34 | 36.06 | 6.81 | 41.82 | 48.39 | 54.00 | -5.61 | Vertical |
| 4824.00 | 44.02 | 36.06 | 6.81 | 41.82 | 45.07 | 54.00 | -8.93 | Horizontal |

| Test mode: 802.11n(H20) | | | Test channel: Middle | | | Remark: Peak | | |
|-------------------------|-------------------|-----------------------|----------------------|--------------------|----------------|---------------------|-----------------|------------|
| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polar. |
| 4874.00 | 53.01 | 36.32 | 6.85 | 41.84 | 54.34 | 74.00 | -19.66 | Vertical |
| 4874.00 | 50.36 | 36.32 | 6.85 | 41.84 | 51.69 | 74.00 | -22.31 | Horizontal |
| Test mode: 802.11n(H20) | | | Test channel: Middle | | | Remark: Average | | |
| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polar. |
| 4874.00 | 43.15 | 36.32 | 6.85 | 41.84 | 44.48 | 54.00 | -9.52 | Vertical |
| 4874.00 | 46.63 | 36.32 | 6.85 | 41.84 | 47.96 | 54.00 | -6.04 | Horizontal |

| Test mode: 802.11n(H20) | | | Test channel: Highest | | | Remark: Peak | | |
|-------------------------|-------------------|-----------------------|-----------------------|--------------------|----------------|---------------------|-----------------|------------|
| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polar. |
| 4924.00 | 53.15 | 36.58 | 6.89 | 41.86 | 54.76 | 74.00 | -19.24 | Vertical |
| 4924.00 | 49.96 | 36.58 | 6.89 | 41.86 | 51.57 | 74.00 | -22.43 | Horizontal |
| Test mode: 802.11n(H20) | | | Test channel: Highest | | | Remark: Average | | |
| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polar. |
| 4924.00 | 47.78 | 36.58 | 6.89 | 41.86 | 49.39 | 54.00 | -4.61 | Vertical |
| 4924.00 | 47.59 | 36.58 | 6.89 | 41.86 | 49.20 | 54.00 | -4.80 | Horizontal |

Remark:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Pre-amplifier Factor
2. The emission levels of other frequencies are very lower than the limit and not show in test report.

| Test mode: 802.11n(H40) | | | Test channel: Lowest | | | Remark: Peak | | |
|-------------------------|-------------------|-----------------------|----------------------|--------------------|----------------|---------------------|-----------------|------------|
| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polar. |
| 4844.00 | 49.63 | 36.06 | 6.81 | 41.82 | 50.68 | 74.00 | -23.32 | Vertical |
| 4844.00 | 49.82 | 36.06 | 6.81 | 41.82 | 50.87 | 74.00 | -23.13 | Horizontal |
| Test mode: 802.11n(H40) | | | Test channel: Lowest | | | Remark: Average | | |
| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polar. |
| 4844.00 | 47.13 | 36.06 | 6.81 | 41.82 | 48.18 | 54.00 | -5.82 | Vertical |
| 4844.00 | 43.89 | 36.06 | 6.81 | 41.82 | 44.94 | 54.00 | -9.06 | Horizontal |

| Test mode: 802.11n(H40) | | | Test channel: Middle | | | Remark: Peak | | |
|-------------------------|-------------------|-----------------------|----------------------|--------------------|----------------|---------------------|-----------------|------------|
| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polar. |
| 4874.00 | 52.26 | 36.32 | 6.85 | 41.84 | 53.59 | 74.00 | -20.41 | Vertical |
| 4874.00 | 50.02 | 36.32 | 6.85 | 41.84 | 51.35 | 74.00 | -22.65 | Horizontal |
| Test mode: 802.11n(H40) | | | Test channel: Middle | | | Remark: Average | | |
| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polar. |
| 4874.00 | 43.71 | 36.32 | 6.85 | 41.84 | 45.04 | 54.00 | -8.96 | Vertical |
| 4874.00 | 47.02 | 36.32 | 6.85 | 41.84 | 48.35 | 54.00 | -5.65 | Horizontal |

| Test mode: 802.11n(H40) | | | Test channel: Highest | | | Remark: Peak | | |
|-------------------------|-------------------|-----------------------|-----------------------|--------------------|----------------|---------------------|-----------------|------------|
| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polar. |
| 4904.00 | 52.85 | 36.45 | 6.87 | 41.85 | 54.32 | 74.00 | -19.68 | Vertical |
| 4904.00 | 48.86 | 36.45 | 6.87 | 41.85 | 50.33 | 74.00 | -23.67 | Horizontal |
| Test mode: 802.11n(H40) | | | Test channel: Highest | | | Remark: Average | | |
| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polar. |
| 4904.00 | 46.36 | 36.45 | 6.87 | 41.85 | 47.83 | 54.00 | -6.17 | Vertical |
| 4904.00 | 46.57 | 36.45 | 6.87 | 41.85 | 48.04 | 54.00 | -5.96 | Horizontal |

Remark:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Pre-amplifier Factor
2. The emission levels of other frequencies are very lower than the limit and not show in test report.