

## TEST REPORT

**Product** : Yanshee Robot  
**Trade mark** : UBTCH  
**Model/Type reference** : ERHA101  
**Serial Number** : N/A  
**Report Number** : EED32L00193803  
**FCC ID** : 2AHJX-YANSHEE-1  
**Date of Issue** : Aug. 26, 2019  
**Test Standards** : 47 CFR Part 15Subpart C  
**Test result** : PASS

Prepared for:

**UBTECH ROBOTICS CORP LTD**

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Date:

Aug. 26, 2019

Check No.: 3096399624



## 2 Version

| Version No. | Date       | Description |
|-------------|------------|-------------|
| 00          | 2019-08-26 | Original    |
|             |            |             |
|             |            |             |

### 3 Test Summary

| Test Item                                                                | Test Requirement                                   | Test method      | Result |
|--------------------------------------------------------------------------|----------------------------------------------------|------------------|--------|
| <b>Antenna Requirement</b>                                               | 47 CFR Part 15 Subpart C Section 15.203/15.247 (c) | ANSI C63.10-2013 | PASS   |
| <b>AC Power Line Conducted Emission</b>                                  | 47 CFR Part 15 Subpart C Section 15.207            | ANSI C63.10-2013 | PASS   |
| <b>Conducted Peak Output Power</b>                                       | 47 CFR Part 15 Subpart C Section 15.247 (b)(3)     | ANSI C63.10-2013 | PASS   |
| <b>6dB Occupied Bandwidth</b>                                            | 47 CFR Part 15 Subpart C Section 15.247 (a)(2)     | ANSI C63.10-2013 | PASS   |
| <b>Power Spectral Density</b>                                            | 47 CFR Part 15 Subpart C Section 15.247 (e)        | ANSI C63.10-2013 | PASS   |
| <b>Band-edge for RF Conducted Emissions</b>                              | 47 CFR Part 15 Subpart C Section 15.247(d)         | ANSI C63.10-2013 | PASS   |
| <b>RF Conducted Spurious Emissions</b>                                   | 47 CFR Part 15 Subpart C Section 15.247(d)         | ANSI C63.10-2013 | PASS   |
| <b>Radiated Spurious Emissions</b>                                       | 47 CFR Part 15 Subpart C Section 15.205/15.209     | ANSI C63.10-2013 | PASS   |
| <b>Restricted bands around fundamental frequency (Radiated Emission)</b> | 47 CFR Part 15 Subpart C Section 15.205/15.209     | ANSI C63.10-2013 | PASS   |

Remark:

Test according to ANSI C63.4-2014 & ANSI C63.10-2013.

The tested sample(s) and the sample information are provided by the client.

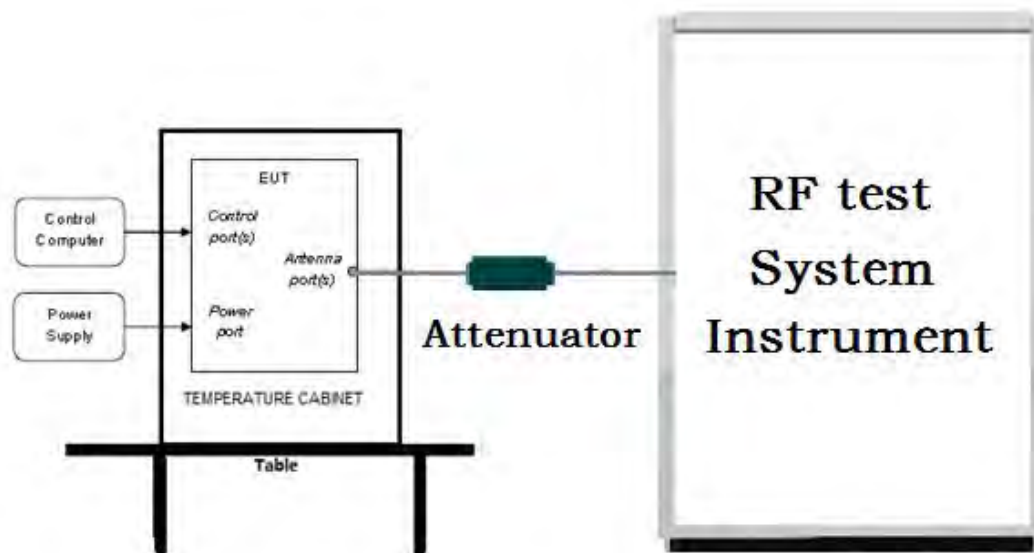
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## 5 Test Requirement

### 5.1 Test setup

#### 5.1.1 For Conducted test setup



#### 5.1.2 For Radiated Emissions test setup

Radiated Emissions setup:

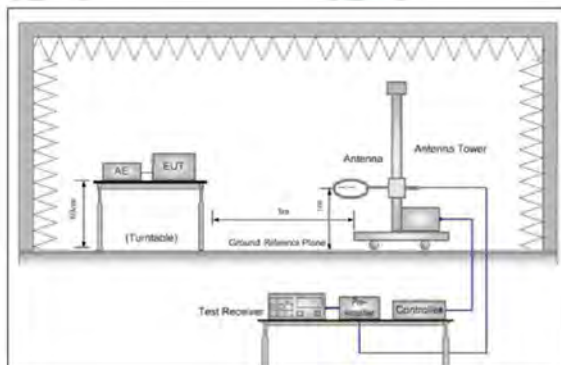


Figure 1. Below 30MHz

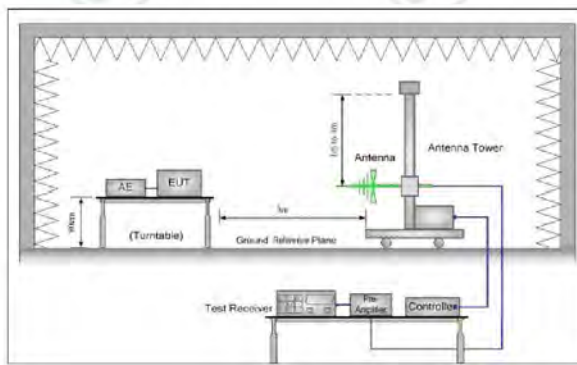


Figure 2. 30MHz to 1GHz

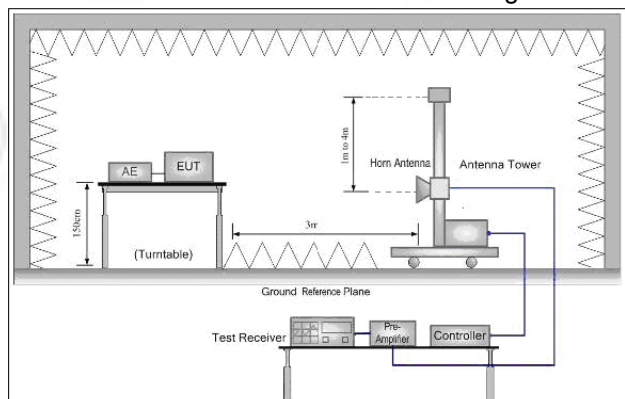
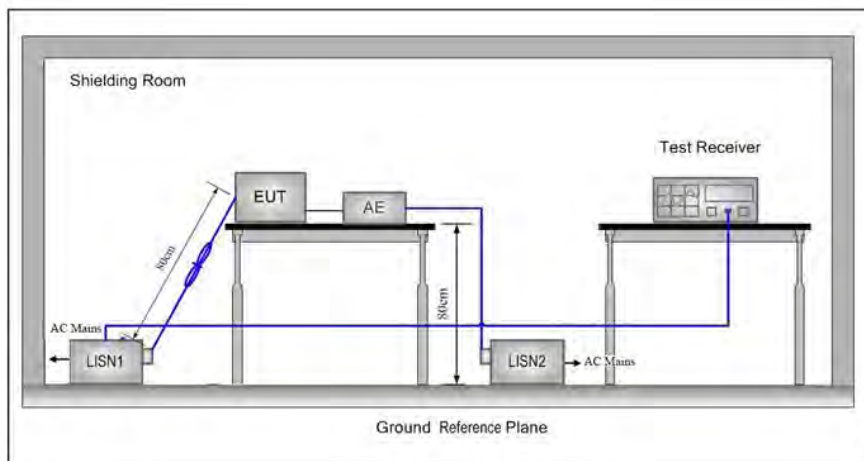


Figure 3. Above 1GHz

### 5.1.3 For Conducted Emissions test setup

#### Conducted Emissions setup



## 5.2 Test Environment

### Operating Environment:

|                       |          |
|-----------------------|----------|
| Temperature:          | 24.0 °C  |
| Humidity:             | 58 % RH  |
| Atmospheric Pressure: | 1010mbar |

## 5.3 Test Condition

### Test channel:

| Test Mode          | Tx/Rx                                                                                    | RF Channel |           |           |
|--------------------|------------------------------------------------------------------------------------------|------------|-----------|-----------|
|                    |                                                                                          | Low(L)     | Middle(M) | High(H)   |
| 802.11b/g/n(HT20)  | 2412MHz ~2462 MHz                                                                        | Channel 1  | Channel 6 | Channel11 |
|                    |                                                                                          | 2412MHz    | 2437MHz   | 2462MHz   |
|                    |                                                                                          | 2422MHz    | 2437MHz   | 2452MHz   |
| Transmitting mode: | Keep the EUT in transmitting mode with all kind of modulation and all kind of data rate. |            |           |           |

Test mode:

Pre-scan under all rate at lowest channel 1

|            |                |        |          |        |        |        |          |        |
|------------|----------------|--------|----------|--------|--------|--------|----------|--------|
| Mode       | 802.11b        |        |          |        |        |        |          |        |
| Data Rate  | 1Mbps          | 2Mbps  | 5.5Mbps  | 11Mbps |        |        |          |        |
| Power(dBm) | 18.19          | 18.07  | 17.97    | 17.89  |        |        |          |        |
| Mode       | 802.11g        |        |          |        |        |        |          |        |
| Data Rate  | 6Mbps          | 9Mbps  | 12Mbps   | 18Mbps | 24Mbps | 36Mbps | 48Mbps   | 54Mbps |
| Power(dBm) | 17.85          | 17.82  | 17.78    | 17.72  | 17.68  | 17.65  | 17.61    | 17.58  |
| Mode       | 802.11n (HT20) |        |          |        |        |        |          |        |
| Data Rate  | 6.5Mbps        | 13Mbps | 19.5Mbps | 26Mbps | 39Mbps | 52Mbps | 58.5Mbps | 65Mbps |
| Power(dBm) | 16.83          | 16.78  | 16.69    | 16.57  | 16.51  | 16.45  | 16.41    | 16.39  |

Through Pre-scan, 11Mbps of rate is the worst case of 802.11b; 6Mbps of rate is the worst case of 802.11g; 6.5Mbps of rate is the worst case of 802.11n(HT20).

## 6 General Information

### 6.1 Client Information

|                          |                                                                                                                  |
|--------------------------|------------------------------------------------------------------------------------------------------------------|
| Applicant:               | UBTECH ROBOTICS CORP LTD                                                                                         |
| Address of Applicant:    | 16th and 22nd Floor, Block C1, Nanshan I Park, No.1001 Xueyuan Road, Nanshan District, Shenzhen City, P.R.CHINA  |
| Manufacturer:            | UBTECH ROBOTICS CORP LTD                                                                                         |
| Address of Manufacturer: | 16th and 22nd Floor, Block C1, Nanshan I Park, No.1001 Xueyuan Road, Nanshan District, Shenzhen City, P.R.CHINA  |
| Factory:                 | UBTECH ROBOTICS CORP LTD BAOAN BRANCH                                                                            |
| Address of Factory:      | 1-2 Floor, B Block, Huilongda Industry Park, Shilongzai, Shiyan Street, Baoan District, Shenzhen City, P.R.CHINA |

### 6.2 General Description of EUT

|                                  |                                |                                                                               |
|----------------------------------|--------------------------------|-------------------------------------------------------------------------------|
| Product Name:                    | Yanshee Robot                  |                                                                               |
| Model No.(EUT):                  | ERHA101                        |                                                                               |
| Trade Mark:                      | UBTCH                          |                                                                               |
| EUT Supports Radios application: | WiFi 802.11b/g/n(20MHz)        |                                                                               |
| Power Supply:                    | Adapter:                       | MODEL: HKA03609640-8A<br>INPUT: 100-240V 1.5A, 50/60Hz<br>OUTPUT: 9.6V---4.0A |
|                                  | Battery:                       | Model: Yanshee 1.1-2S1P<br>Capacity: 7.4V, 3000mAh/ 22.2Wh                    |
| Sample Received Date:            | Jul. 22, 2019                  |                                                                               |
| Sample tested Date:              | Jul. 22, 2019 to Aug. 23, 2019 |                                                                               |

### 6.3 Product Specification subjective to this standard

|                        |                                                    |
|------------------------|----------------------------------------------------|
| Operation Frequency:   | IEEE 802.11b/g/n(HT20): 2412MHz to 2462MHz         |
| Channel Numbers:       | IEEE 802.11b/g, IEEE 802.11n HT20: 11 Channels     |
| Channel Separation:    | 5MHz                                               |
| Type of Modulation:    | DSSS, OFDM                                         |
| Test Power Grade:      | 802.11b:18<br>802.11g:12/11/11<br>802.11n:11/11/10 |
| Test Software of EUT:  | art.exe (manufacturer declare )                    |
| Antenna Type and Gain: | Type: Chip antenna<br>Gain:1.5dBi                  |
| Test Voltage:          | DC 9.6V                                            |

| Operation Frequency each of channel(802.11b/g/n HT20) |           |         |           |         |           |         |           |
|-------------------------------------------------------|-----------|---------|-----------|---------|-----------|---------|-----------|
| 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   |         |           |

## 6.4 Description of Support Units

The EUT has been tested independently

## 6.5 Test Location

All tests were performed at:

Centre Testing International Group Co., Ltd

Building C, Hongwei Industrial Park Block 70, Bao'an District, Shenzhen, China

Telephone: +86 (0) 755 33683668 Fax: +86 (0) 755 33683385

No tests were sub-contracted.

FCC Designation No.: CN1164

## 6.6 Deviation from Standards

None.

## 6.7 Abnormalities from Standard Conditions

None.

## 6.8 Other Information Requested by the Customer

None.

## 6.9 Measurement Uncertainty (95% confidence levels, k=2)

| No. | Item                            | Measurement Uncertainty |
|-----|---------------------------------|-------------------------|
| 1   | Radio Frequency                 | $7.9 \times 10^{-8}$    |
| 2   | RF power, conducted             | 0.46dB (30MHz-1GHz)     |
|     |                                 | 0.55dB (1GHz-18GHz)     |
| 3   | Radiated Spurious emission test | 4.3dB (30MHz-1GHz)      |
|     |                                 | 4.5dB (1GHz-12.75GHz)   |
| 4   | Conduction emission             | 3.5dB (9kHz to 150kHz)  |
|     |                                 | 3.1dB (150kHz to 30MHz) |
| 5   | Temperature test                | 0.64°C                  |
| 6   | Humidity test                   | 3.8%                    |
| 7   | DC power voltages               | 0.026%                  |

## 7 Equipment List

| RF test system                   |               |                              |               |                        |                            |
|----------------------------------|---------------|------------------------------|---------------|------------------------|----------------------------|
| Equipment                        | Manufacturer  | Model No.                    | Serial Number | Cal. Date (mm-dd-yyyy) | Cal. Due date (mm-dd-yyyy) |
| Signal Generator                 | Keysight      | E8257D                       | MY53401106    | 03-01-2019             | 02-28-2020                 |
| Spectrum Analyzer                | Keysight      | N9010A                       | MY54510339    | 03-01-2019             | 02-28-2020                 |
| Signal Generator                 | Keysight      | N5182B                       | MY53051549    | 03-01-2019             | 02-28-2020                 |
| High-pass filter                 | Sinoscite     | FL3CX03WG1<br>8NM12-0398-002 | ---           | 01-09-2019             | 01-08-2020                 |
| High-pass filter                 | MICRO-TRONICS | SPA-F-63029-4                | ---           | 01-09-2019             | 01-08-2020                 |
| DC Power                         | Keysight      | E3642A                       | MY54426035    | 03-01-2019             | 02-28-2020                 |
| PC-1                             | Lenovo        | R4960d                       | ---           | 03-01-2019             | 02-28-2020                 |
| BT&WI-FI Automatic control       | R&S           | OSP120                       | 101374        | 03-01-2019             | 02-28-2020                 |
| RF control unit                  | JS Tonscend   | JS0806-2                     | 15860006      | 03-01-2019             | 02-28-2020                 |
| RF control unit                  | JS Tonscend   | JS0806-1                     | 15860004      | 03-01-2019             | 02-28-2020                 |
| RF control unit                  | JS Tonscend   | JS0806-4                     | 158060007     | 03-01-2019             | 02-28-2020                 |
| BT&WI-FI Automatic test software | JS Tonscend   | JS1120-2                     | ---           | 03-01-2019             | 02-28-2020                 |
| Temperature/Humidity Indicator   | biaozhi       | HM10                         | 1804186       | 10-12-2018             | 10-11-2019                 |

| Conducted disturbance Test            |              |                         |                |                        |                            |
|---------------------------------------|--------------|-------------------------|----------------|------------------------|----------------------------|
| Equipment                             | Manufacturer | Model No.               | Serial Number  | Cal. date (mm-dd-yyyy) | Cal. Due date (mm-dd-yyyy) |
| Receiver                              | R&S          | ESCI                    | 100435         | 05-20-2019             | 05-18-2020                 |
| Temperature/<br>Humidity<br>Indicator | Defu         | TH128                   | /              | 06-14-2019             | 06-12-2020                 |
| Communication<br>test set             | Agilent      | E5515C                  | GB47050<br>534 | 03-01-2019             | 02-28-2020                 |
| Communication<br>test set             | R&S          | CMW500                  | 152394         | 01-18-2019             | 01-17-2020                 |
| LISN                                  | R&S          | ENV216                  | 100098         | 05-08-2019             | 05-06-2020                 |
| LISN                                  | schwarzbeck  | NNLK8121                | 8121-529       | 05-08-2019             | 05-06-2020                 |
| Voltage Probe                         | R&S          | ESH2-Z3<br>0299.7810.56 | 100042         | 06-13-2017             | 06-11-2020                 |
| Current Probe                         | R&S          | EZ-17<br>816.2063.03    | 100106         | 05-20-2019             | 05-18-2020                 |
| ISN                                   | TESEQ        | ISN T800                | 30297          | 01-06-2019             | 01-15-2020                 |
| Barometer                             | changchun    | DYM3                    | 1188           | 06-20-2019             | 06-18-2020                 |

| 3M Semi/full-anechoic Chamber    |                  |                          |               |                        |                            |
|----------------------------------|------------------|--------------------------|---------------|------------------------|----------------------------|
| Equipment                        | Manufacturer     | Model No.                | Serial Number | Cal. date (mm-dd-yyyy) | Cal. Due date (mm-dd-yyyy) |
| 3M Chamber & Accessory Equipment | TDK              | SAC-3                    | ---           | 05-24-2019             | 05-22-2020                 |
| TRILOG Broadband Antenna         | Schwarzbeck      | VULB9163                 | 9163-401      | 12-21-2018             | 12-20-2019                 |
| TRILOG Broadband Antenna         | Schwarzbeck      | VULB9163                 | 9163-618      | 07-26-2019             | 07-24-2020                 |
| Microwave Preamplifier           | Agilent          | 8449B                    | 3008A02425    | 07-12-2019             | 07-10-2020                 |
| Microwave Preamplifier           | Tonscend         | EMC051845S E             | 980380        | 01-16-2019             | 01-15-2020                 |
| Horn Antenna                     | Schwarzbeck      | BBHA 9120D               | 9120D-1869    | 04-25-2018             | 04-23-2021                 |
| Horn Antenna                     | ETS-LINDGREN     | 3117                     | 00057410      | 06-05-2018             | 06-03-2021                 |
| Double ridge horn antenna        | A.H.SYSTEMS      | SAS-574                  | 374           | 06-05-2018             | 06-04-2021                 |
| Pre-amplifier                    | A.H.SYSTEMS      | PAP-1840-60              | 6041.6041     | 07-26-2019             | 07-24-2020                 |
| Loop Antenna                     | Schwarzbeck      | FMZB 1519B               | 1519B-076     | 04-25-2018             | 04-25-2021                 |
| Spectrum Analyzer                | R&S              | FSP40                    | 100416        | 04-28-2019             | 04-26-2020                 |
| Receiver                         | R&S              | ESCI                     | 100435        | 05-20-2019             | 05-18-2020                 |
| Receiver                         | R&S              | ESCI7                    | 100938-003    | 11-23-2018             | 11-22-2019                 |
| Multi device Controller          | maturo           | NCD/070/10711112         | ---           | 01-09-2019             | 01-08-2020                 |
| LISN                             | schwarzbeck      | NNBM8125                 | 81251547      | 05-08-2019             | 05-06-2020                 |
| LISN                             | schwarzbeck      | NNBM8125                 | 81251547      | 05-08-2019             | 05-06-2020                 |
| Signal Generator                 | Agilent          | E4438C                   | MY45095744    | 03-01-2019             | 02-28-2020                 |
| Signal Generator                 | Keysight         | E8257D                   | MY53401106    | 03-01-2019             | 02-28-2020                 |
| Temperature/Humidity Indicator   | Shanghai qixiang | HM10                     | 1804298       | 10-12-2018             | 10-11-2019                 |
| Communication test set           | Agilent          | E5515C                   | GB47050534    | 03-01-2019             | 02-28-2020                 |
| Cable line                       | Fulai(7M)        | SF106                    | 5219/6A       | 01-09-2019             | 01-08-2020                 |
| Cable line                       | Fulai(6M)        | SF106                    | 5220/6A       | 01-09-2019             | 01-08-2020                 |
| Cable line                       | Fulai(3M)        | SF106                    | 5216/6A       | 01-09-2019             | 01-08-2020                 |
| Cable line                       | Fulai(3M)        | SF106                    | 5217/6A       | 01-09-2019             | 01-08-2020                 |
| Communication test set           | R&S              | CMW500                   | 104466        | 01-18-2019             | 01-17-2020                 |
| High-pass filter                 | Sinoscite        | FL3CX03WG18NM12-0398-002 | ---           | 01-09-2019             | 01-08-2020                 |
| High-pass filter                 | MICRO-TRONICS    | SPA-F-63029-4            | ---           | 01-09-2019             | 01-08-2020                 |
| band rejection filter            | Sinoscite        | FL5CX01CA09CL12-0395-001 | ---           | 01-09-2019             | 01-08-2020                 |
| band rejection filter            | Sinoscite        | FL5CX01CA08CL12-0393-001 | ---           | 01-09-2019             | 01-08-2020                 |
| band rejection filter            | Sinoscite        | FL5CX02CA04CL12-0396-002 | ---           | 01-09-2019             | 01-08-2020                 |
| band rejection filter            | Sinoscite        | FL5CX02CA03CL12-0394-001 | ---           | 01-09-2019             | 01-08-2020                 |

| 3M full-anechoic Chamber        |              |                   |               |                        |                            |
|---------------------------------|--------------|-------------------|---------------|------------------------|----------------------------|
| Equipment                       | Manufacturer | Model No.         | Serial Number | Cal. date (mm-dd-yyyy) | Cal. Due date (mm-dd-yyyy) |
| RSE Automatic test software     | JS Tonscend  | JS36-RSE          | 10166         | 06-18-2019             | 06-17-2020                 |
| Receiver                        | Keysight     | N9038A            | MY57290136    | 03-27-2019             | 03-25-2020                 |
| Spectrum Analyzer               | Keysight     | N9020B            | MY57111112    | 03-27-2019             | 03-25-2020                 |
| Spectrum Analyzer               | Keysight     | N9030B            | MY57140871    | 03-27-2019             | 03-25-2020                 |
| Loop Antenna                    | Schwarzbeck  | FMZB 1519B        | 1519B-075     | 04-25-2018             | 04-23-2021                 |
| Loop Antenna                    | Schwarzbeck  | FMZB 1519B        | 1519B-076     | 04-25-2018             | 04-23-2021                 |
| TRILOG Broadband Antenna        | Schwarzbeck  | VULB 9163         | 9163-1148     | 04-25-2018             | 04-23-2021                 |
| Horn Antenna                    | Schwarzbeck  | BBHA 9170         | 9170-832      | 04-25-2018             | 04-23-2021                 |
| Horn Antenna                    | Schwarzbeck  | BBHA 9170         | 9170-829      | 04-25-2018             | 04-23-2021                 |
| Communication Antenna           | Schwarzbeck  | CLSA 0110L        | 1014          | 02-14-2019             | 02-13-2020                 |
| Biconical antenna               | Schwarzbeck  | VUBA 9117         | 9117-381      | 04-25-2018             | 04-23-2021                 |
| Horn Antenna                    | ETS-LINDGREN | 3117              | 00057407      | 07-10-2018             | 07-08-2021                 |
| Preamplifier                    | EMCI         | EMC184055SE       | 980596        | 05-22-2019             | 05-20-2020                 |
| Communication test set          | R&S          | CMW500            | 102898        | 01-18-2019             | 01-17-2020                 |
| Preamplifier                    | EMCI         | EMC001330         | 980563        | 05-08-2019             | 05-06-2020                 |
| Preamplifier                    | Agilent      | 8449B             | 3008A02425    | 07-12-2019             | 07-10-2020                 |
| Temperature/ Humidity Indicator | biaozhi      | GM1360            | EE1186631     | 05-01-2019             | 04-30-2020                 |
| Signal Generator                | KEYSIGHT     | E8257D            | MY53401106    | 03-01-2019             | 02-28-2020                 |
| Fully Anechoic Chamber          | TDK          | FAC-3             | ---           | 01-17-2018             | 01-15-2021                 |
| Filter bank                     | JS Tonscend  | JS0806-F          | 188060094     | 04-10-2018             | 04-08-2021                 |
| Cable line                      | Times        | SFT205-NMSM-2.50M | 394812-0001   | 01-09-2019             | 01-08-2020                 |
| Cable line                      | Times        | SFT205-NMSM-2.50M | 394812-0002   | 01-09-2019             | 01-08-2020                 |
| Cable line                      | Times        | SFT205-NMSM-2.50M | 394812-0003   | 01-09-2019             | 01-08-2020                 |
| Cable line                      | Times        | SFT205-NMSM-2.50M | 393495-0001   | 01-09-2019             | 01-08-2020                 |
| Cable line                      | Times        | EMC104-NMNM-1000  | SN160710      | 01-09-2019             | 01-08-2020                 |
| Cable line                      | Times        | SFT205-NMSM-3.00M | 394813-0001   | 01-09-2019             | 01-08-2020                 |
| Cable line                      | Times        | SFT205-NMNM-1.50M | 381964-0001   | 01-09-2019             | 01-08-2020                 |
| Cable line                      | Times        | SFT205-NMSM-7.00M | 394815-0001   | 01-09-2019             | 01-08-2020                 |
| Cable line                      | Times        | HF160-KMKM-3.00M  | 393493-0001   | 01-09-2019             | 01-08-2020                 |

## 8 Radio Technical Requirements Specification

### Reference documents for testing:

| No. | Identity         | Document Title                                                     |
|-----|------------------|--------------------------------------------------------------------|
| 1   | FCC Part15C      | Subpart C-Intentional Radiators                                    |
| 2   | ANSI C63.10-2013 | American National Standard for Testing Unlicensed Wireless Devices |

### Test Results List:

| Test Requirement                  | Test method | Test item                                                         | Verdict | Note        |
|-----------------------------------|-------------|-------------------------------------------------------------------|---------|-------------|
| Part15C Section 15.247 (b)(3)     | ANSI C63.10 | Conducted Peak Output Power                                       | PASS    | Appendix A) |
| Part15C Section 15.247 (a)(2)     | ANSI C63.10 | 6dB Occupied Bandwidth                                            | PASS    | Appendix B) |
| Part15C Section 15.247(d)         | ANSI C63.10 | Band-edge for RF Conducted Emissions                              | PASS    | Appendix C) |
| Part15C Section 15.247(d)         | ANSI C63.10 | RF Conducted Spurious Emissions                                   | PASS    | Appendix D) |
| Part15C Section 15.247 (e)        | ANSI C63.10 | Power Spectral Density                                            | PASS    | Appendix E) |
| Part15C Section 15.203/15.247 (c) | ANSI C63.10 | Antenna Requirement                                               | PASS    | Appendix F) |
| Part15C Section 15.207            | ANSI C63.10 | AC Power Line Conducted Emission                                  | PASS    | Appendix G) |
| Part15C Section 15.205/15.209     | ANSI C63.10 | Restricted bands around fundamental frequency (Radiated Emission) | PASS    | Appendix H) |
| Part15C Section 15.205/15.209     | ANSI C63.10 | Radiated Spurious Emissions                                       | PASS    | Appendix I) |

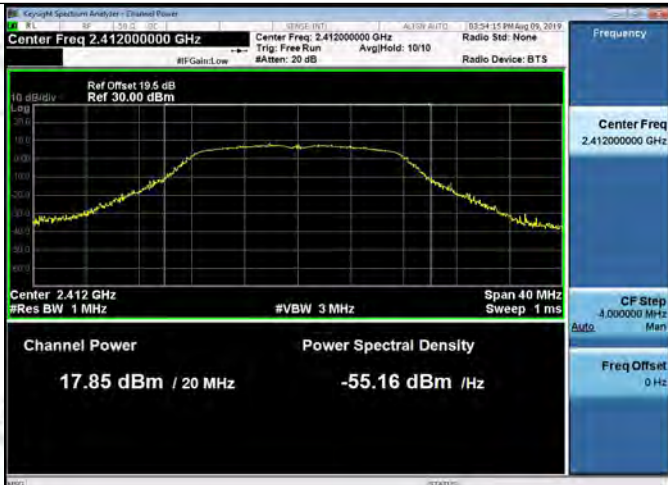
## Appendix A): Conducted Peak Output Power

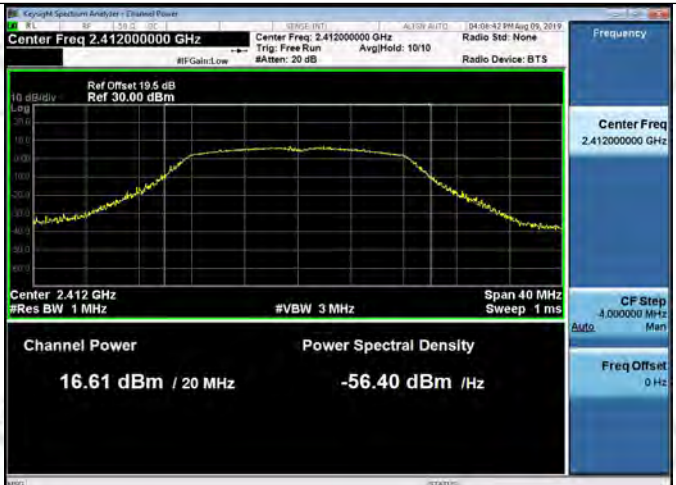
**Result Table**

| Mode      | Channel | Conducted Peak Output Power [dBm] | Verdict |
|-----------|---------|-----------------------------------|---------|
| 11B       | LCH     | 17.75                             | PASS    |
| 11B       | MCH     | 18.19                             | PASS    |
| 11B       | HCH     | 18.16                             | PASS    |
| 11G       | LCH     | 17.85                             | PASS    |
| 11G       | MCH     | 17                                | PASS    |
| 11G       | HCH     | 17.27                             | PASS    |
| 11N20SISO | LCH     | 16.61                             | PASS    |
| 11N20SISO | MCH     | 16.83                             | PASS    |
| 11N20SISO | HCH     | 15.67                             | PASS    |

## Test Graph

| Graphs  |                                                                                                                                                                                                                                                                                                                                                                  |
|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 11B/LCH |  <p>Center Freq 2.412000000 GHz</p> <p>Ref Offset 19.5 dB<br/>Ref 30.00 dBm</p> <p>Center 2.412 GHz<br/>#Res BW 1 MHz</p> <p>#VBW 3 MHz</p> <p>Span 40 MHz<br/>Sweep 1 ms</p> <p>Channel Power<br/>17.75 dBm / 20 MHz</p> <p>Power Spectral Density<br/>-55.26 dBm / Hz</p>    |
| 11B/MCH |  <p>Center Freq 2.437000000 GHz</p> <p>Ref Offset 19.77 dB<br/>Ref 30.00 dBm</p> <p>Center 2.437 GHz<br/>#Res BW 1 MHz</p> <p>#VBW 3 MHz</p> <p>Span 40 MHz<br/>Sweep 1 ms</p> <p>Channel Power<br/>18.19 dBm / 20 MHz</p> <p>Power Spectral Density<br/>-54.82 dBm / Hz</p>  |
| 11B/HCH |  <p>Center Freq 2.462000000 GHz</p> <p>Ref Offset 19.77 dB<br/>Ref 30.00 dBm</p> <p>Center 2.462 GHz<br/>#Res BW 1 MHz</p> <p>#VBW 3 MHz</p> <p>Span 40 MHz<br/>Sweep 1 ms</p> <p>Channel Power<br/>18.16 dBm / 20 MHz</p> <p>Power Spectral Density<br/>-54.85 dBm / Hz</p> |

|         |                                                                                                                                                                                                                                                                                                                                                 |
|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 11G/LCH |  <p>Center Freq 2.412000000 GHz</p> <p>Ref Offset 19.5 dB<br/>Ref 30.00 dBm</p> <p>Center 2.412 GHz<br/>#Res BW 1 MHz<br/>#VBW 3 MHz<br/>Span 40 MHz<br/>Sweep 1 ms</p> <p>Channel Power 17.85 dBm / 20 MHz<br/>Power Spectral Density -55.16 dBm / Hz</p>    |
| 11G/MCH |  <p>Center Freq 2.437000000 GHz</p> <p>Ref Offset 19.77 dB<br/>Ref 30.00 dBm</p> <p>Center 2.437 GHz<br/>#Res BW 1 MHz<br/>#VBW 3 MHz<br/>Span 40 MHz<br/>Sweep 1 ms</p> <p>Channel Power 17.00 dBm / 20 MHz<br/>Power Spectral Density -56.01 dBm / Hz</p>  |
| 11G/HCH |  <p>Center Freq 2.462000000 GHz</p> <p>Ref Offset 19.77 dB<br/>Ref 30.00 dBm</p> <p>Center 2.462 GHz<br/>#Res BW 1 MHz<br/>#VBW 3 MHz<br/>Span 40 MHz<br/>Sweep 1 ms</p> <p>Channel Power 17.27 dBm / 20 MHz<br/>Power Spectral Density -55.74 dBm / Hz</p> |

|               |                                                                                                                                                                                                                                                                                                                                                                  |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 11N20SISO/LCH |  <p>Center Freq 2.412000000 GHz</p> <p>Ref Offset 19.5 dB<br/>Ref 30.00 dBm</p> <p>Center 2.412 GHz<br/>#Res BW 1 MHz</p> <p>#VBW 3 MHz</p> <p>Span 40 MHz<br/>Sweep 1 ms</p> <p>Channel Power<br/>16.61 dBm / 20 MHz</p> <p>Power Spectral Density<br/>-56.40 dBm / Hz</p>    |
| 11N20SISO/MCH |  <p>Center Freq 2.437000000 GHz</p> <p>Ref Offset 19.77 dB<br/>Ref 30.00 dBm</p> <p>Center 2.437 GHz<br/>#Res BW 1 MHz</p> <p>#VBW 3 MHz</p> <p>Span 40 MHz<br/>Sweep 1 ms</p> <p>Channel Power<br/>16.83 dBm / 20 MHz</p> <p>Power Spectral Density<br/>-56.18 dBm / Hz</p>  |
| 11N20SISO/HCH |  <p>Center Freq 2.462000000 GHz</p> <p>Ref Offset 19.77 dB<br/>Ref 20.00 dBm</p> <p>Center 2.462 GHz<br/>#Res BW 1 MHz</p> <p>#VBW 3 MHz</p> <p>Span 40 MHz<br/>Sweep 1 ms</p> <p>Channel Power<br/>15.67 dBm / 20 MHz</p> <p>Power Spectral Density<br/>-57.34 dBm / Hz</p> |

## Appendix B): 6dB Occupied Bandwidth

Result Table

| Mode      | Channel | 6dB Bandwidth [MHz] | 99% OBW [MHz] | Verdict |
|-----------|---------|---------------------|---------------|---------|
| 11B       | LCH     | 9.036               | 14.020        | PASS    |
| 11B       | MCH     | 8.540               | 14.028        | PASS    |
| 11B       | HCH     | 9.031               | 14.010        | PASS    |
| 11G       | LCH     | 15.05               | 16.291        | PASS    |
| 11G       | MCH     | 15.13               | 16.287        | PASS    |
| 11G       | HCH     | 15.10               | 16.278        | PASS    |
| 11N20SISO | LCH     | 15.10               | 17.458        | PASS    |
| 11N20SISO | MCH     | 15.11               | 17.456        | PASS    |
| 11N20SISO | HCH     | 15.05               | 17.438        | PASS    |

## Test Graph



|         |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 11G/LCH |  <p>Keygraph Spectrum Analyzer - Occupied BW</p> <p>Center Freq 2.412000000 GHz</p> <p>Ref Offset 19.5 dB<br/>Ref 30.00 dBm</p> <p>Center 2.412 GHz<br/>#Res BW 100 kHz</p> <p>Occupied Bandwidth <b>16.291 MHz</b></p> <p>Total Power 16.4 dBm</p> <p>Transmit Freq Error -14.600 kHz</p> <p>OBW Power 99.00 %</p> <p>x dB Bandwidth 15.05 MHz</p> <p>x dB -6.00 dB</p>   |
| 11G/MCH |  <p>Keygraph Spectrum Analyzer - Occupied BW</p> <p>Center Freq 2.437000000 GHz</p> <p>Ref Offset 19.77 dB<br/>Ref 30.00 dBm</p> <p>Center 2.437 GHz<br/>#Res BW 100 kHz</p> <p>Occupied Bandwidth <b>16.287 MHz</b></p> <p>Total Power 15.6 dBm</p> <p>Transmit Freq Error -5.716 kHz</p> <p>OBW Power 99.00 %</p> <p>x dB Bandwidth 15.13 MHz</p> <p>x dB -6.00 dB</p>  |
| 11G/HCH |  <p>Keygraph Spectrum Analyzer - Occupied BW</p> <p>Center Freq 2.462000000 GHz</p> <p>Ref Offset 19.77 dB<br/>Ref 30.00 dBm</p> <p>Center 2.462 GHz<br/>#Res BW 100 kHz</p> <p>Occupied Bandwidth <b>16.278 MHz</b></p> <p>Total Power 15.9 dBm</p> <p>Transmit Freq Error -9.458 kHz</p> <p>OBW Power 99.00 %</p> <p>x dB Bandwidth 15.10 MHz</p> <p>x dB -6.00 dB</p> |

|               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|---------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 11N20SISO/LCH |  <p>Center Freq 2.412000000 GHz</p> <p>Ref Offset 19.5 dB<br/>Ref 30.00 dBm</p> <p>Center Freq 2.412000000 GHz<br/>Trig: Free Run<br/>#Attenu: 30 dB<br/>Avg/Hold: &gt;10/10<br/>Radio Std: None<br/>Radio Device: BTS</p> <p>Center 2.412 GHz<br/>#Res BW 100 kHz<br/>#VBW 300 kHz<br/>Span 40 MHz<br/>Sweep 4.267 ms</p> <p>Occupied Bandwidth 17.458 MHz<br/>Total Power 15.1 dBm</p> <p>Transmit Freq Error -16.002 kHz<br/>OBW Power 99.00 %<br/>x dB Bandwidth 15.10 MHz<br/>x dB -6.00 dB</p>    |
| 11N20SISO/MCH |  <p>Center Freq 2.437000000 GHz</p> <p>Ref Offset 19.77 dB<br/>Ref 30.00 dBm</p> <p>Center Freq 2.437000000 GHz<br/>Trig: Free Run<br/>#Attenu: 30 dB<br/>Avg/Hold: &gt;10/10<br/>Radio Std: None<br/>Radio Device: BTS</p> <p>Center 2.437 GHz<br/>#Res BW 100 kHz<br/>#VBW 300 kHz<br/>Span 40 MHz<br/>Sweep 4.267 ms</p> <p>Occupied Bandwidth 17.456 MHz<br/>Total Power 15.5 dBm</p> <p>Transmit Freq Error -4.025 kHz<br/>OBW Power 99.00 %<br/>x dB Bandwidth 15.11 MHz<br/>x dB -6.00 dB</p>   |
| 11N20SISO/HCH |  <p>Center Freq 2.462000000 GHz</p> <p>Ref Offset 19.77 dB<br/>Ref 30.00 dBm</p> <p>Center Freq 2.462000000 GHz<br/>Trig: Free Run<br/>#Attenu: 30 dB<br/>Avg/Hold: &gt;10/10<br/>Radio Std: None<br/>Radio Device: BTS</p> <p>Center 2.462 GHz<br/>#Res BW 100 kHz<br/>#VBW 300 kHz<br/>Span 40 MHz<br/>Sweep 4.267 ms</p> <p>Occupied Bandwidth 17.438 MHz<br/>Total Power 14.4 dBm</p> <p>Transmit Freq Error -17.996 kHz<br/>OBW Power 99.00 %<br/>x dB Bandwidth 15.05 MHz<br/>x dB -6.00 dB</p> |

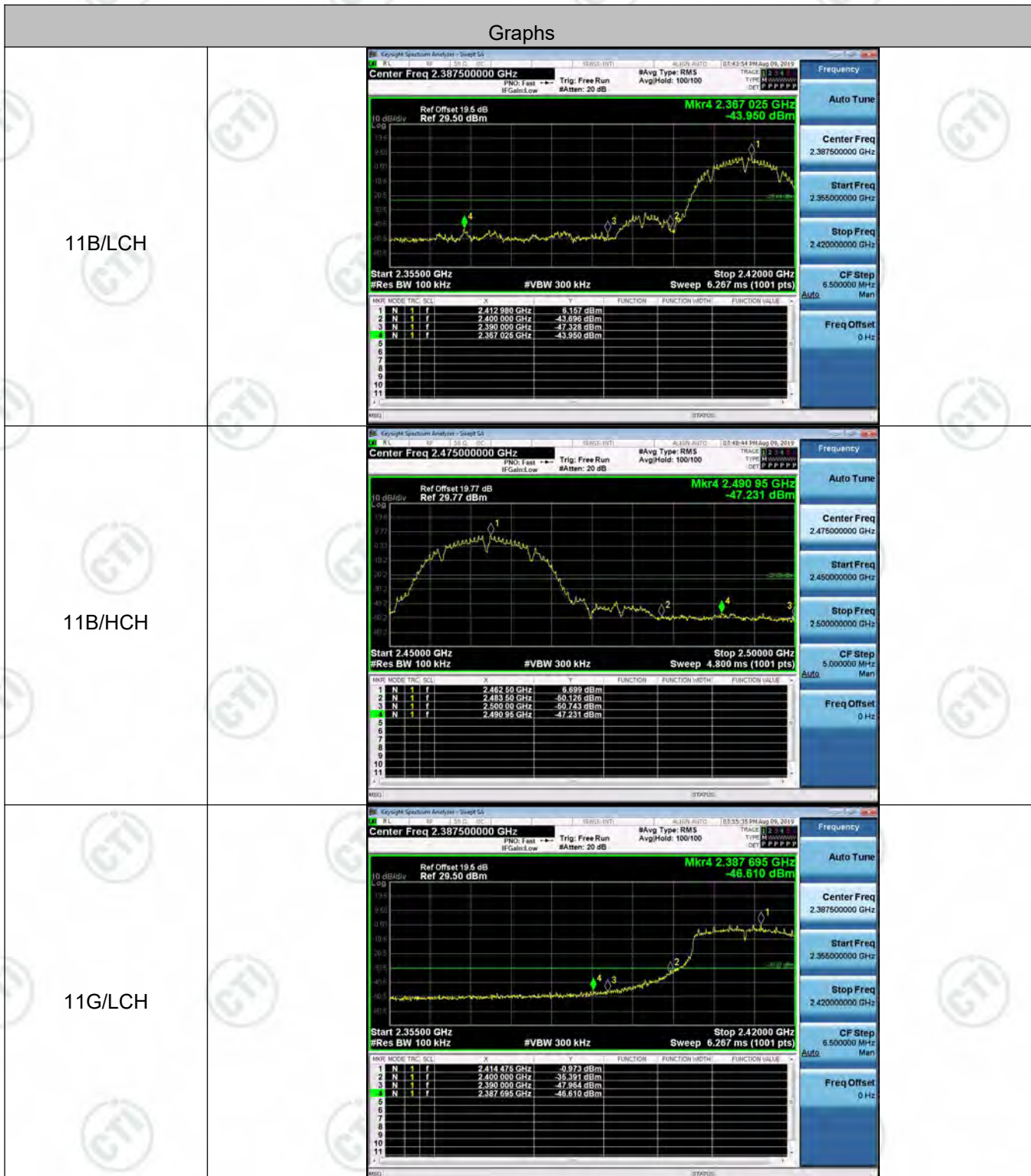
## Appendix C): Band-edge for RF Conducted Emissions

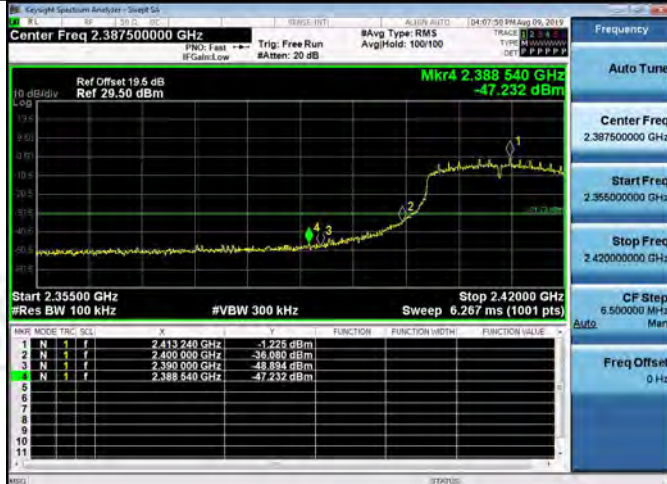
Result Table

| Mode      | Channel | Carrier Power[dBm] | Max.Spurious Level [dBm] | Limit [dBm] | Verdict |
|-----------|---------|--------------------|--------------------------|-------------|---------|
| 11B       | LCH     | 6.157              | -43.950                  | -23.84      | PASS    |
| 11B       | HCH     | 6.699              | -47.231                  | -23.3       | PASS    |
| 11G       | LCH     | -0.973             | -46.610                  | -30.97      | PASS    |
| 11G       | HCH     | -1.056             | -47.729                  | -31.06      | PASS    |
| 11N20SISO | LCH     | -1.225             | -47.232                  | -31.23      | PASS    |
| 11N20SISO | HCH     | -2.210             | -47.767                  | -32.21      | PASS    |

## Test Graph

Graphs



| 11G/HCH       |  <table><thead><tr><th>NR</th><th>MODE</th><th>TRC</th><th>SCL</th><th>X</th><th>Y</th><th>FUNCTION</th><th>FUNCTION WIDTH</th><th>FUNCTION VALUE</th></tr></thead><tbody><tr><td>1</td><td>N</td><td>1</td><td>f</td><td>2.46330 GHz</td><td>-1.055 dBm</td><td></td><td></td><td></td></tr><tr><td>2</td><td>N</td><td>1</td><td>f</td><td>2.48350 GHz</td><td>-49.587 dBm</td><td></td><td></td><td></td></tr><tr><td>3</td><td>N</td><td>1</td><td>f</td><td>2.50000 GHz</td><td>-50.752 dBm</td><td></td><td></td><td></td></tr><tr><td>4</td><td>N</td><td>1</td><td>f</td><td>2.48420 GHz</td><td>-47.729 dBm</td><td></td><td></td><td></td></tr></tbody></table>      | NR  | MODE | TRC          | SCL         | X        | Y              | FUNCTION       | FUNCTION WIDTH | FUNCTION VALUE | 1 | N | 1 | f | 2.46330 GHz  | -1.055 dBm |  |  |  | 2 | N | 1 | f | 2.48350 GHz  | -49.587 dBm |  |  |  | 3 | N | 1 | f | 2.50000 GHz  | -50.752 dBm |  |  |  | 4 | N | 1 | f | 2.48420 GHz  | -47.729 dBm |  |  |  |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|------|--------------|-------------|----------|----------------|----------------|----------------|----------------|---|---|---|---|--------------|------------|--|--|--|---|---|---|---|--------------|-------------|--|--|--|---|---|---|---|--------------|-------------|--|--|--|---|---|---|---|--------------|-------------|--|--|--|
| NR            | MODE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | TRC | SCL  | X            | Y           | FUNCTION | FUNCTION WIDTH | FUNCTION VALUE |                |                |   |   |   |   |              |            |  |  |  |   |   |   |   |              |             |  |  |  |   |   |   |   |              |             |  |  |  |   |   |   |   |              |             |  |  |  |
| 1             | N                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 1   | f    | 2.46330 GHz  | -1.055 dBm  |          |                |                |                |                |   |   |   |   |              |            |  |  |  |   |   |   |   |              |             |  |  |  |   |   |   |   |              |             |  |  |  |   |   |   |   |              |             |  |  |  |
| 2             | N                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 1   | f    | 2.48350 GHz  | -49.587 dBm |          |                |                |                |                |   |   |   |   |              |            |  |  |  |   |   |   |   |              |             |  |  |  |   |   |   |   |              |             |  |  |  |   |   |   |   |              |             |  |  |  |
| 3             | N                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 1   | f    | 2.50000 GHz  | -50.752 dBm |          |                |                |                |                |   |   |   |   |              |            |  |  |  |   |   |   |   |              |             |  |  |  |   |   |   |   |              |             |  |  |  |   |   |   |   |              |             |  |  |  |
| 4             | N                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 1   | f    | 2.48420 GHz  | -47.729 dBm |          |                |                |                |                |   |   |   |   |              |            |  |  |  |   |   |   |   |              |             |  |  |  |   |   |   |   |              |             |  |  |  |   |   |   |   |              |             |  |  |  |
| 11N20SISO/LCH |  <table><thead><tr><th>NR</th><th>MODE</th><th>TRC</th><th>SCL</th><th>X</th><th>Y</th><th>FUNCTION</th><th>FUNCTION WIDTH</th><th>FUNCTION VALUE</th></tr></thead><tbody><tr><td>1</td><td>N</td><td>1</td><td>f</td><td>2.413240 GHz</td><td>-1.225 dBm</td><td></td><td></td><td></td></tr><tr><td>2</td><td>N</td><td>1</td><td>f</td><td>2.400000 GHz</td><td>-35.880 dBm</td><td></td><td></td><td></td></tr><tr><td>3</td><td>N</td><td>1</td><td>f</td><td>2.390000 GHz</td><td>-48.894 dBm</td><td></td><td></td><td></td></tr><tr><td>4</td><td>N</td><td>1</td><td>f</td><td>2.388540 GHz</td><td>-47.232 dBm</td><td></td><td></td><td></td></tr></tbody></table> | NR  | MODE | TRC          | SCL         | X        | Y              | FUNCTION       | FUNCTION WIDTH | FUNCTION VALUE | 1 | N | 1 | f | 2.413240 GHz | -1.225 dBm |  |  |  | 2 | N | 1 | f | 2.400000 GHz | -35.880 dBm |  |  |  | 3 | N | 1 | f | 2.390000 GHz | -48.894 dBm |  |  |  | 4 | N | 1 | f | 2.388540 GHz | -47.232 dBm |  |  |  |
| NR            | MODE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | TRC | SCL  | X            | Y           | FUNCTION | FUNCTION WIDTH | FUNCTION VALUE |                |                |   |   |   |   |              |            |  |  |  |   |   |   |   |              |             |  |  |  |   |   |   |   |              |             |  |  |  |   |   |   |   |              |             |  |  |  |
| 1             | N                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 1   | f    | 2.413240 GHz | -1.225 dBm  |          |                |                |                |                |   |   |   |   |              |            |  |  |  |   |   |   |   |              |             |  |  |  |   |   |   |   |              |             |  |  |  |   |   |   |   |              |             |  |  |  |
| 2             | N                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 1   | f    | 2.400000 GHz | -35.880 dBm |          |                |                |                |                |   |   |   |   |              |            |  |  |  |   |   |   |   |              |             |  |  |  |   |   |   |   |              |             |  |  |  |   |   |   |   |              |             |  |  |  |
| 3             | N                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 1   | f    | 2.390000 GHz | -48.894 dBm |          |                |                |                |                |   |   |   |   |              |            |  |  |  |   |   |   |   |              |             |  |  |  |   |   |   |   |              |             |  |  |  |   |   |   |   |              |             |  |  |  |
| 4             | N                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 1   | f    | 2.388540 GHz | -47.232 dBm |          |                |                |                |                |   |   |   |   |              |            |  |  |  |   |   |   |   |              |             |  |  |  |   |   |   |   |              |             |  |  |  |   |   |   |   |              |             |  |  |  |
| 11N20SISO/HCH |  <table><thead><tr><th>NR</th><th>MODE</th><th>TRC</th><th>SCL</th><th>X</th><th>Y</th><th>FUNCTION</th><th>FUNCTION WIDTH</th><th>FUNCTION VALUE</th></tr></thead><tbody><tr><td>1</td><td>N</td><td>1</td><td>f</td><td>2.46325 GHz</td><td>-2.210 dBm</td><td></td><td></td><td></td></tr><tr><td>2</td><td>N</td><td>1</td><td>f</td><td>2.48350 GHz</td><td>-49.451 dBm</td><td></td><td></td><td></td></tr><tr><td>3</td><td>N</td><td>1</td><td>f</td><td>2.50000 GHz</td><td>-52.055 dBm</td><td></td><td></td><td></td></tr><tr><td>4</td><td>N</td><td>1</td><td>f</td><td>2.48990 GHz</td><td>-47.767 dBm</td><td></td><td></td><td></td></tr></tbody></table>    | NR  | MODE | TRC          | SCL         | X        | Y              | FUNCTION       | FUNCTION WIDTH | FUNCTION VALUE | 1 | N | 1 | f | 2.46325 GHz  | -2.210 dBm |  |  |  | 2 | N | 1 | f | 2.48350 GHz  | -49.451 dBm |  |  |  | 3 | N | 1 | f | 2.50000 GHz  | -52.055 dBm |  |  |  | 4 | N | 1 | f | 2.48990 GHz  | -47.767 dBm |  |  |  |
| NR            | MODE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | TRC | SCL  | X            | Y           | FUNCTION | FUNCTION WIDTH | FUNCTION VALUE |                |                |   |   |   |   |              |            |  |  |  |   |   |   |   |              |             |  |  |  |   |   |   |   |              |             |  |  |  |   |   |   |   |              |             |  |  |  |
| 1             | N                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 1   | f    | 2.46325 GHz  | -2.210 dBm  |          |                |                |                |                |   |   |   |   |              |            |  |  |  |   |   |   |   |              |             |  |  |  |   |   |   |   |              |             |  |  |  |   |   |   |   |              |             |  |  |  |
| 2             | N                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 1   | f    | 2.48350 GHz  | -49.451 dBm |          |                |                |                |                |   |   |   |   |              |            |  |  |  |   |   |   |   |              |             |  |  |  |   |   |   |   |              |             |  |  |  |   |   |   |   |              |             |  |  |  |
| 3             | N                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 1   | f    | 2.50000 GHz  | -52.055 dBm |          |                |                |                |                |   |   |   |   |              |            |  |  |  |   |   |   |   |              |             |  |  |  |   |   |   |   |              |             |  |  |  |   |   |   |   |              |             |  |  |  |
| 4             | N                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 1   | f    | 2.48990 GHz  | -47.767 dBm |          |                |                |                |                |   |   |   |   |              |            |  |  |  |   |   |   |   |              |             |  |  |  |   |   |   |   |              |             |  |  |  |   |   |   |   |              |             |  |  |  |

## Appendix D): RF Conducted Spurious Emissions

### Result Table

| Mode      | Channel | Pref [dBm] | Puw[dBm] | Verdict |
|-----------|---------|------------|----------|---------|
| 11B       | LCH     | 6.397      | <Limit   | PASS    |
| 11B       | MCH     | 7.142      | <Limit   | PASS    |
| 11B       | HCH     | 6.782      | <Limit   | PASS    |
| 11G       | LCH     | -0.213     | <Limit   | PASS    |
| 11G       | MCH     | -1.56      | <Limit   | PASS    |
| 11G       | HCH     | -0.807     | <Limit   | PASS    |
| 11N20SISO | LCH     | -1.281     | <Limit   | PASS    |
| 11N20SISO | MCH     | -1.466     | <Limit   | PASS    |
| 11N20SISO | HCH     | -2.149     | <Limit   | PASS    |

## Test Graph







| 11G LCH Graphs |  |
|----------------|--|
| Pref/11G/LCH   |  |
| Puw/11G/LCH    |  |

| 11G MCH Graphs |                                                                                                                                                                                                                                |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Pref/11G/MCH   | <p>Center Freq 2.437000000 GHz<br/>Ref Offset 19.77 dB<br/>Ref 30.00 dBm<br/>Mkr1 2.439 48 GHz<br/>-1.560 dBm<br/>Center 2.43700 GHz<br/>#Res BW 100 kHz<br/>#VBW 300 kHz<br/>Span 40.00 MHz<br/>Sweep 3.867 ms (1001 pts)</p> |
| Puw/11G/MCH    | <p>Center Freq 12.515000000 GHz<br/>Ref Offset 19.77 dB<br/>Ref 20.00 dBm<br/>Mkr1 23.733 GHz<br/>-34.692 dBm<br/>Start 30 MHz<br/>#Res BW 100 kHz<br/>#VBW 300 kHz<br/>Stop 25.00 GHz<br/>Sweep 2.387 s (8001 pts)</p>        |

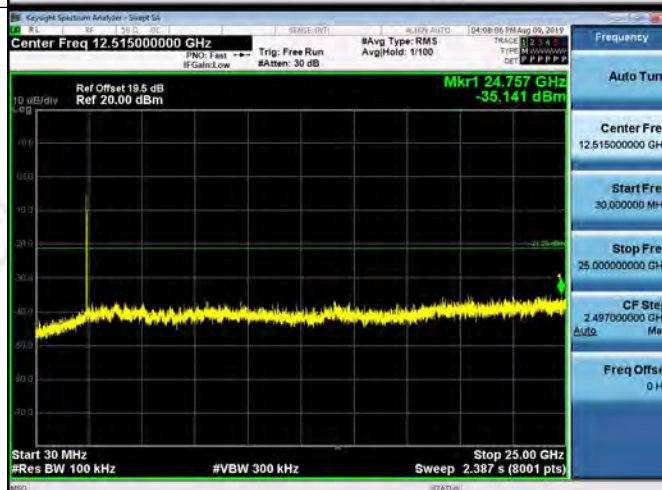
| 11G HCH Graphs |  |
|----------------|--|
| Pref/11G/HCH   |  |
| Puw/11G/HCH    |  |

### 11N20SISO LCH Graphs

Pref/11N20SISO/LCH

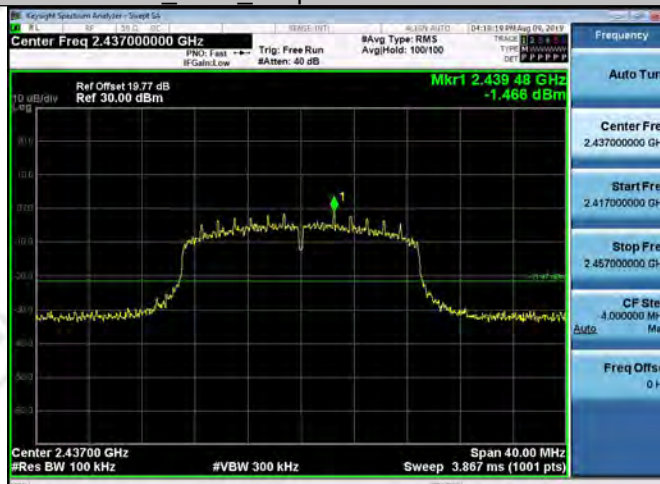


/11N20SISO/LCH

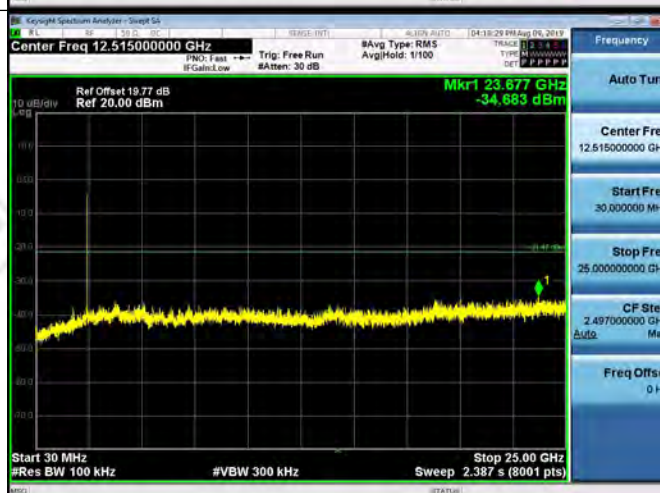


11N20SISO MCH Graphs

Pref/11N20SISO/MCH



Puw/11N20SISO/MCH

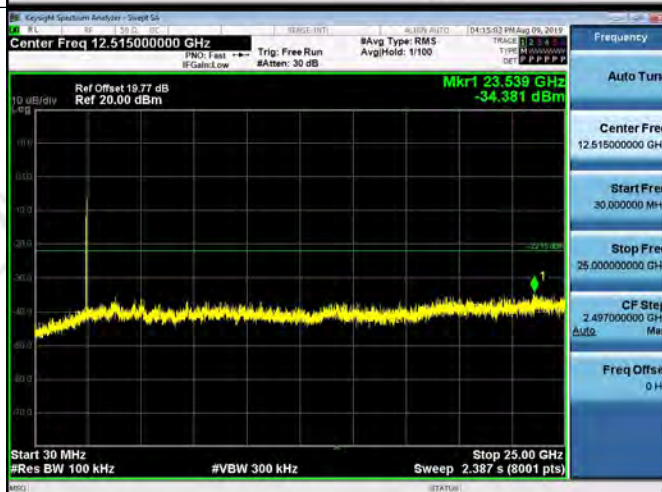


### 11N20SISO HCH Graphs

Pref/11N20SISO/HCH



Puw/11N20SISO/HCH

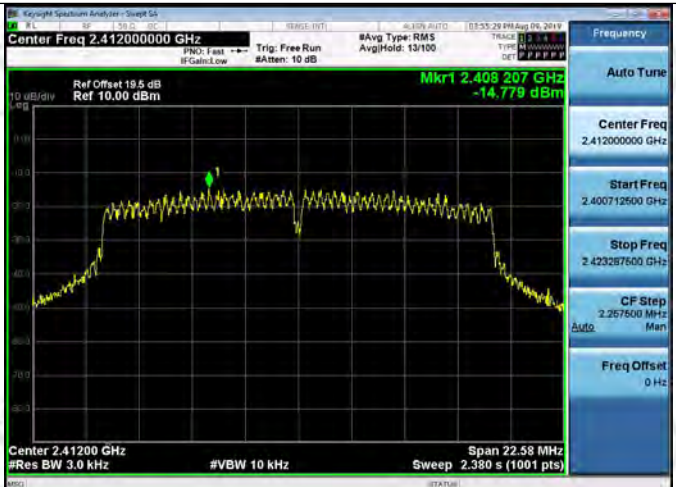
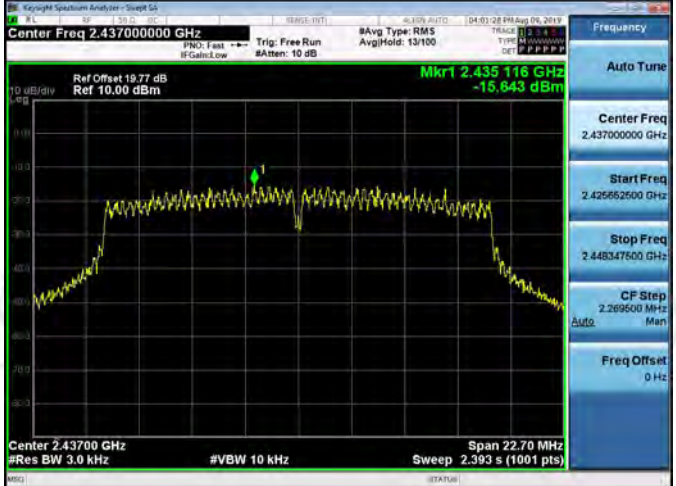


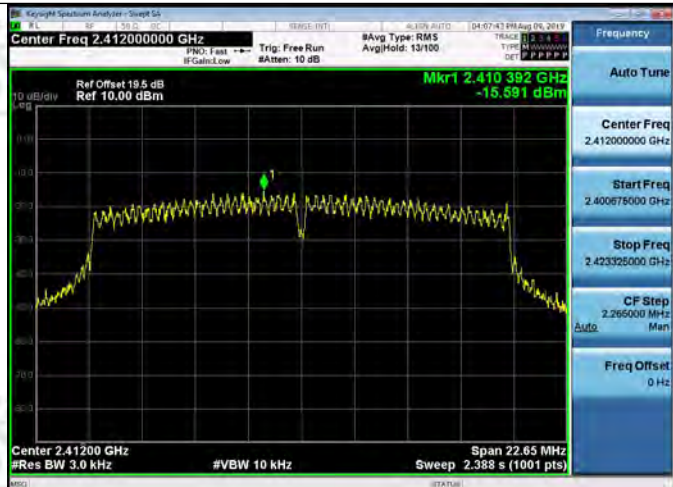
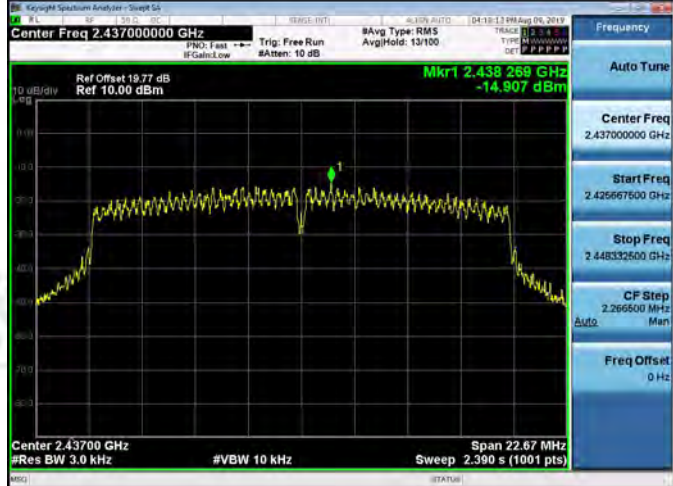
## Appendix E): Power Spectral Density Result Table

| Mode      | Channel | Power Spectral Density [dBm] | Verdict |
|-----------|---------|------------------------------|---------|
| 11B       | LCH     | -7.568                       | PASS    |
| 11B       | MCH     | -7.092                       | PASS    |
| 11B       | HCH     | -7.406                       | PASS    |
| 11G       | LCH     | -14.779                      | PASS    |
| 11G       | MCH     | -15.643                      | PASS    |
| 11G       | HCH     | -14.027                      | PASS    |
| 11N20SISO | LCH     | -15.591                      | PASS    |
| 11N20SISO | MCH     | -14.907                      | PASS    |
| 11N20SISO | HCH     | -17.380                      | PASS    |

## Test Graph



|         |                                                                                                                                                                                                                                                                                                                    |
|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 11G/LCH |  <p>Center Freq 2.41200000 GHz<br/>Ref Offset 19.5 dB<br/>Ref 10.00 dBm<br/>Mkr1 2.408 207 GHz<br/>-14.779 dBm<br/>Center 2.41200 GHz<br/>#Res BW 3.0 kHz<br/>#VBW 10 kHz<br/>Span 22.58 MHz<br/>Sweep 2.380 s (1001 pts)</p>    |
| 11G/MCH |  <p>Center Freq 2.43700000 GHz<br/>Ref Offset 19.77 dB<br/>Ref 10.00 dBm<br/>Mkr1 2.435 116 GHz<br/>-15.643 dBm<br/>Center 2.43700 GHz<br/>#Res BW 3.0 kHz<br/>#VBW 10 kHz<br/>Span 22.70 MHz<br/>Sweep 2.393 s (1001 pts)</p>  |
| 11G/HCH |  <p>Center Freq 2.46200000 GHz<br/>Ref Offset 19.77 dB<br/>Ref 10.00 dBm<br/>Mkr1 2.460 732 GHz<br/>-14.027 dBm<br/>Center 2.46200 GHz<br/>#Res BW 3.0 kHz<br/>#VBW 10 kHz<br/>Span 22.65 MHz<br/>Sweep 2.388 s (1001 pts)</p> |

|               |                                                                                                                                                                                                                                                                                                                    |
|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 11N20SISO/LCH |  <p>Center Freq 2.41200000 GHz<br/>Ref Offset 19.5 dB<br/>Ref 10.00 dBm<br/>Mkr1 2.410 392 GHz<br/>-15.591 dBm<br/>Center 2.41200 GHz<br/>#Res BW 3.0 kHz<br/>#VBW 10 kHz<br/>Span 22.65 MHz<br/>Sweep 2.388 s (1001 pts)</p>    |
| 11N20SISO/MCH |  <p>Center Freq 2.43700000 GHz<br/>Ref Offset 19.77 dB<br/>Ref 10.00 dBm<br/>Mkr1 2.438 269 GHz<br/>-14.907 dBm<br/>Center 2.43700 GHz<br/>#Res BW 3.0 kHz<br/>#VBW 10 kHz<br/>Span 22.67 MHz<br/>Sweep 2.390 s (1001 pts)</p>  |
| 11N20SISO/HCH |  <p>Center Freq 2.46200000 GHz<br/>Ref Offset 19.77 dB<br/>Ref 10.00 dBm<br/>Mkr1 2.460 126 GHz<br/>-17.380 dBm<br/>Center 2.46200 GHz<br/>#Res BW 3.0 kHz<br/>#VBW 10 kHz<br/>Span 22.58 MHz<br/>Sweep 2.380 s (1001 pts)</p> |

## Appendix F): Antenna Requirement

### 15.203 requirement:

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.

### 15.247(b) (4) requirement:

The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

#### EUT Antenna:



The antenna is integrated on the main PCB and no consideration of replacement. The best case gain of the antenna is 1.5dBi.

## Appendix G): AC Power Line Conducted Emission

| Test Procedure:       | <p>Test frequency range :150KHz-30MHz</p> <ol style="list-style-type: none"> <li>1)The mains terminal disturbance voltage test was conducted in a shielded room.</li> <li>2) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a <math>50\Omega/50\mu\text{H} + 5\Omega</math> linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded.</li> <li>3)The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane,</li> <li>4) The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0.8 m from the LISN 2.</li> <li>5) In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10 on conducted measurement.</li> </ol> |           |                       |                    |  |            |         |          |           |           |       |    |    |      |    |    |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|-----------------------|--------------------|--|------------|---------|----------|-----------|-----------|-------|----|----|------|----|----|
| Limit:                | <table border="1"> <thead> <tr> <th rowspan="2">Frequency range (MHz)</th><th colspan="2">Limit (dB<math>\mu</math>V)</th></tr> <tr> <th>Quasi-peak</th><th>Average</th></tr> </thead> <tbody> <tr> <td>0.15-0.5</td><td>66 to 56*</td><td>56 to 46*</td></tr> <tr> <td>0.5-5</td><td>56</td><td>46</td></tr> <tr> <td>5-30</td><td>60</td><td>50</td></tr> </tbody> </table> <p>* The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.<br/>NOTE : The lower limit is applicable at the transition frequency</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |           | Frequency range (MHz) | Limit (dB $\mu$ V) |  | Quasi-peak | Average | 0.15-0.5 | 66 to 56* | 56 to 46* | 0.5-5 | 56 | 46 | 5-30 | 60 | 50 |
| Frequency range (MHz) | Limit (dB $\mu$ V)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |           |                       |                    |  |            |         |          |           |           |       |    |    |      |    |    |
|                       | Quasi-peak                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Average   |                       |                    |  |            |         |          |           |           |       |    |    |      |    |    |
| 0.15-0.5              | 66 to 56*                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 56 to 46* |                       |                    |  |            |         |          |           |           |       |    |    |      |    |    |
| 0.5-5                 | 56                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 46        |                       |                    |  |            |         |          |           |           |       |    |    |      |    |    |
| 5-30                  | 60                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 50        |                       |                    |  |            |         |          |           |           |       |    |    |      |    |    |

### Measurement Data

An initial pre-scan was performed on the live and neutral lines with peak detector.

Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission were detected.

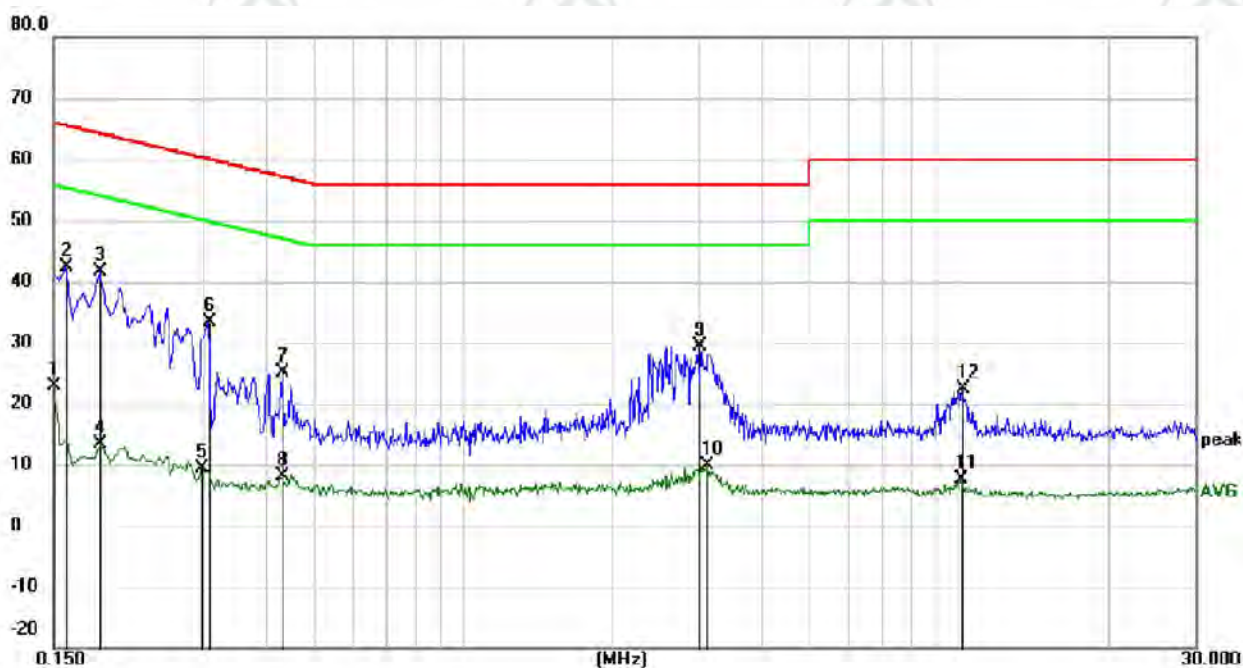
**Product** : Yanshee Robot

**Model/Type reference** : ERHA101

**Temperature** : 24°C

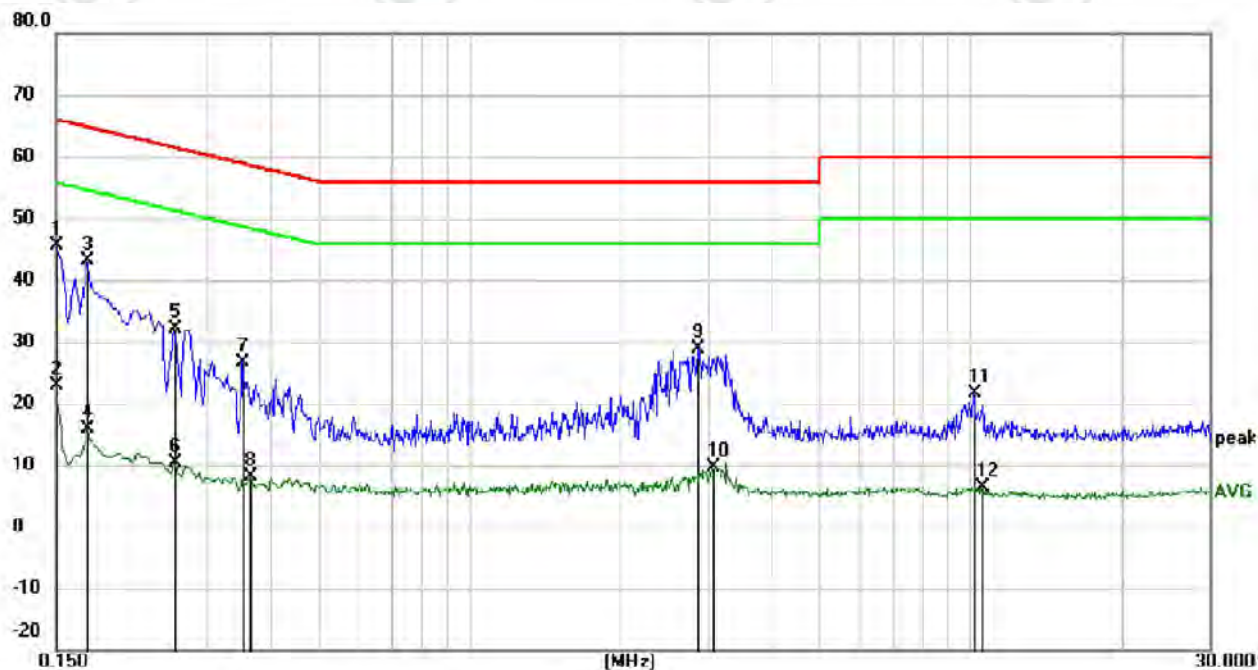
**Humidity** : 52%

Neutral line:



| No. | Mk. | Freq.<br>MHz | Reading<br>Level<br>dBuV | Correct<br>Factor<br>dB | Measure-<br>ment<br>dBuV | Limit<br>dBuV | Margin<br>dB | Detector | Comment |
|-----|-----|--------------|--------------------------|-------------------------|--------------------------|---------------|--------------|----------|---------|
| 1   |     | 0.1500       | 12.82                    | 9.97                    | 22.79                    | 56.00         | -33.21       | AVG      |         |
| 2   |     | 0.1590       | 32.47                    | 9.98                    | 42.45                    | 65.52         | -23.07       | peak     |         |
| 3   | *   | 0.1860       | 31.62                    | 10.01                   | 41.63                    | 64.21         | -22.58       | peak     |         |
| 4   |     | 0.1860       | 3.33                     | 10.01                   | 13.34                    | 54.21         | -40.87       | AVG      |         |
| 5   |     | 0.2985       | -0.70                    | 10.10                   | 9.40                     | 50.28         | -40.88       | AVG      |         |
| 6   |     | 0.3075       | 23.21                    | 10.09                   | 33.30                    | 60.04         | -26.74       | peak     |         |
| 7   |     | 0.4335       | 15.14                    | 10.00                   | 25.14                    | 57.19         | -32.05       | peak     |         |
| 8   |     | 0.4335       | -1.92                    | 10.00                   | 8.08                     | 47.19         | -39.11       | AVG      |         |
| 9   |     | 2.9985       | 19.57                    | 9.83                    | 29.40                    | 56.00         | -26.60       | peak     |         |
| 10  |     | 3.0975       | -0.03                    | 9.83                    | 9.80                     | 46.00         | -36.20       | AVG      |         |
| 11  |     | 10.1175      | -2.21                    | 9.96                    | 7.75                     | 50.00         | -42.25       | AVG      |         |
| 12  |     | 10.1535      | 12.43                    | 9.96                    | 22.39                    | 60.00         | -37.61       | peak     |         |

Live line:



| No. | Mk. | Freq.<br>MHz | Reading<br>Level<br>dBuV | Correct<br>Factor<br>dB | Measure-<br>ment<br>dBuV | Limit<br>dBuV | Margin<br>dB | Detector | Comment |
|-----|-----|--------------|--------------------------|-------------------------|--------------------------|---------------|--------------|----------|---------|
| 1   | *   | 0.1500       | 35.65                    | 9.97                    | 45.62                    | 66.00         | -20.38       | peak     |         |
| 2   |     | 0.1500       | 12.98                    | 9.97                    | 22.95                    | 56.00         | -33.05       | AVG      |         |
| 3   |     | 0.1725       | 33.04                    | 10.00                   | 43.04                    | 64.84         | -21.80       | peak     |         |
| 4   |     | 0.1725       | 5.80                     | 10.00                   | 15.80                    | 54.84         | -39.04       | AVG      |         |
| 5   |     | 0.2580       | 22.13                    | 10.07                   | 32.20                    | 61.50         | -29.30       | peak     |         |
| 6   |     | 0.2580       | 0.27                     | 10.07                   | 10.34                    | 51.50         | -41.16       | AVG      |         |
| 7   |     | 0.3525       | 16.64                    | 10.05                   | 26.69                    | 58.90         | -32.21       | peak     |         |
| 8   |     | 0.3660       | -1.98                    | 10.03                   | 8.05                     | 48.59         | -40.54       | AVG      |         |
| 9   |     | 2.8545       | 18.98                    | 9.83                    | 28.81                    | 56.00         | -27.19       | peak     |         |
| 10  |     | 3.0705       | -0.26                    | 9.83                    | 9.57                     | 46.00         | -36.43       | AVG      |         |
| 11  |     | 10.1625      | 11.76                    | 9.96                    | 21.72                    | 60.00         | -38.28       | peak     |         |
| 12  |     | 10.5405      | -3.53                    | 9.96                    | 6.43                     | 50.00         | -43.57       | AVG      |         |

Notes:

1. The following Quasi-Peak and Average measurements were performed on the EUT:
2. Final Test Level = Receiver Reading + LISN Factor + Cable Loss.

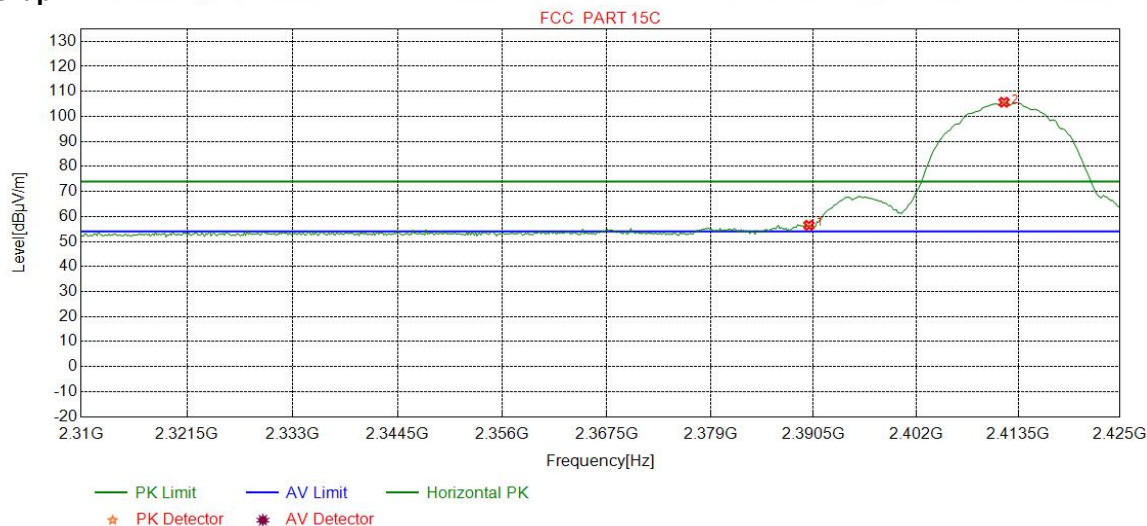
## Appendix H): Restricted bands around fundamental frequency (Radiated)

|                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                    |        |                  |            |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|--------|------------------|------------|
| Receiver Setup: | Frequency                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Detector           | RBW    | VBW              | Remark     |
|                 | 30MHz-1GHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Quasi-peak         | 120kHz | 300kHz           | Quasi-peak |
|                 | Above 1GHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Peak               | 1MHz   | 3MHz             | Peak       |
|                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Peak               | 1MHz   | 10Hz             | Average    |
| Test Procedure: | <p><b>Below 1GHz test procedure as below:</b></p> <ol style="list-style-type: none"> <li>The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.</li> <li>The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.</li> <li>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.</li> <li>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 was turned from 0 degrees to 360 degrees to find the maximum reading.</li> <li>The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.</li> <li>Place a marker at the end of the restricted band closest to the transmit frequency to show compliance. Also measure any emissions in the restricted bands. Save the spectrum analyzer plot. Repeat for each power and modulation for lowest and highest channel</li> </ol> <p><b>Above 1GHz test procedure as below:</b></p> <ol style="list-style-type: none"> <li>Different between above is the test site, change from Semi- Anechoic Chamber to fully Anechoic Chamber change form table 0.8 meter to 1.5 meter( Above 18GHz the distance is 1 meter and table is 1.5 meter).</li> <li>Test the EUT in the lowest channel , the Highest channel</li> <li>The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is worse case.</li> <li>Repeat above procedures until all frequencies measured was complete.</li> </ol> |                    |        |                  |            |
| Limit:          | Frequency                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Limit (dBμV/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 plot as follows:**

|         |                               |          |      |
|---------|-------------------------------|----------|------|
| Mode:   | 802.11 b(11Mbps) Transmitting | Channel: | 2412 |
| Remark: | PK                            |          |      |

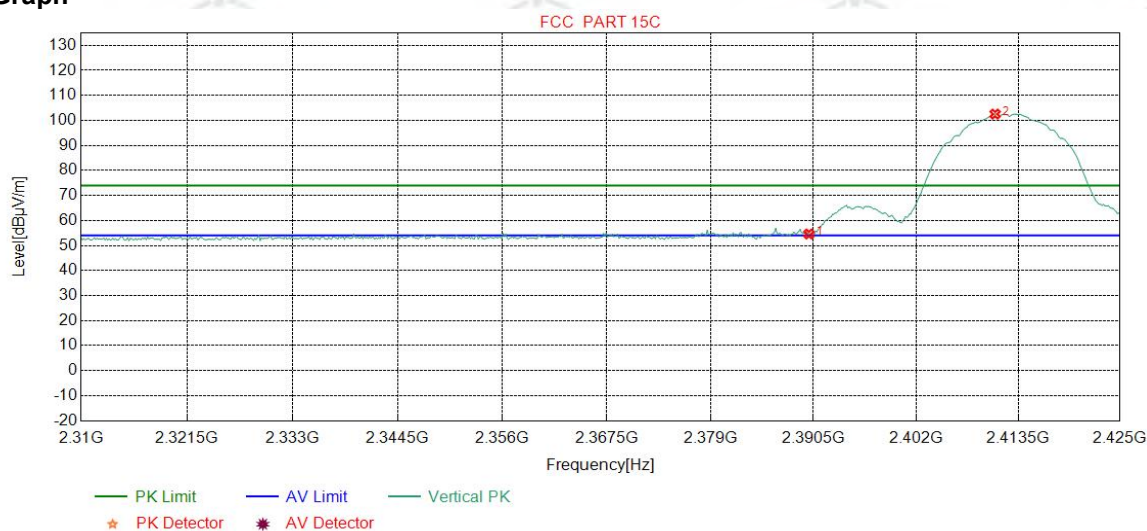
**Test Graph**



| NO | Freq. [MHz] | Ant Factor [dB] | Cable loss [dB] | Pream gain [dB] | Reading [dBμV] | Level [dBμV/m] | Limit [dBμV/m] | Margin [dB] | Result | Polarity   |
|----|-------------|-----------------|-----------------|-----------------|----------------|----------------|----------------|-------------|--------|------------|
| 1  | 2390.0000   | 32.25           | 13.37           | -42.44          | 53.29          | 56.47          | 74.00          | 17.53       | Pass   | Horizontal |
| 2  | 2411.9024   | 32.28           | 13.35           | -42.43          | 102.46         | 105.66         | 74.00          | -31.66      | Pass   | Horizontal |

|         |                               |          |      |
|---------|-------------------------------|----------|------|
| Mode:   | 802.11 b(11Mbps) Transmitting | Channel: | 2412 |
| Remark: | PK                            |          |      |

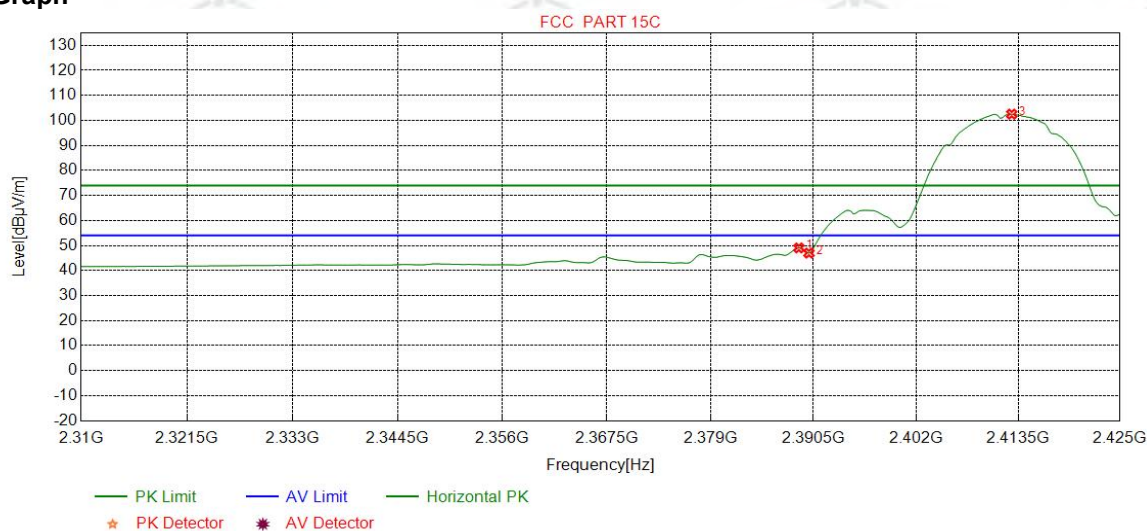
### Test Graph



| NO | Freq. [MHz] | Ant Factor [dB] | Cable loss [dB] | Pream gain [dB] | Reading [dBμV] | Level [dBμV/m] | Limit [dBμV/m] | Margin [dB] | Result | Polarity |
|----|-------------|-----------------|-----------------|-----------------|----------------|----------------|----------------|-------------|--------|----------|
| 1  | 2390.0000   | 32.25           | 13.37           | -42.44          | 51.43          | 54.61          | 74.00          | 19.39       | Pass   | Vertical |
| 2  | 2410.8949   | 32.28           | 13.35           | -42.43          | 99.33          | 102.53         | 74.00          | -28.53      | Pass   | Vertical |

|         |                               |          |      |
|---------|-------------------------------|----------|------|
| Mode:   | 802.11 b(11Mbps) Transmitting | Channel: | 2412 |
| Remark: | AV                            |          |      |

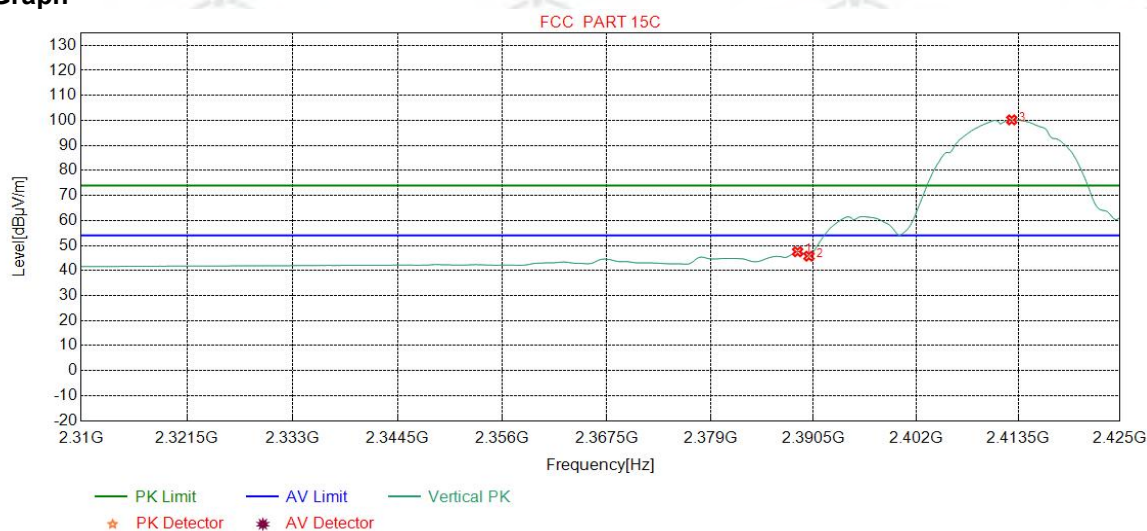
### Test Graph



| NO | Freq. [MHz] | Ant Factor [dB] | Cable loss [dB] | Pream gain [dB] | Reading [dBμV] | Level [dBμV/m] | Limit [dBμV/m] | Margin [dB] | Result | Polarity   |
|----|-------------|-----------------|-----------------|-----------------|----------------|----------------|----------------|-------------|--------|------------|
| 1  | 2388.8736   | 32.24           | 13.38           | -42.43          | 45.83          | 49.02          | 54.00          | 4.98        | Pass   | Horizontal |
| 2  | 2390.0000   | 32.25           | 13.37           | -42.44          | 43.78          | 46.96          | 54.00          | 7.04        | Pass   | Horizontal |
| 3  | 2412.7660   | 32.28           | 13.36           | -42.43          | 99.30          | 102.51         | 54.00          | -48.51      | Pass   | Horizontal |

|         |                               |          |      |
|---------|-------------------------------|----------|------|
| Mode:   | 802.11 b(11Mbps) Transmitting | Channel: | 2412 |
| Remark: | AV                            |          |      |

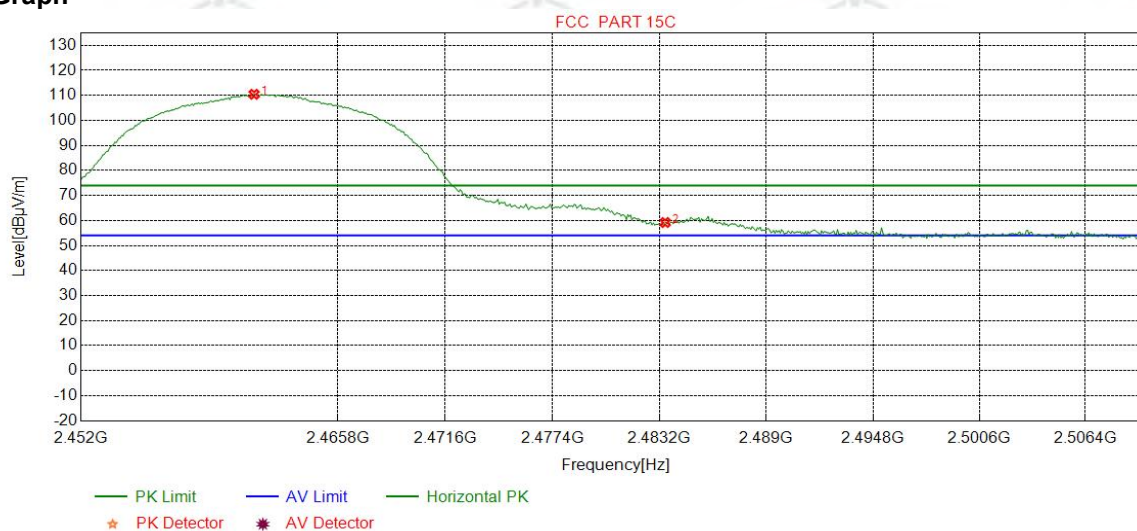
### Test Graph



| NO | Freq. [MHz] | Ant Factor [dB] | Cable loss [dB] | Pream gain [dB] | Reading [dBμV] | Level [dBμV/m] | Limit [dBμV/m] | Margin [dB] | Result | Polarity |
|----|-------------|-----------------|-----------------|-----------------|----------------|----------------|----------------|-------------|--------|----------|
| 1  | 2388.7297   | 32.24           | 13.38           | -42.43          | 44.32          | 47.51          | 54.00          | 6.49        | Pass   | Vertical |
| 2  | 2390.0000   | 32.25           | 13.37           | -42.44          | 42.56          | 45.74          | 54.00          | 8.26        | Pass   | Vertical |
| 3  | 2412.7660   | 32.28           | 13.36           | -42.43          | 97.00          | 100.21         | 54.00          | -46.21      | Pass   | Vertical |

|         |                               |          |      |
|---------|-------------------------------|----------|------|
| Mode:   | 802.11 b(11Mbps) Transmitting | Channel: | 2462 |
| Remark: | PK                            |          |      |

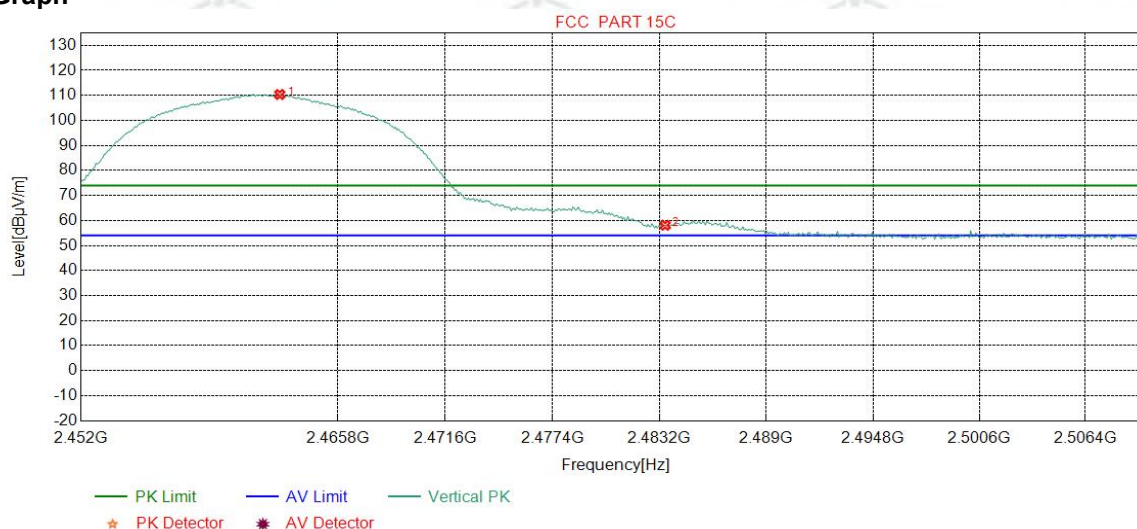
### Test Graph



| NO | Freq. [MHz] | Ant Factor [dB] | Cable loss [dB] | Pream gain [dB] | Reading [dBμV] | Level [dBμV/m] | Limit [dBμV/m] | Margin [dB] | Result | Polarity   |
|----|-------------|-----------------|-----------------|-----------------|----------------|----------------|----------------|-------------|--------|------------|
| 1  | 2461.2916   | 32.35           | 13.48           | -42.41          | 107.02         | 110.44         | 74.00          | -36.44      | Pass   | Horizontal |
| 2  | 2483.5000   | 32.38           | 13.38           | -42.40          | 55.82          | 59.18          | 74.00          | 14.82       | Pass   | Horizontal |

|         |                               |          |      |
|---------|-------------------------------|----------|------|
| Mode:   | 802.11 b(11Mbps) Transmitting | Channel: | 2462 |
| Remark: | PK                            |          |      |

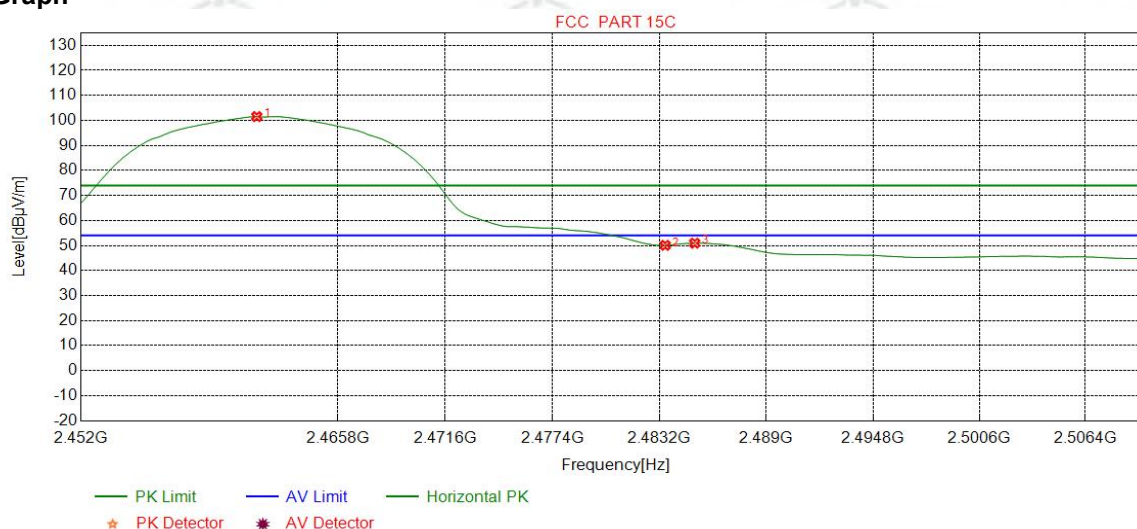
### Test Graph



| NO | Freq. [MHz] | Ant Factor [dB] | Cable loss [dB] | Pream gain [dB] | Reading [dBμV] | Level [dBμV/m] | Limit [dBμV/m] | Margin [dB] | Result | Polarity |
|----|-------------|-----------------|-----------------|-----------------|----------------|----------------|----------------|-------------|--------|----------|
| 1  | 2462.6708   | 32.35           | 13.47           | -42.41          | 106.95         | 110.36         | 74.00          | -36.36      | Pass   | Vertical |
| 2  | 2483.5000   | 32.38           | 13.38           | -42.40          | 54.73          | 58.09          | 74.00          | 15.91       | Pass   | Vertical |

|         |                               |          |      |
|---------|-------------------------------|----------|------|
| Mode:   | 802.11 b(11Mbps) Transmitting | Channel: | 2462 |
| Remark: | AV                            |          |      |

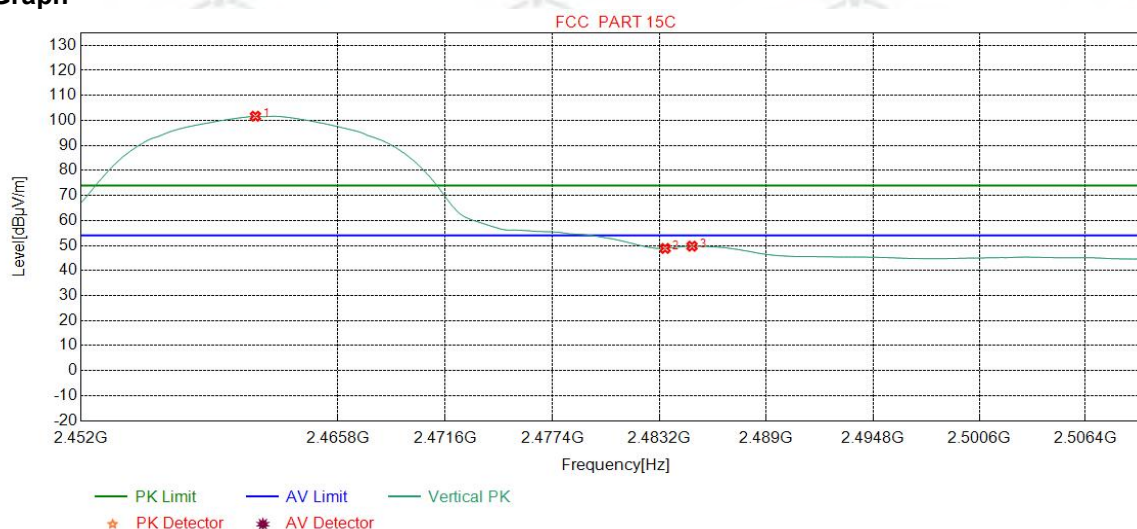
### Test Graph



| NO | Freq. [MHz] | Ant Factor [dB] | Cable loss [dB] | Pream gain [dB] | Reading [dBμV] | Level [dBμV/m] | Limit [dBμV/m] | Margin [dB] | Result | Polarity   |
|----|-------------|-----------------|-----------------|-----------------|----------------|----------------|----------------|-------------|--------|------------|
| 1  | 2461.4368   | 32.35           | 13.48           | -42.41          | 98.11          | 101.53         | 54.00          | -47.53      | Pass   | Horizontal |
| 2  | 2483.5000   | 32.38           | 13.38           | -42.40          | 46.72          | 50.08          | 54.00          | 3.92        | Pass   | Horizontal |
| 3  | 2485.1014   | 32.38           | 13.37           | -42.40          | 47.58          | 50.93          | 54.00          | 3.07        | Pass   | Horizontal |

|         |                               |          |      |
|---------|-------------------------------|----------|------|
| Mode:   | 802.11 b(11Mbps) Transmitting | Channel: | 2462 |
| Remark: | AV                            |          |      |

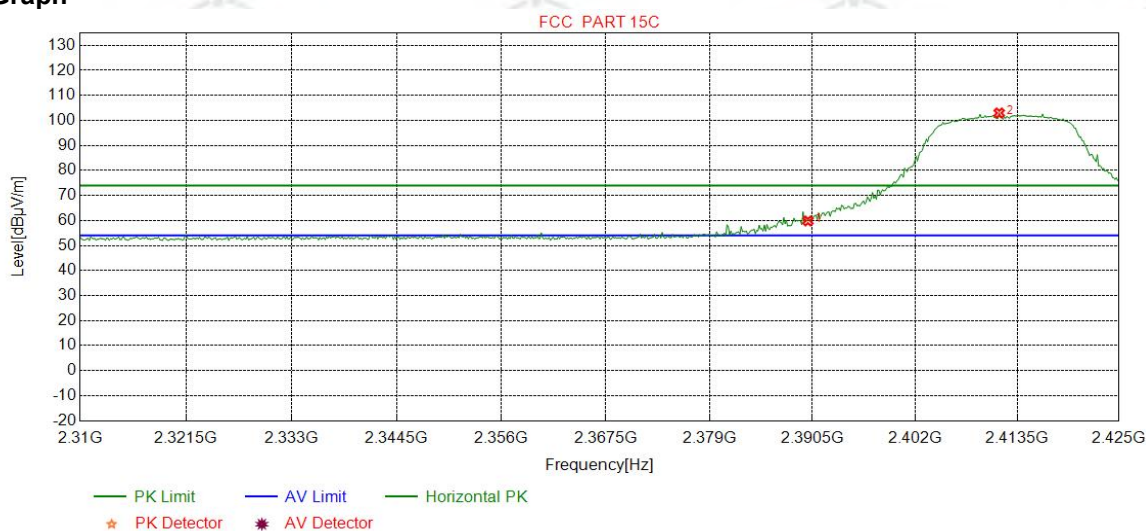
### Test Graph



| NO | Freq. [MHz] | Ant Factor [dB] | Cable loss [dB] | Pream gain [dB] | Reading [dBμV] | Level [dBμV/m] | Limit [dBμV/m] | Margin [dB] | Result | Polarity |
|----|-------------|-----------------|-----------------|-----------------|----------------|----------------|----------------|-------------|--------|----------|
| 1  | 2461.3642   | 32.35           | 13.48           | -42.41          | 98.25          | 101.67         | 54.00          | -47.67      | Pass   | Vertical |
| 2  | 2483.5000   | 32.38           | 13.38           | -42.40          | 45.48          | 48.84          | 54.00          | 5.16        | Pass   | Vertical |
| 3  | 2484.9562   | 32.38           | 13.37           | -42.40          | 46.38          | 49.73          | 54.00          | 4.27        | Pass   | Vertical |

|         |                              |          |      |
|---------|------------------------------|----------|------|
| Mode:   | 802.11 g(6Mbps) Transmitting | Channel: | 2412 |
| Remark: | PK                           |          |      |

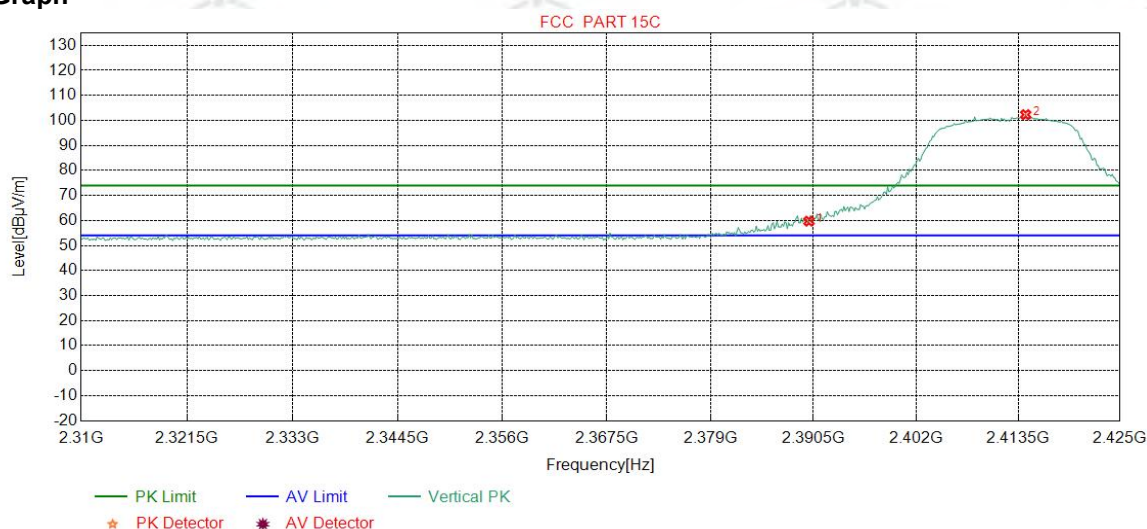
### Test Graph



| NO | Freq. [MHz] | Ant Factor [dB] | Cable loss [dB] | Pream gain [dB] | Reading [dBμV] | Level [dBμV/m] | Limit [dBμV/m] | Margin [dB] | Result | Polarity   |
|----|-------------|-----------------|-----------------|-----------------|----------------|----------------|----------------|-------------|--------|------------|
| 1  | 2390.0000   | 32.25           | 13.37           | -42.44          | 56.64          | 59.82          | 74.00          | 14.18       | Pass   | Horizontal |
| 2  | 2411.4706   | 32.28           | 13.35           | -42.43          | 99.77          | 102.97         | 74.00          | -28.97      | Pass   | Horizontal |

|         |                              |          |      |
|---------|------------------------------|----------|------|
| Mode:   | 802.11 g(6Mbps) Transmitting | Channel: | 2412 |
| Remark: | PK                           |          |      |

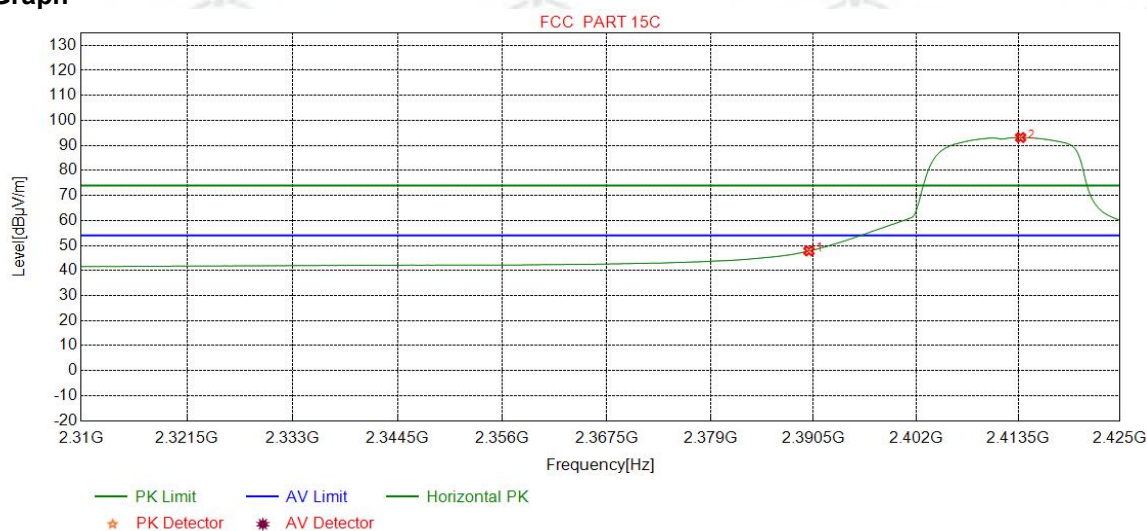
### Test Graph



| NO | Freq. [MHz] | Ant Factor [dB] | Cable loss [dB] | Pream gain [dB] | Reading [dBμV] | Level [dBμV/m] | Limit [dBμV/m] | Margin [dB] | Result | Polarity |
|----|-------------|-----------------|-----------------|-----------------|----------------|----------------|----------------|-------------|--------|----------|
| 1  | 2390.0000   | 32.25           | 13.37           | -42.44          | 56.55          | 59.73          | 74.00          | 14.27       | Pass   | Vertical |
| 2  | 2414.3492   | 32.28           | 13.37           | -42.43          | 99.07          | 102.29         | 74.00          | -28.29      | Pass   | Vertical |

|         |                              |          |      |
|---------|------------------------------|----------|------|
| Mode:   | 802.11 g(6Mbps) Transmitting | Channel: | 2412 |
| Remark: | AV                           |          |      |

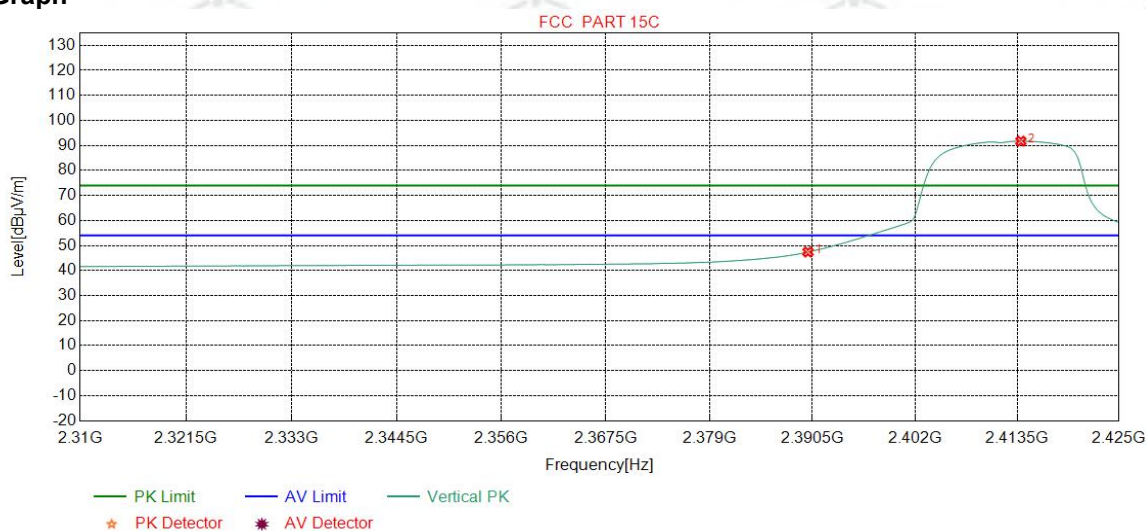
### Test Graph



| NO | Freq. [MHz] | Ant Factor [dB] | Cable loss [dB] | Pream gain [dB] | Reading [dBμV] | Level [dBμV/m] | Limit [dBμV/m] | Margin [dB] | Result | Polarity   |
|----|-------------|-----------------|-----------------|-----------------|----------------|----------------|----------------|-------------|--------|------------|
| 1  | 2390.0000   | 32.25           | 13.37           | -42.44          | 44.65          | 47.83          | 54.00          | 6.17        | Pass   | Horizontal |
| 2  | 2413.7735   | 32.28           | 13.36           | -42.43          | 89.95          | 93.16          | 54.00          | -39.16      | Pass   | Horizontal |

|         |                              |          |      |
|---------|------------------------------|----------|------|
| Mode:   | 802.11 g(6Mbps) Transmitting | Channel: | 2412 |
| Remark: | AV                           |          |      |

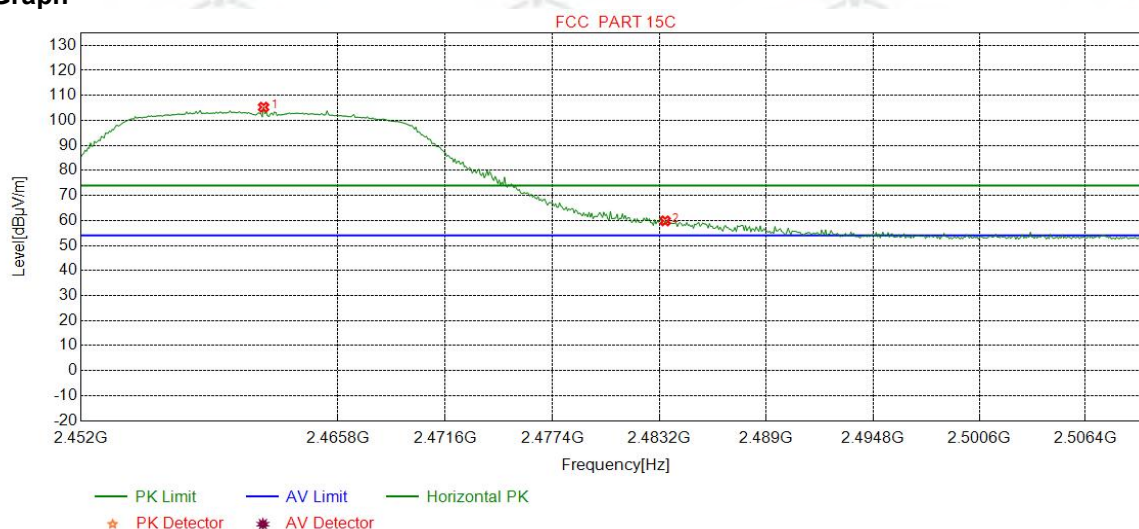
### Test Graph



| NO | Freq. [MHz] | Ant Factor [dB] | Cable loss [dB] | Pream gain [dB] | Reading [dBμV] | Level [dBμV/m] | Limit [dBμV/m] | Margin [dB] | Result | Polarity |
|----|-------------|-----------------|-----------------|-----------------|----------------|----------------|----------------|-------------|--------|----------|
| 1  | 2390.0000   | 32.25           | 13.37           | -42.44          | 44.22          | 47.40          | 54.00          | 6.60        | Pass   | Vertical |
| 2  | 2413.9174   | 32.28           | 13.36           | -42.42          | 88.51          | 91.73          | 54.00          | -37.73      | Pass   | Vertical |

|         |                              |          |      |
|---------|------------------------------|----------|------|
| Mode:   | 802.11 g(6Mbps) Transmitting | Channel: | 2462 |
| Remark: | PK                           |          |      |

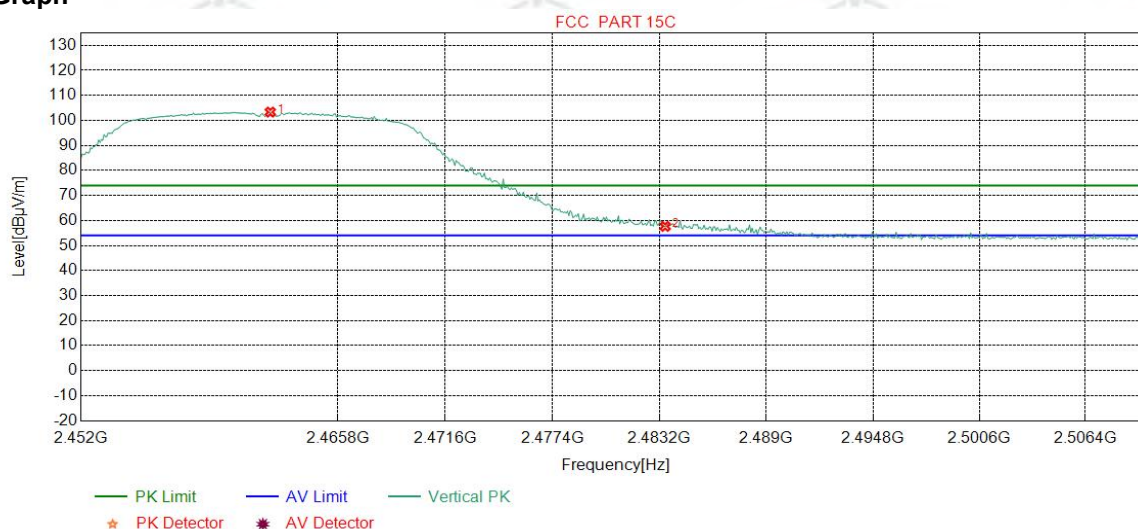
### Test Graph



| NO | Freq. [MHz] | Ant Factor [dB] | Cable loss [dB] | Pream gain [dB] | Reading [dBμV] | Level [dBμV/m] | Limit [dBμV/m] | Margin [dB] | Result | Polarity   |
|----|-------------|-----------------|-----------------|-----------------|----------------|----------------|----------------|-------------|--------|------------|
| 1  | 2461.7998   | 32.35           | 13.48           | -42.41          | 101.86         | 105.28         | 74.00          | -31.28      | Pass   | Horizontal |
| 2  | 2483.5000   | 32.38           | 13.38           | -42.40          | 56.48          | 59.84          | 74.00          | 14.16       | Pass   | Horizontal |

|         |                              |          |      |
|---------|------------------------------|----------|------|
| Mode:   | 802.11 g(6Mbps) Transmitting | Channel: | 2462 |
| Remark: | PK                           |          |      |

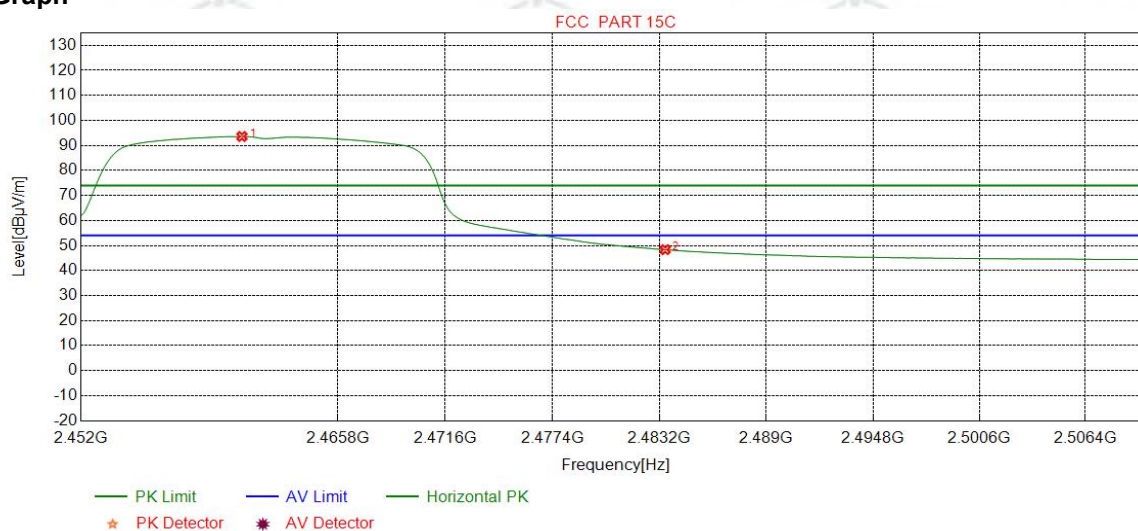
### Test Graph



| NO | Freq. [MHz] | Ant Factor [dB] | Cable loss [dB] | Pream gain [dB] | Reading [dBμV] | Level [dBμV/m] | Limit [dBμV/m] | Margin [dB] | Result | Polarity |
|----|-------------|-----------------|-----------------|-----------------|----------------|----------------|----------------|-------------|--------|----------|
| 1  | 2462.1627   | 32.35           | 13.47           | -42.41          | 99.92          | 103.33         | 74.00          | -29.33      | Pass   | Vertical |
| 2  | 2483.5000   | 32.38           | 13.38           | -42.40          | 54.28          | 57.64          | 74.00          | 16.36       | Pass   | Vertical |

|         |                              |          |      |
|---------|------------------------------|----------|------|
| Mode:   | 802.11 g(6Mbps) Transmitting | Channel: | 2462 |
| Remark: | AV                           |          |      |

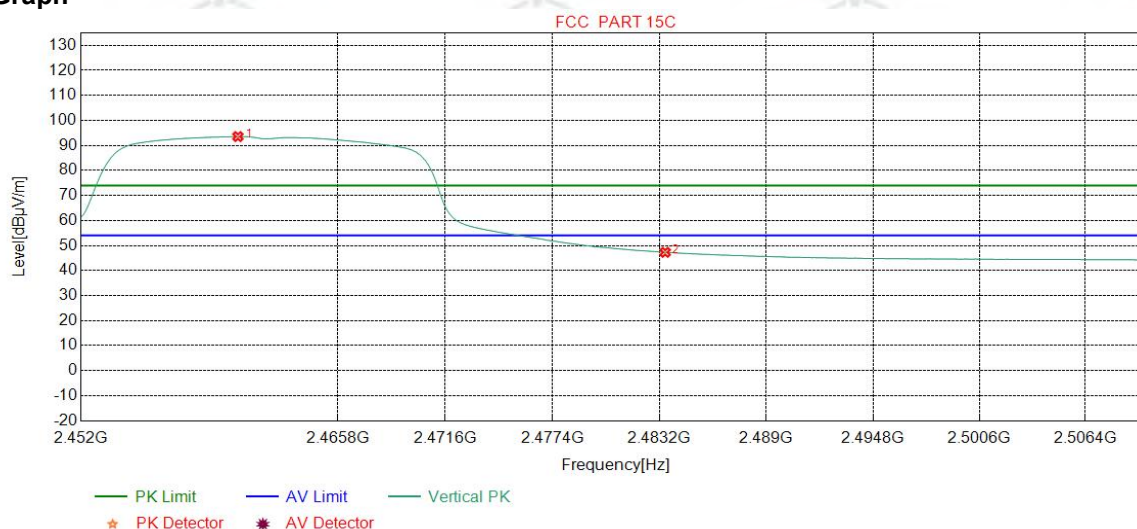
### Test Graph



| NO | Freq. [MHz] | Ant Factor [dB] | Cable loss [dB] | Pream gain [dB] | Reading [dBμV] | Level [dBμV/m] | Limit [dBμV/m] | Margin [dB] | Result | Polarity   |
|----|-------------|-----------------|-----------------|-----------------|----------------|----------------|----------------|-------------|--------|------------|
| 1  | 2460.6383   | 32.34           | 13.48           | -42.40          | 90.16          | 93.58          | 54.00          | -39.58      | Pass   | Horizontal |
| 2  | 2483.5000   | 32.38           | 13.38           | -42.40          | 44.98          | 48.34          | 54.00          | 5.66        | Pass   | Horizontal |

|         |                              |          |      |
|---------|------------------------------|----------|------|
| Mode:   | 802.11 g(6Mbps) Transmitting | Channel: | 2462 |
| Remark: | AV                           |          |      |

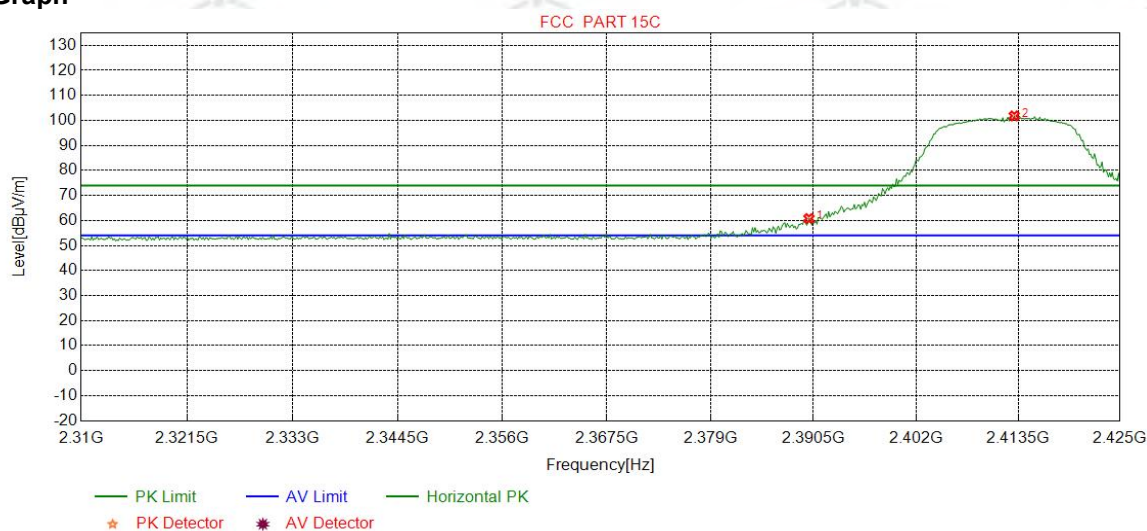
### Test Graph



| NO | Freq. [MHz] | Ant Factor [dB] | Cable loss [dB] | Pream gain [dB] | Reading [dBμV] | Level [dBμV/m] | Limit [dBμV/m] | Margin [dB] | Result | Polarity |
|----|-------------|-----------------|-----------------|-----------------|----------------|----------------|----------------|-------------|--------|----------|
| 1  | 2460.4205   | 32.34           | 13.48           | -42.40          | 90.12          | 93.54          | 54.00          | -39.54      | Pass   | Vertical |
| 2  | 2483.5000   | 32.38           | 13.38           | -42.40          | 43.92          | 47.28          | 54.00          | 6.72        | Pass   | Vertical |

|         |                          |          |      |
|---------|--------------------------|----------|------|
| Mode:   | 802.11 n(HT20) (6.5Mbps) | Channel: | 2412 |
| Remark: | PK                       |          |      |

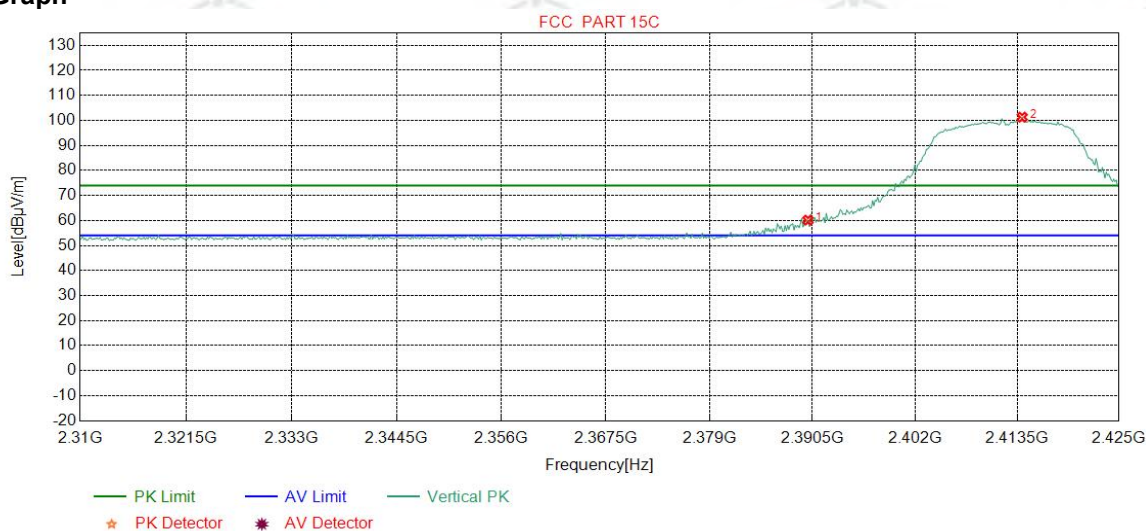
### Test Graph



| NO | Freq. [MHz] | Ant Factor [dB] | Cable loss [dB] | Pream gain [dB] | Reading [dBμV] | Level [dBμV/m] | Limit [dBμV/m] | Margin [dB] | Result | Polarity   |
|----|-------------|-----------------|-----------------|-----------------|----------------|----------------|----------------|-------------|--------|------------|
| 1  | 2390.0000   | 32.25           | 13.37           | -42.44          | 57.58          | 60.76          | 74.00          | 13.24       | Pass   | Horizontal |
| 2  | 2413.0538   | 32.28           | 13.36           | -42.43          | 98.58          | 101.79         | 74.00          | -27.79      | Pass   | Horizontal |

|         |                          |          |      |
|---------|--------------------------|----------|------|
| Mode:   | 802.11 n(HT20) (6.5Mbps) | Channel: | 2412 |
| Remark: | PK                       |          |      |

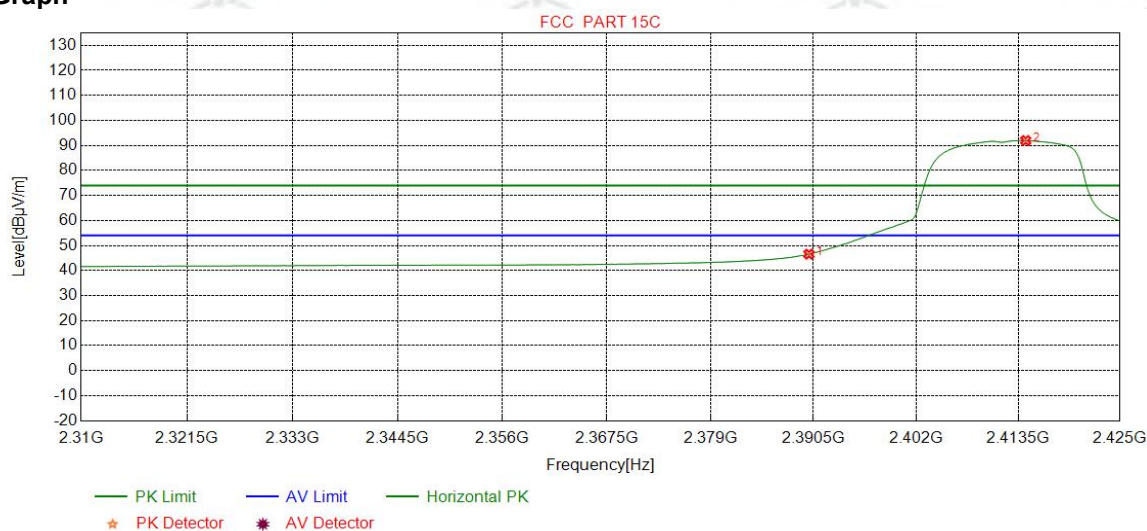
### Test Graph



| NO | Freq. [MHz] | Ant Factor [dB] | Cable loss [dB] | Pream gain [dB] | Reading [dBμV] | Level [dBμV/m] | Limit [dBμV/m] | Margin [dB] | Result | Polarity |
|----|-------------|-----------------|-----------------|-----------------|----------------|----------------|----------------|-------------|--------|----------|
| 1  | 2390.0000   | 32.25           | 13.37           | -42.44          | 56.97          | 60.15          | 74.00          | 13.85       | Pass   | Vertical |
| 2  | 2414.0613   | 32.28           | 13.36           | -42.42          | 98.08          | 101.30         | 74.00          | -27.30      | Pass   | Vertical |

|         |                          |          |      |
|---------|--------------------------|----------|------|
| Mode:   | 802.11 n(HT20) (6.5Mbps) | Channel: | 2412 |
| Remark: | AV                       |          |      |

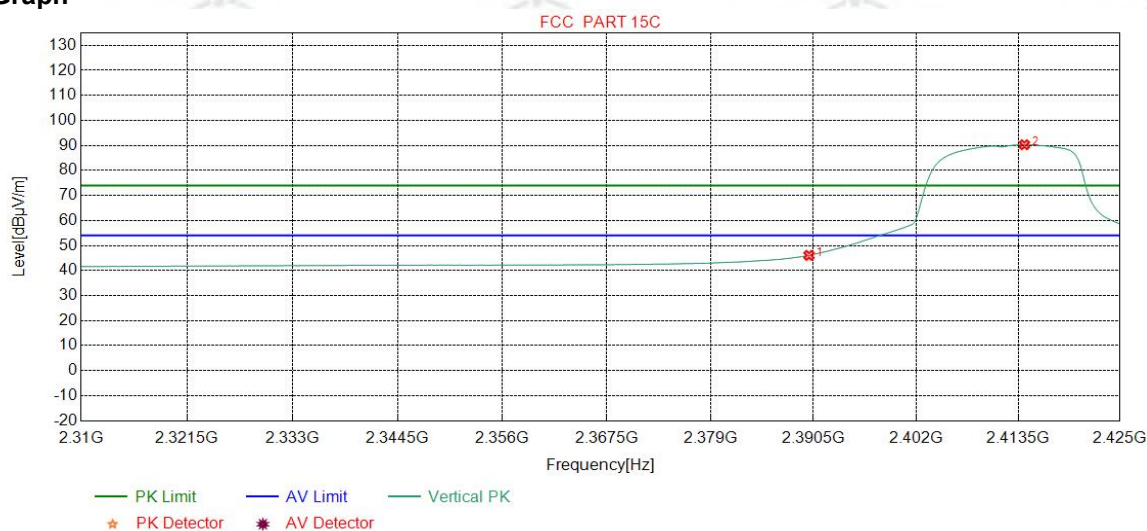
### Test Graph



| NO | Freq. [MHz] | Ant Factor [dB] | Cable loss [dB] | Pream gain [dB] | Reading [dBμV] | Level [dBμV/m] | Limit [dBμV/m] | Margin [dB] | Result | Polarity   |
|----|-------------|-----------------|-----------------|-----------------|----------------|----------------|----------------|-------------|--------|------------|
| 1  | 2390.0000   | 32.25           | 13.37           | -42.44          | 43.36          | 46.54          | 54.00          | 7.46        | Pass   | Horizontal |
| 2  | 2414.3492   | 32.28           | 13.37           | -42.43          | 88.72          | 91.94          | 54.00          | -37.94      | Pass   | Horizontal |

|         |                          |          |      |
|---------|--------------------------|----------|------|
| Mode:   | 802.11 n(HT20) (6.5Mbps) | Channel: | 2412 |
| Remark: | AV                       |          |      |

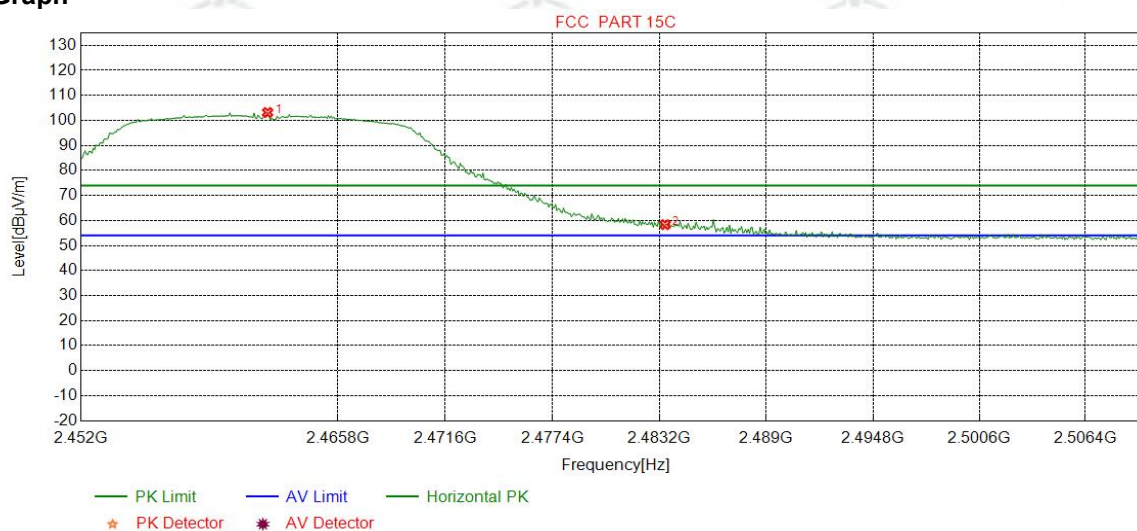
### Test Graph



| NO | Freq. [MHz] | Ant Factor [dB] | Cable loss [dB] | Pream gain [dB] | Reading [dBμV] | Level [dBμV/m] | Limit [dBμV/m] | Margin [dB] | Result | Polarity |
|----|-------------|-----------------|-----------------|-----------------|----------------|----------------|----------------|-------------|--------|----------|
| 1  | 2390.0000   | 32.25           | 13.37           | -42.44          | 42.88          | 46.06          | 54.00          | 7.94        | Pass   | Vertical |
| 2  | 2414.2053   | 32.28           | 13.37           | -42.43          | 87.05          | 90.27          | 54.00          | -36.27      | Pass   | Vertical |

|         |                          |          |      |
|---------|--------------------------|----------|------|
| Mode:   | 802.11 n(HT20) (6.5Mbps) | Channel: | 2462 |
| Remark: | PK                       |          |      |

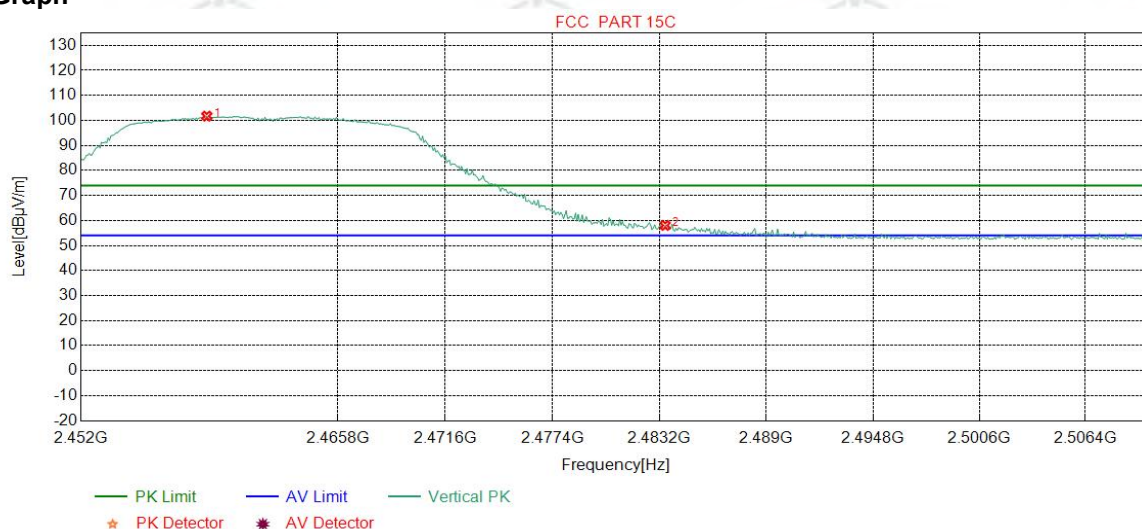
### Test Graph



| NO | Freq. [MHz] | Ant Factor [dB] | Cable loss [dB] | Pream gain [dB] | Reading [dBμV] | Level [dBμV/m] | Limit [dBμV/m] | Margin [dB] | Result | Polarity   |
|----|-------------|-----------------|-----------------|-----------------|----------------|----------------|----------------|-------------|--------|------------|
| 1  | 2462.0175   | 32.35           | 13.47           | -42.41          | 99.76          | 103.17         | 74.00          | -29.17      | Pass   | Horizontal |
| 2  | 2483.5000   | 32.38           | 13.38           | -42.40          | 54.98          | 58.34          | 74.00          | 15.66       | Pass   | Horizontal |

|         |                          |          |      |
|---------|--------------------------|----------|------|
| Mode:   | 802.11 n(HT20) (6.5Mbps) | Channel: | 2462 |
| Remark: | PK                       |          |      |

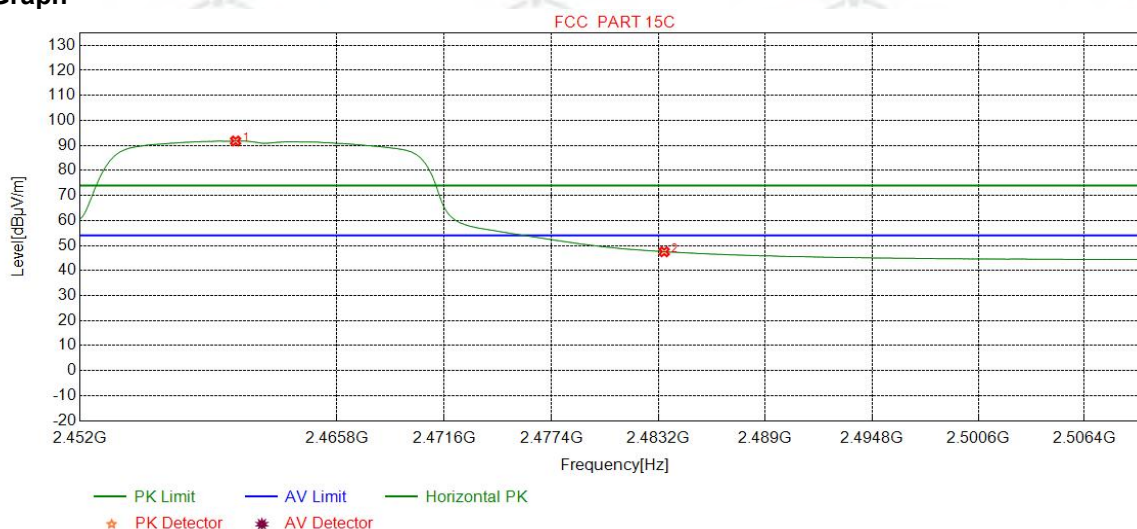
### Test Graph



| NO | Freq. [MHz] | Ant Factor [dB] | Cable loss [dB] | Pream gain [dB] | Reading [dBμV] | Level [dBμV/m] | Limit [dBμV/m] | Margin [dB] | Result | Polarity |
|----|-------------|-----------------|-----------------|-----------------|----------------|----------------|----------------|-------------|--------|----------|
| 1  | 2458.7509   | 32.34           | 13.49           | -42.41          | 98.29          | 101.71         | 74.00          | -27.71      | Pass   | Vertical |
| 2  | 2483.5000   | 32.38           | 13.38           | -42.40          | 54.67          | 58.03          | 74.00          | 15.97       | Pass   | Vertical |

|         |                          |          |      |
|---------|--------------------------|----------|------|
| Mode:   | 802.11 n(HT20) (6.5Mbps) | Channel: | 2462 |
| Remark: | AV                       |          |      |

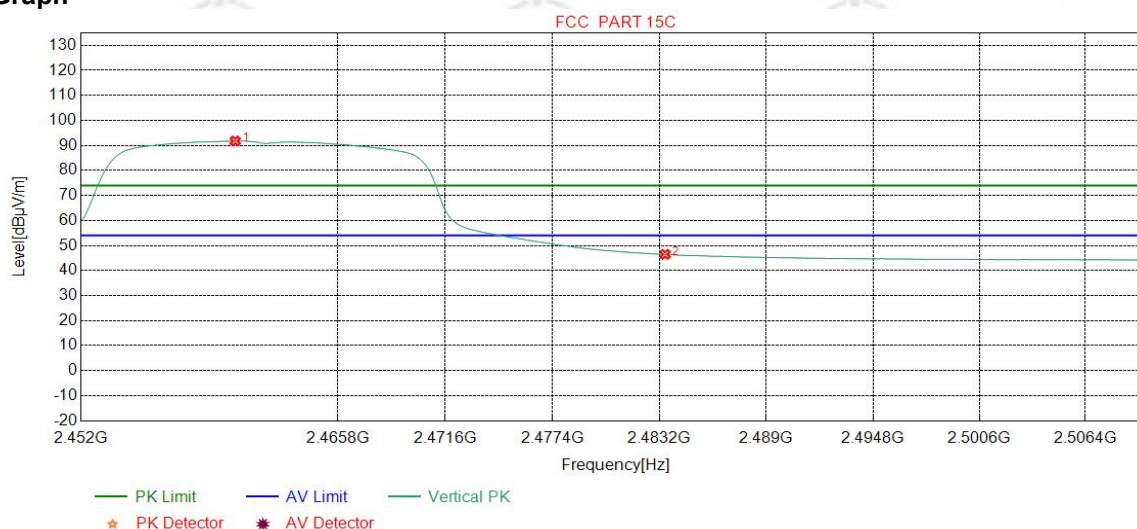
### Test Graph



| NO | Freq. [MHz] | Ant Factor [dB] | Cable loss [dB] | Pream gain [dB] | Reading [dBμV] | Level [dBμV/m] | Limit [dBμV/m] | Margin [dB] | Result | Polarity   |
|----|-------------|-----------------|-----------------|-----------------|----------------|----------------|----------------|-------------|--------|------------|
| 1  | 2460.3479   | 32.34           | 13.48           | -42.40          | 88.36          | 91.78          | 54.00          | -37.78      | Pass   | Horizontal |
| 2  | 2483.5000   | 32.38           | 13.38           | -42.40          | 44.14          | 47.50          | 54.00          | 6.50        | Pass   | Horizontal |

|         |                          |          |      |
|---------|--------------------------|----------|------|
| Mode:   | 802.11 n(HT20) (6.5Mbps) | Channel: | 2462 |
| Remark: | AV                       |          |      |

### Test Graph



| NO | Freq. [MHz] | Ant Factor [dB] | Cable loss [dB] | Pream gain [dB] | Reading [dBμV] | Level [dBμV/m] | Limit [dBμV/m] | Margin [dB] | Result | Polarity |
|----|-------------|-----------------|-----------------|-----------------|----------------|----------------|----------------|-------------|--------|----------|
| 1  | 2460.2753   | 32.34           | 13.48           | -42.40          | 88.35          | 91.77          | 54.00          | -37.77      | Pass   | Vertical |
| 2  | 2483.5000   | 32.38           | 13.38           | -42.40          | 43.09          | 46.45          | 54.00          | 7.55        | Pass   | Vertical |

### Note:

1) Through Pre-scan transmitting mode and charge+transmitter mode with all kind of modulation and data rate, find the 11Mbps of rate is the worst case of 802.11b; 6Mbps of rate is the worst case of 802.11g; 6.5Mbps of rate is the worst case of 802.11n(HT20) and then Only the worst case is recorded in the report.

2) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level = Receiver Reading - Correct Factor

Correct Factor = Preamplifier Factor - Antenna Factor - Cable Factor

## Appendix I): Radiated Spurious Emissions

Receiver Setup:

|                   |            |        |        |            |
|-------------------|------------|--------|--------|------------|
| Frequency         | Detector   | RBW    | VBW    | Remark     |
| 0.009MHz-0.090MHz | Peak       | 10kHz  | 30kHz  | Peak       |
| 0.009MHz-0.090MHz | Average    | 10kHz  | 30kHz  | Average    |
| 0.090MHz-0.110MHz | Quasi-peak | 10kHz  | 30kHz  | Quasi-peak |
| 0.110MHz-0.490MHz | Peak       | 10kHz  | 30kHz  | Peak       |
| 0.110MHz-0.490MHz | Average    | 10kHz  | 30kHz  | Average    |
| 0.490MHz -30MHz   | Quasi-peak | 10kHz  | 30kHz  | Quasi-peak |
| 30MHz-1GHz        | Quasi-peak | 120kHz | 300kHz | Quasi-peak |
| Above 1GHz        | Peak       | 1MHz   | 3MHz   | Peak       |
|                   | Peak       | 1MHz   | 10Hz   | Average    |

Test Procedure:

Below 1GHz test procedure as below:

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. 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.

d. 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 (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

f. 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.

Above 1GHz test procedure as below:

g. Different between above is the test site, change from Semi- Anechoic Chamber to fully Anechoic Chamber and change form table 0.8 meter to 1.5 meter( Above 18GHz the distance is 1 meter and table is 1.5 meter)..

h. Test the EUT in the lowest channel ,the middle channel ,the Highest channel

i. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is worse case.

j. Repeat above procedures until all frequencies measured was complete.

Limit:

|                   |                                  |                |            |                          |
|-------------------|----------------------------------|----------------|------------|--------------------------|
| Frequency         | Field strength (microvolt/meter) | Limit (dBμV/m) | Remark     | Measurement distance (m) |
| 0.009MHz-0.490MHz | 2400/F(kHz)                      | -              | -          | 300                      |
| 0.490MHz-1.705MHz | 24000/F(kHz)                     | -              | -          | 30                       |
| 1.705MHz-30MHz    | 30                               | -              | -          | 30                       |
| 30MHz-88MHz       | 100                              | 40.0           | Quasi-peak | 3                        |
| 88MHz-216MHz      | 150                              | 43.5           | Quasi-peak | 3                        |
| 216MHz-960MHz     | 200                              | 46.0           | Quasi-peak | 3                        |
| 960MHz-1GHz       | 500                              | 54.0           | Quasi-peak | 3                        |
| Above 1GHz        | 500                              | 54.0           | Average    | 3                        |

Note: 15.35(b), Unless otherwise specified, the limit on peak radio frequency emissions is 20dB above the maximum permitted average emission limit applicable to the equipment under test. This peak limit applies to the total peak emission level radiated by the device.

## Radiated Spurious Emissions test Data:

**Product** : Yanshee Robot      **Model/Type reference** : ERHA101  
**Temperature** : 23℃      **Humidity** : 54%

### Radiated Emission below 1GHz

| Mode: |             | 802.11 b (11Mbps) Transmitting |                 |                 |                | Channel:       |                | 2412        |        |          |
|-------|-------------|--------------------------------|-----------------|-----------------|----------------|----------------|----------------|-------------|--------|----------|
| NO    | Freq. [MHz] | Ant Factor [dB]                | Cable loss [dB] | Pream gain [dB] | Reading [dBμV] | Level [dBμV/m] | Limit [dBμV/m] | Margin [dB] | Result | Polarity |
| 1     | 138.2628    | 7.29                           | 1.38            | -32.00          | 46.25          | 22.92          | 43.50          | 20.58       | Pass   | H        |
| 2     | 205.7816    | 11.05                          | 1.70            | -31.95          | 46.44          | 27.24          | 43.50          | 16.26       | Pass   | H        |
| 3     | 254.9655    | 12.30                          | 1.90            | -31.89          | 46.48          | 28.79          | 46.00          | 17.21       | Pass   | H        |
| 4     | 500.0120    | 17.00                          | 2.67            | -31.91          | 36.22          | 23.98          | 46.00          | 22.02       | Pass   | H        |
| 5     | 687.5318    | 19.70                          | 3.14            | -32.06          | 36.57          | 27.35          | 46.00          | 18.65       | Pass   | H        |
| 6     | 875.0515    | 21.80                          | 3.55            | -31.70          | 43.25          | 36.90          | 46.00          | 9.10        | Pass   | H        |
| 7     | 208.8859    | 11.13                          | 1.71            | -31.94          | 53.60          | 34.50          | 43.50          | 9.00        | Pass   | V        |
| 8     | 330.0510    | 13.86                          | 2.16            | -31.76          | 40.27          | 24.53          | 46.00          | 21.47       | Pass   | V        |
| 9     | 431.6202    | 15.91                          | 2.45            | -31.83          | 42.02          | 28.55          | 46.00          | 17.45       | Pass   | V        |
| 10    | 539.1069    | 17.78                          | 2.79            | -31.95          | 38.30          | 26.92          | 46.00          | 19.08       | Pass   | V        |
| 11    | 734.1934    | 20.18                          | 3.28            | -32.12          | 36.69          | 28.03          | 46.00          | 17.97       | Pass   | V        |
| 12    | 875.0515    | 21.80                          | 3.55            | -31.70          | 45.06          | 38.71          | 46.00          | 7.29        | Pass   | V        |

| Mode: |             | 802.11 b (11Mbps) Transmitting |                 |                 |                | Channel:       |                | 2437        |        |          |
|-------|-------------|--------------------------------|-----------------|-----------------|----------------|----------------|----------------|-------------|--------|----------|
| NO    | Freq. [MHz] | Ant Factor [dB]                | Cable loss [dB] | Pream gain [dB] | Reading [dBμV] | Level [dBμV/m] | Limit [dBμV/m] | Margin [dB] | Result | Polarity |
| 1     | 84.5195     | 8.14                           | 1.06            | -32.08          | 48.37          | 25.49          | 40.00          | 14.51       | Pass   | H        |
| 2     | 208.8859    | 11.13                          | 1.71            | -31.94          | 47.91          | 28.81          | 43.50          | 14.69       | Pass   | H        |
| 3     | 254.9655    | 12.30                          | 1.90            | -31.89          | 46.02          | 28.33          | 46.00          | 17.67       | Pass   | H        |
| 4     | 604.6855    | 19.04                          | 2.96            | -32.03          | 39.87          | 29.84          | 46.00          | 16.16       | Pass   | H        |
| 5     | 875.0515    | 21.80                          | 3.55            | -31.70          | 43.27          | 36.92          | 46.00          | 9.08        | Pass   | H        |
| 6     | 960.0320    | 22.46                          | 3.71            | -31.09          | 41.04          | 36.12          | 54.00          | 17.88       | Pass   | H        |
| 7     | 208.8859    | 11.13                          | 1.71            | -31.94          | 53.34          | 34.24          | 43.50          | 9.26        | Pass   | V        |
| 8     | 276.5017    | 12.73                          | 1.98            | -31.91          | 47.85          | 30.65          | 46.00          | 15.35       | Pass   | V        |
| 9     | 433.1723    | 15.93                          | 2.46            | -31.84          | 39.77          | 26.32          | 46.00          | 19.68       | Pass   | V        |
| 10    | 600.0290    | 19.00                          | 2.96            | -31.99          | 38.39          | 28.36          | 46.00          | 17.64       | Pass   | V        |
| 11    | 875.0515    | 21.80                          | 3.55            | -31.70          | 45.62          | 39.27          | 46.00          | 6.73        | Pass   | V        |
| 12    | 960.0320    | 22.46                          | 3.71            | -31.09          | 39.31          | 34.39          | 54.00          | 19.61       | Pass   | V        |

| Mode: |             | 802.11 b (11Mbps) Transmitting |                 |                 |                | Channel:       |                | 2462        |        |          |
|-------|-------------|--------------------------------|-----------------|-----------------|----------------|----------------|----------------|-------------|--------|----------|
| NO    | Freq. [MHz] | Ant Factor [dB]                | Cable loss [dB] | Pream gain [dB] | Reading [dBμV] | Level [dBμV/m] | Limit [dBμV/m] | Margin [dB] | Result | Polarity |
| 1     | 84.5195     | 8.14                           | 1.06            | -32.08          | 43.90          | 21.02          | 40.00          | 18.98       | Pass   | H        |
| 2     | 139.8150    | 7.21                           | 1.39            | -31.99          | 45.74          | 22.35          | 43.50          | 21.15       | Pass   | H        |
| 3     | 208.8859    | 11.13                          | 1.71            | -31.94          | 49.19          | 30.09          | 43.50          | 13.41       | Pass   | H        |
| 4     | 254.9655    | 12.30                          | 1.90            | -31.89          | 46.65          | 28.96          | 46.00          | 17.04       | Pass   | H        |
| 5     | 437.7318    | 16.00                          | 2.47            | -31.86          | 38.88          | 25.49          | 46.00          | 20.51       | Pass   | H        |
| 6     | 875.0515    | 21.80                          | 3.55            | -31.70          | 42.86          | 36.51          | 46.00          | 9.49        | Pass   | H        |
| 7     | 208.8859    | 11.13                          | 1.71            | -31.94          | 52.98          | 33.88          | 43.50          | 9.62        | Pass   | V        |
| 8     | 276.5017    | 12.73                          | 1.98            | -31.91          | 47.18          | 29.98          | 46.00          | 16.02       | Pass   | V        |
| 9     | 433.1723    | 15.93                          | 2.46            | -31.84          | 40.31          | 26.86          | 46.00          | 19.14       | Pass   | V        |
| 10    | 604.7825    | 19.04                          | 2.96            | -32.03          | 37.91          | 27.88          | 46.00          | 18.12       | Pass   | V        |
| 11    | 875.0515    | 21.80                          | 3.55            | -31.70          | 45.79          | 39.44          | 46.00          | 6.56        | Pass   | V        |
| 12    | 960.0320    | 22.46                          | 3.71            | -31.09          | 39.08          | 34.16          | 54.00          | 19.84       | Pass   | V        |

| Mode: |             | 802.11 g (6Mbps) Transmitting |                 |                 |                | Channel:       |                | 2412        |        |          |
|-------|-------------|-------------------------------|-----------------|-----------------|----------------|----------------|----------------|-------------|--------|----------|
| NO    | Freq. [MHz] | Ant Factor [dB]               | Cable loss [dB] | Pream gain [dB] | Reading [dBμV] | Level [dBμV/m] | Limit [dBμV/m] | Margin [dB] | Result | Polarity |
| 1     | 84.5195     | 8.14                          | 1.06            | -32.08          | 42.37          | 19.49          | 40.00          | 20.51       | Pass   | H        |
| 2     | 139.8150    | 7.21                          | 1.39            | -31.99          | 45.42          | 22.03          | 43.50          | 21.47       | Pass   | H        |
| 3     | 208.8859    | 11.13                         | 1.71            | -31.94          | 48.44          | 29.34          | 43.50          | 14.16       | Pass   | H        |
| 4     | 254.9655    | 12.30                         | 1.90            | -31.89          | 47.64          | 29.95          | 46.00          | 16.05       | Pass   | H        |
| 5     | 437.7318    | 16.00                         | 2.47            | -31.86          | 39.46          | 26.07          | 46.00          | 19.93       | Pass   | H        |
| 6     | 687.5318    | 19.70                         | 3.14            | -32.06          | 37.08          | 27.86          | 46.00          | 18.14       | Pass   | H        |
| 7     | 208.8859    | 11.13                         | 1.71            | -31.94          | 53.43          | 34.33          | 43.50          | 9.17        | Pass   | V        |
| 8     | 282.6133    | 12.85                         | 2.00            | -31.91          | 47.69          | 30.63          | 46.00          | 15.37       | Pass   | V        |
| 9     | 350.0350    | 14.30                         | 2.23            | -31.87          | 42.51          | 27.17          | 46.00          | 18.83       | Pass   | V        |
| 10    | 431.6202    | 15.91                         | 2.45            | -31.83          | 38.67          | 25.20          | 46.00          | 20.80       | Pass   | V        |
| 11    | 604.6855    | 19.04                         | 2.96            | -32.03          | 42.74          | 32.71          | 46.00          | 13.29       | Pass   | V        |
| 12    | 875.0515    | 21.80                         | 3.55            | -31.70          | 46.28          | 39.93          | 46.00          | 6.07        | Pass   | V        |

| Mode: |             | 802.11 g (6Mbps) Transmitting |                 |                 |                | Channel:       |                | 2437        |        |          |
|-------|-------------|-------------------------------|-----------------|-----------------|----------------|----------------|----------------|-------------|--------|----------|
| NO    | Freq. [MHz] | Ant Factor [dB]               | Cable loss [dB] | Pream gain [dB] | Reading [dBμV] | Level [dBμV/m] | Limit [dBμV/m] | Margin [dB] | Result | Polarity |
| 1     | 208.8859    | 11.13                         | 1.71            | -31.94          | 50.31          | 31.21          | 43.50          | 12.29       | Pass   | H        |
| 2     | 258.0698    | 12.36                         | 1.91            | -31.87          | 45.96          | 28.36          | 46.00          | 17.64       | Pass   | H        |
| 3     | 437.8288    | 16.01                         | 2.47            | -31.87          | 38.97          | 25.58          | 46.00          | 20.42       | Pass   | H        |
| 4     | 542.2112    | 17.84                         | 2.79            | -31.95          | 37.09          | 25.77          | 46.00          | 20.23       | Pass   | H        |
| 5     | 806.4656    | 20.98                         | 3.41            | -32.01          | 35.37          | 27.75          | 46.00          | 18.25       | Pass   | H        |
| 6     | 875.0515    | 21.80                         | 3.55            | -31.70          | 43.34          | 36.99          | 46.00          | 9.01        | Pass   | H        |
| 7     | 143.9864    | 7.34                          | 1.41            | -31.99          | 45.05          | 21.81          | 43.50          | 21.69       | Pass   | V        |
| 8     | 208.8859    | 11.13                         | 1.71            | -31.94          | 53.16          | 34.06          | 43.50          | 9.44        | Pass   | V        |
| 9     | 276.5017    | 12.73                         | 1.98            | -31.91          | 48.42          | 31.22          | 46.00          | 14.78       | Pass   | V        |
| 10    | 433.1723    | 15.93                         | 2.46            | -31.84          | 39.94          | 26.49          | 46.00          | 19.51       | Pass   | V        |
| 11    | 549.9720    | 18.00                         | 2.79            | -31.96          | 41.23          | 30.06          | 46.00          | 15.94       | Pass   | V        |
| 12    | 734.1934    | 20.18                         | 3.28            | -32.12          | 37.77          | 29.11          | 46.00          | 16.89       | Pass   | V        |

| Mode: |             | 802.11 g (6Mbps) Transmitting |                 |                 |                | Channel:       |                | 2462        |        |          |
|-------|-------------|-------------------------------|-----------------|-----------------|----------------|----------------|----------------|-------------|--------|----------|
| NO    | Freq. [MHz] | Ant Factor [dB]               | Cable loss [dB] | Pream gain [dB] | Reading [dBμV] | Level [dBμV/m] | Limit [dBμV/m] | Margin [dB] | Result | Polarity |
| 1     | 208.8859    | 11.13                         | 1.71            | -31.94          | 49.05          | 29.95          | 43.50          | 13.55       | Pass   | H        |
| 2     | 258.0698    | 12.36                         | 1.91            | -31.87          | 47.10          | 29.50          | 46.00          | 16.50       | Pass   | H        |
| 3     | 437.7318    | 16.00                         | 2.47            | -31.86          | 37.58          | 24.19          | 46.00          | 21.81       | Pass   | H        |
| 4     | 600.0290    | 19.00                         | 2.96            | -31.99          | 37.29          | 27.26          | 46.00          | 18.74       | Pass   | H        |
| 5     | 875.0515    | 21.80                         | 3.55            | -31.70          | 43.06          | 36.71          | 46.00          | 9.29        | Pass   | H        |
| 6     | 53.5734     | 12.63                         | 0.83            | -32.09          | 37.47          | 18.84          | 40.00          | 21.16       | Pass   | V        |
| 7     | 81.4151     | 7.43                          | 1.05            | -32.08          | 42.17          | 18.57          | 40.00          | 21.43       | Pass   | V        |
| 8     | 176.6787    | 8.82                          | 1.56            | -31.98          | 48.79          | 27.19          | 43.50          | 16.31       | Pass   | V        |
| 9     | 276.5017    | 12.73                         | 1.98            | -31.91          | 47.50          | 30.30          | 46.00          | 15.70       | Pass   | V        |
| 10    | 350.0350    | 14.30                         | 2.23            | -31.87          | 41.35          | 26.01          | 46.00          | 19.99       | Pass   | V        |
| 11    | 536.0996    | 17.72                         | 2.78            | -31.93          | 38.72          | 27.29          | 46.00          | 18.71       | Pass   | V        |

| Mode: |             | 802.11 n (HT20) (6.5Mbps) |                 |                 |                | Channel:       |                | 2412        |        |          |
|-------|-------------|---------------------------|-----------------|-----------------|----------------|----------------|----------------|-------------|--------|----------|
| NO    | Freq. [MHz] | Ant Factor [dB]           | Cable loss [dB] | Pream gain [dB] | Reading [dBμV] | Level [dBμV/m] | Limit [dBμV/m] | Margin [dB] | Result | Polarity |
| 1     | 130.5021    | 7.67                      | 1.33            | -32.01          | 43.79          | 20.78          | 43.50          | 22.72       | Pass   | H        |
| 2     | 208.8859    | 11.13                     | 1.71            | -31.94          | 48.33          | 29.23          | 43.50          | 14.27       | Pass   | H        |
| 3     | 254.9655    | 12.30                     | 1.90            | -31.89          | 47.10          | 29.41          | 46.00          | 16.59       | Pass   | H        |
| 4     | 437.7318    | 16.00                     | 2.47            | -31.86          | 38.99          | 25.60          | 46.00          | 20.40       | Pass   | H        |
| 5     | 687.5318    | 19.70                     | 3.14            | -32.06          | 37.46          | 28.24          | 46.00          | 17.76       | Pass   | H        |
| 6     | 874.9545    | 21.80                     | 3.54            | -31.70          | 43.37          | 37.01          | 46.00          | 8.99        | Pass   | H        |
| 7     | 208.8859    | 11.13                     | 1.71            | -31.94          | 53.49          | 34.39          | 43.50          | 9.11        | Pass   | V        |
| 8     | 273.3973    | 12.67                     | 1.97            | -31.90          | 47.68          | 30.42          | 46.00          | 15.58       | Pass   | V        |
| 9     | 362.5493    | 14.58                     | 2.28            | -31.86          | 40.03          | 25.03          | 46.00          | 20.97       | Pass   | V        |
| 10    | 433.0753    | 15.93                     | 2.46            | -31.84          | 38.68          | 25.23          | 46.00          | 20.77       | Pass   | V        |
| 11    | 536.0026    | 17.72                     | 2.78            | -31.94          | 39.26          | 27.82          | 46.00          | 18.18       | Pass   | V        |
| 12    | 875.0515    | 21.80                     | 3.55            | -31.70          | 45.70          | 39.35          | 46.00          | 6.65        | Pass   | V        |

| Mode: |             | 802.11 n (HT20) (6.5Mbps) |                 |                 |                | Channel:       |                | 2437        |        |          |
|-------|-------------|---------------------------|-----------------|-----------------|----------------|----------------|----------------|-------------|--------|----------|
| NO    | Freq. [MHz] | Ant Factor [dB]           | Cable loss [dB] | Pream gain [dB] | Reading [dBμV] | Level [dBμV/m] | Limit [dBμV/m] | Margin [dB] | Result | Polarity |
| 1     | 208.8859    | 11.13                     | 1.71            | -31.94          | 48.33          | 29.23          | 43.50          | 14.27       | Pass   | H        |
| 2     | 254.9655    | 12.30                     | 1.90            | -31.89          | 47.71          | 30.02          | 46.00          | 15.98       | Pass   | H        |
| 3     | 437.7318    | 16.00                     | 2.47            | -31.86          | 38.34          | 24.95          | 46.00          | 21.05       | Pass   | H        |
| 4     | 536.0996    | 17.72                     | 2.78            | -31.93          | 38.77          | 27.34          | 46.00          | 18.66       | Pass   | H        |
| 5     | 764.9455    | 20.51                     | 3.31            | -32.06          | 36.59          | 28.35          | 46.00          | 17.65       | Pass   | H        |
| 6     | 875.0515    | 21.80                     | 3.55            | -31.70          | 42.88          | 36.53          | 46.00          | 9.47        | Pass   | H        |
| 7     | 176.6787    | 8.82                      | 1.56            | -31.98          | 48.67          | 27.07          | 43.50          | 16.43       | Pass   | V        |
| 8     | 208.8859    | 11.13                     | 1.71            | -31.94          | 53.00          | 33.90          | 43.50          | 9.60        | Pass   | V        |
| 9     | 276.5017    | 12.73                     | 1.98            | -31.91          | 47.76          | 30.56          | 46.00          | 15.44       | Pass   | V        |
| 10    | 362.4522    | 14.57                     | 2.27            | -31.84          | 39.99          | 24.99          | 46.00          | 21.01       | Pass   | V        |
| 11    | 539.2039    | 17.78                     | 2.79            | -31.95          | 38.68          | 27.30          | 46.00          | 18.70       | Pass   | V        |
| 12    | 875.0515    | 21.80                     | 3.55            | -31.70          | 44.71          | 38.36          | 46.00          | 7.64        | Pass   | V        |

| Mode: |                | 802.11 n (HT20) (6.5Mbps) |                       |                       |                   | Channel:          |                   | 2462           |        |          |
|-------|----------------|---------------------------|-----------------------|-----------------------|-------------------|-------------------|-------------------|----------------|--------|----------|
| NO    | Freq.<br>[MHz] | Ant<br>Factor<br>[dB]     | Cable<br>loss<br>[dB] | Pream<br>gain<br>[dB] | Reading<br>[dBμV] | Level<br>[dBμV/m] | Limit<br>[dBμV/m] | Margin<br>[dB] | Result | Polarity |
| 1     | 181.2381       | 9.12                      | 1.58                  | -31.99                | 45.56             | 24.27             | 43.50             | 19.23          | Pass   | H        |
| 2     | 208.8859       | 11.13                     | 1.71                  | -31.94                | 48.17             | 29.07             | 43.50             | 14.43          | Pass   | H        |
| 3     | 254.9655       | 12.30                     | 1.90                  | -31.89                | 47.77             | 30.08             | 46.00             | 15.92          | Pass   | H        |
| 4     | 437.7318       | 16.00                     | 2.47                  | -31.86                | 38.86             | 25.47             | 46.00             | 20.53          | Pass   | H        |
| 5     | 532.9953       | 17.66                     | 2.77                  | -31.92                | 38.39             | 26.90             | 46.00             | 19.10          | Pass   | H        |
| 6     | 875.0515       | 21.80                     | 3.55                  | -31.70                | 43.64             | 37.29             | 46.00             | 8.71           | Pass   | H        |
| 7     | 176.6787       | 8.82                      | 1.56                  | -31.98                | 49.27             | 27.67             | 43.50             | 15.83          | Pass   | V        |
| 8     | 208.8859       | 11.13                     | 1.71                  | -31.94                | 53.13             | 34.03             | 43.50             | 9.47           | Pass   | V        |
| 9     | 254.9655       | 12.30                     | 1.90                  | -31.89                | 47.91             | 30.22             | 46.00             | 15.78          | Pass   | V        |
| 10    | 330.2450       | 13.87                     | 2.16                  | -31.77                | 45.62             | 29.88             | 46.00             | 16.12          | Pass   | V        |
| 11    | 549.9720       | 18.00                     | 2.79                  | -31.96                | 38.52             | 27.35             | 46.00             | 18.65          | Pass   | V        |
| 12    | 875.0515       | 21.80                     | 3.55                  | -31.70                | 45.32             | 38.97             | 46.00             | 7.03           | Pass   | V        |

**Transmitter Emission above 1GHz**

| Mode: |             | 802.11 b (11Mbps) Transmitting |                 |                 |                | Channel:       |                | 2412        |        |          |        |
|-------|-------------|--------------------------------|-----------------|-----------------|----------------|----------------|----------------|-------------|--------|----------|--------|
| NO    | Freq. [MHz] | Ant Factor [dB]                | Cable loss [dB] | Pream gain [dB] | Reading [dBμV] | Level [dBμV/m] | Limit [dBμV/m] | Margin [dB] | Result | Polarity | Remark |
| 1     | 1092.6093   | 27.99                          | 2.55            | -42.71          | 53.71          | 41.54          | 74.00          | 32.46       | Pass   | H        | Peak   |
| 2     | 2855.1855   | 32.97                          | 4.25            | -42.20          | 51.26          | 46.28          | 74.00          | 27.72       | Pass   | H        | Peak   |
| 3     | 4824.0000   | 34.50                          | 4.61            | -40.65          | 44.90          | 43.36          | 74.00          | 30.64       | Pass   | H        | Peak   |
| 4     | 7236.0000   | 36.34                          | 5.79            | -40.99          | 44.93          | 46.07          | 74.00          | 27.93       | Pass   | H        | Peak   |
| 5     | 9648.0000   | 37.66                          | 6.72            | -40.73          | 42.74          | 46.39          | 74.00          | 27.61       | Pass   | H        | Peak   |
| 6     | 14795.7864  | 40.32                          | 8.94            | -42.30          | 46.14          | 53.10          | 74.00          | 20.90       | Pass   | H        | Peak   |
| 7     | 1721.2721   | 29.86                          | 3.21            | -42.67          | 52.97          | 43.37          | 74.00          | 30.63       | Pass   | V        | Peak   |
| 8     | 3084.0056   | 33.23                          | 4.76            | -42.07          | 49.85          | 45.77          | 74.00          | 28.23       | Pass   | V        | Peak   |
| 9     | 4824.0000   | 34.50                          | 4.61            | -40.65          | 44.50          | 42.96          | 74.00          | 31.04       | Pass   | V        | Peak   |
| 10    | 7236.0000   | 36.34                          | 5.79            | -40.99          | 44.60          | 45.74          | 74.00          | 28.26       | Pass   | V        | Peak   |
| 11    | 9648.0000   | 37.66                          | 6.72            | -40.73          | 42.53          | 46.18          | 74.00          | 27.82       | Pass   | V        | Peak   |
| 12    | 12982.6655  | 39.60                          | 8.27            | -41.71          | 45.52          | 51.68          | 74.00          | 22.32       | Pass   | V        | Peak   |

| Mode: |             | 802.11 b (11Mbps) Transmitting |                 |                 |                | Channel:       |                | 2437        |        |          |        |
|-------|-------------|--------------------------------|-----------------|-----------------|----------------|----------------|----------------|-------------|--------|----------|--------|
| NO    | Freq. [MHz] | Ant Factor [dB]                | Cable loss [dB] | Pream gain [dB] | Reading [dBμV] | Level [dBμV/m] | Limit [dBμV/m] | Margin [dB] | Result | Polarity | Remark |
| 1     | 2821.9822   | 32.92                          | 4.24            | -42.23          | 52.12          | 47.05          | 74.00          | 26.95       | Pass   | H        | Peak   |
| 2     | 4874.0000   | 34.50                          | 4.78            | -40.61          | 45.17          | 43.84          | 74.00          | 30.16       | Pass   | H        | Peak   |
| 3     | 7311.0000   | 36.41                          | 5.85            | -40.93          | 43.20          | 44.53          | 74.00          | 29.47       | Pass   | H        | Peak   |
| 4     | 9748.0000   | 37.70                          | 6.77            | -40.63          | 41.81          | 45.65          | 74.00          | 28.35       | Pass   | H        | Peak   |
| 5     | 12408.6272  | 39.55                          | 7.82            | -41.12          | 45.31          | 51.56          | 74.00          | 22.44       | Pass   | H        | Peak   |
| 6     | 14271.7515  | 39.97                          | 8.60            | -41.81          | 45.97          | 52.73          | 74.00          | 21.27       | Pass   | H        | Peak   |
| 7     | 2822.5823   | 32.92                          | 4.24            | -42.22          | 51.61          | 46.55          | 74.00          | 27.45       | Pass   | V        | Peak   |
| 8     | 3225.0150   | 33.29                          | 4.55            | -41.99          | 51.18          | 47.03          | 74.00          | 26.97       | Pass   | V        | Peak   |
| 9     | 4874.0000   | 34.50                          | 4.78            | -40.61          | 43.51          | 42.18          | 74.00          | 31.82       | Pass   | V        | Peak   |
| 10    | 7311.0000   | 36.41                          | 5.85            | -40.93          | 43.36          | 44.69          | 74.00          | 29.31       | Pass   | V        | Peak   |
| 11    | 9748.0000   | 37.70                          | 6.77            | -40.63          | 42.51          | 46.35          | 74.00          | 27.65       | Pass   | V        | Peak   |
| 12    | 13680.7120  | 39.51                          | 8.27            | -41.21          | 46.06          | 52.63          | 74.00          | 21.37       | Pass   | V        | Peak   |

| Mode: |             | 802.11 b (11Mbps) Transmitting |                 |                 |                | Channel:       |                | 2462        |        |          |        |
|-------|-------------|--------------------------------|-----------------|-----------------|----------------|----------------|----------------|-------------|--------|----------|--------|
| NO    | Freq. [MHz] | Ant Factor [dB]                | Cable loss [dB] | Pream gain [dB] | Reading [dBμV] | Level [dBμV/m] | Limit [dBμV/m] | Margin [dB] | Result | Polarity | Remark |
| 1     | 3075.0050   | 33.23                          | 4.77            | -42.07          | 50.84          | 46.77          | 74.00          | 27.23       | Pass   | H        | Peak   |
| 2     | 4924.0000   | 34.50                          | 4.85            | -40.56          | 47.93          | 46.72          | 74.00          | 27.28       | Pass   | H        | Peak   |
| 3     | 7386.0000   | 36.49                          | 5.85            | -40.87          | 44.79          | 46.26          | 74.00          | 27.74       | Pass   | H        | Peak   |
| 4     | 9848.0000   | 37.74                          | 6.83            | -40.54          | 41.46          | 45.49          | 74.00          | 28.51       | Pass   | H        | Peak   |
| 5     | 11705.5804  | 39.06                          | 7.49            | -41.31          | 46.33          | 51.57          | 74.00          | 22.43       | Pass   | H        | Peak   |
| 6     | 14986.7991  | 40.39                          | 9.02            | -42.31          | 46.07          | 53.17          | 74.00          | 20.83       | Pass   | H        | Peak   |
| 7     | 3226.0151   | 33.29                          | 4.55            | -41.99          | 51.23          | 47.08          | 74.00          | 26.92       | Pass   | V        | Peak   |
| 8     | 4924.0000   | 34.50                          | 4.85            | -40.56          | 43.63          | 42.42          | 74.00          | 31.58       | Pass   | V        | Peak   |
| 9     | 5944.1963   | 35.71                          | 5.29            | -41.04          | 45.31          | 45.27          | 74.00          | 28.73       | Pass   | V        | Peak   |
| 10    | 7386.0000   | 36.49                          | 5.85            | -40.87          | 44.02          | 45.49          | 74.00          | 28.51       | Pass   | V        | Peak   |
| 11    | 9848.0000   | 37.74                          | 6.83            | -40.54          | 41.49          | 45.52          | 74.00          | 28.48       | Pass   | V        | Peak   |
| 12    | 11769.5846  | 39.12                          | 7.47            | -41.30          | 47.77          | 53.06          | 74.00          | 20.94       | Pass   | V        | Peak   |

| Mode: |             | 802.11 g (6Mbps) Transmitting |                 |                 |                | Channel:       |                | 2412        |        |          |        |
|-------|-------------|-------------------------------|-----------------|-----------------|----------------|----------------|----------------|-------------|--------|----------|--------|
| NO    | Freq. [MHz] | Ant Factor [dB]               | Cable loss [dB] | Pream gain [dB] | Reading [dBμV] | Level [dBμV/m] | Limit [dBμV/m] | Margin [dB] | Result | Polarity | Remark |
| 1     | 2822.5823   | 32.92                         | 4.24            | -42.22          | 51.83          | 46.77          | 74.00          | 27.23       | Pass   | H        | Peak   |
| 2     | 4824.0000   | 34.50                         | 4.61            | -40.65          | 44.24          | 42.70          | 74.00          | 31.30       | Pass   | H        | Peak   |
| 3     | 7236.0000   | 36.34                         | 5.79            | -40.99          | 44.44          | 45.58          | 74.00          | 28.42       | Pass   | H        | Peak   |
| 4     | 9648.0000   | 37.66                         | 6.72            | -40.73          | 42.95          | 46.60          | 74.00          | 27.40       | Pass   | H        | Peak   |
| 5     | 13744.7163  | 39.55                         | 8.31            | -41.22          | 46.15          | 52.79          | 74.00          | 21.21       | Pass   | H        | Peak   |
| 6     | 15021.8015  | 40.42                         | 9.21            | -42.35          | 46.32          | 53.60          | 74.00          | 20.40       | Pass   | H        | Peak   |
| 7     | 1209.8210   | 28.11                         | 2.66            | -42.88          | 58.74          | 46.63          | 74.00          | 27.37       | Pass   | V        | Peak   |
| 8     | 2822.1822   | 32.92                         | 4.24            | -42.22          | 51.84          | 46.78          | 74.00          | 27.22       | Pass   | V        | Peak   |
| 9     | 4824.0000   | 34.50                         | 4.61            | -40.65          | 42.00          | 40.46          | 74.00          | 33.54       | Pass   | V        | Peak   |
| 10    | 7236.0000   | 36.34                         | 5.79            | -40.99          | 43.84          | 44.98          | 74.00          | 29.02       | Pass   | V        | Peak   |
| 11    | 9648.0000   | 37.66                         | 6.72            | -40.73          | 42.87          | 46.52          | 74.00          | 27.48       | Pass   | V        | Peak   |
| 12    | 14853.7903  | 40.34                         | 9.12            | -42.30          | 45.55          | 52.71          | 74.00          | 21.29       | Pass   | V        | Peak   |

| Mode: |             | 802.11 g (6Mbps) Transmitting |                 |                 |                | Channel:       |                | 2437        |        |          |        |
|-------|-------------|-------------------------------|-----------------|-----------------|----------------|----------------|----------------|-------------|--------|----------|--------|
| NO    | Freq. [MHz] | Ant Factor [dB]               | Cable loss [dB] | Pream gain [dB] | Reading [dBμV] | Level [dBμV/m] | Limit [dBμV/m] | Margin [dB] | Result | Polarity | Remark |
| 1     | 2014.7015   | 31.72                         | 3.50            | -42.61          | 53.65          | 46.26          | 74.00          | 27.74       | Pass   | H        | Peak   |
| 2     | 2944.3944   | 33.11                         | 4.40            | -42.15          | 50.54          | 45.90          | 74.00          | 28.10       | Pass   | H        | Peak   |
| 3     | 4874.0000   | 34.50                         | 4.78            | -40.61          | 42.45          | 41.12          | 74.00          | 32.88       | Pass   | H        | Peak   |
| 4     | 7311.0000   | 36.41                         | 5.85            | -40.93          | 42.86          | 44.19          | 74.00          | 29.81       | Pass   | H        | Peak   |
| 5     | 9748.0000   | 37.70                         | 6.77            | -40.63          | 41.04          | 44.88          | 74.00          | 29.12       | Pass   | H        | Peak   |
| 6     | 11714.5810  | 39.07                         | 7.48            | -41.30          | 47.55          | 52.80          | 74.00          | 21.20       | Pass   | H        | Peak   |
| 7     | 1209.6210   | 28.11                         | 2.66            | -42.88          | 57.06          | 44.95          | 74.00          | 29.05       | Pass   | V        | Peak   |
| 8     | 3226.0151   | 33.29                         | 4.55            | -41.99          | 51.07          | 46.92          | 74.00          | 27.08       | Pass   | V        | Peak   |
| 9     | 4874.0000   | 34.50                         | 4.78            | -40.61          | 43.77          | 42.44          | 74.00          | 31.56       | Pass   | V        | Peak   |
| 10    | 7311.0000   | 36.41                         | 5.85            | -40.93          | 43.42          | 44.75          | 74.00          | 29.25       | Pass   | V        | Peak   |
| 11    | 9748.0000   | 37.70                         | 6.77            | -40.63          | 41.36          | 45.20          | 74.00          | 28.80       | Pass   | V        | Peak   |
| 12    | 11732.5822  | 39.09                         | 7.48            | -41.31          | 46.57          | 51.83          | 74.00          | 22.17       | Pass   | V        | Peak   |

| Mode: |             | 802.11 g (6Mbps) Transmitting |                 |                 |                | Channel:       |                | 2462        |        |          |        |
|-------|-------------|-------------------------------|-----------------|-----------------|----------------|----------------|----------------|-------------|--------|----------|--------|
| NO    | Freq. [MHz] | Ant Factor [dB]               | Cable loss [dB] | Pream gain [dB] | Reading [dBμV] | Level [dBμV/m] | Limit [dBμV/m] | Margin [dB] | Result | Polarity | Remark |
| 1     | 3192.0128   | 33.28                         | 4.64            | -42.01          | 50.12          | 46.03          | 74.00          | 27.97       | Pass   | H        | Peak   |
| 2     | 4924.0000   | 34.50                         | 4.85            | -40.56          | 45.54          | 44.33          | 74.00          | 29.67       | Pass   | H        | Peak   |
| 3     | 7386.0000   | 36.49                         | 5.85            | -40.87          | 42.93          | 44.40          | 74.00          | 29.60       | Pass   | H        | Peak   |
| 4     | 9848.0000   | 37.74                         | 6.83            | -40.54          | 41.06          | 45.09          | 74.00          | 28.91       | Pass   | H        | Peak   |
| 5     | 12585.6390  | 39.60                         | 8.16            | -41.21          | 45.42          | 51.97          | 74.00          | 22.03       | Pass   | H        | Peak   |
| 6     | 14911.7941  | 40.36                         | 9.16            | -42.31          | 46.20          | 53.41          | 74.00          | 20.59       | Pass   | H        | Peak   |
| 7     | 3024.0016   | 33.21                         | 4.88            | -42.10          | 50.98          | 46.97          | 74.00          | 27.03       | Pass   | V        | Peak   |
| 8     | 4924.0000   | 34.50                         | 4.85            | -40.56          | 43.70          | 42.49          | 74.00          | 31.51       | Pass   | V        | Peak   |
| 9     | 7386.0000   | 36.49                         | 5.85            | -40.87          | 43.13          | 44.60          | 74.00          | 29.40       | Pass   | V        | Peak   |
| 10    | 9848.0000   | 37.74                         | 6.83            | -40.54          | 41.35          | 45.38          | 74.00          | 28.62       | Pass   | V        | Peak   |
| 11    | 12953.6636  | 39.60                         | 8.13            | -41.68          | 45.70          | 51.75          | 74.00          | 22.25       | Pass   | V        | Peak   |
| 12    | 15008.8006  | 40.41                         | 9.09            | -42.33          | 46.44          | 53.61          | 74.00          | 20.39       | Pass   | V        | Peak   |

| Mode: |             | 802.11 n (HT20) (6.5Mbps) |                 |                 |                | Channel:       |                | 2412        |        |          |        |
|-------|-------------|---------------------------|-----------------|-----------------|----------------|----------------|----------------|-------------|--------|----------|--------|
| NO    | Freq. [MHz] | Ant Factor [dB]           | Cable loss [dB] | Pream gain [dB] | Reading [dBμV] | Level [dBμV/m] | Limit [dBμV/m] | Margin [dB] | Result | Polarity | Remark |
| 1     | 2706.9707   | 32.73                     | 4.12            | -42.27          | 52.88          | 47.46          | 74.00          | 26.54       | Pass   | H        | Peak   |
| 2     | 4824.0000   | 34.50                     | 4.61            | -40.65          | 42.96          | 41.42          | 74.00          | 32.58       | Pass   | H        | Peak   |
| 3     | 7236.0000   | 36.34                     | 5.79            | -40.99          | 43.46          | 44.60          | 74.00          | 29.40       | Pass   | H        | Peak   |
| 4     | 9648.0000   | 37.66                     | 6.72            | -40.73          | 43.57          | 47.22          | 74.00          | 26.78       | Pass   | H        | Peak   |
| 5     | 12238.6159  | 39.44                     | 7.70            | -41.15          | 45.75          | 51.74          | 74.00          | 22.26       | Pass   | H        | Peak   |
| 6     | 15084.8057  | 40.48                     | 9.55            | -42.43          | 45.71          | 53.31          | 74.00          | 20.69       | Pass   | H        | Peak   |
| 7     | 17561.5805  | 42.65                     | 11.40           | -43.66          | 33.86          | 44.25          | 54.00          | 9.75        | Pass   | H        | AV     |
| 8     | 2822.9823   | 32.92                     | 4.24            | -42.22          | 51.94          | 46.88          | 74.00          | 27.12       | Pass   | V        | Peak   |
| 9     | 4824.0000   | 34.50                     | 4.61            | -40.65          | 44.44          | 42.90          | 74.00          | 31.10       | Pass   | V        | Peak   |
| 10    | 7236.0000   | 36.34                     | 5.79            | -40.99          | 43.53          | 44.67          | 74.00          | 29.33       | Pass   | V        | Peak   |
| 11    | 9648.0000   | 37.66                     | 6.72            | -40.73          | 42.25          | 45.90          | 74.00          | 28.10       | Pass   | V        | Peak   |
| 12    | 11695.5797  | 39.06                     | 7.49            | -41.32          | 46.38          | 51.61          | 74.00          | 22.39       | Pass   | V        | Peak   |
| 13    | 13665.7110  | 39.50                     | 8.20            | -41.20          | 45.93          | 52.43          | 74.00          | 21.57       | Pass   | V        | Peak   |

| Mode: |             | 802.11 n (HT20) (6.5Mbps) |                 |                 |                | Channel:       |                | 2437        |        |          |        |
|-------|-------------|---------------------------|-----------------|-----------------|----------------|----------------|----------------|-------------|--------|----------|--------|
| NO    | Freq. [MHz] | Ant Factor [dB]           | Cable loss [dB] | Pream gain [dB] | Reading [dBμV] | Level [dBμV/m] | Limit [dBμV/m] | Margin [dB] | Result | Polarity | Remark |
| 1     | 2822.3822   | 32.92                     | 4.24            | -42.22          | 52.27          | 47.21          | 74.00          | 26.79       | Pass   | H        | Peak   |
| 2     | 4874.0000   | 34.50                     | 4.78            | -40.61          | 43.72          | 42.39          | 74.00          | 31.61       | Pass   | H        | Peak   |
| 3     | 7311.0000   | 36.41                     | 5.85            | -40.93          | 43.42          | 44.75          | 74.00          | 29.25       | Pass   | H        | Peak   |
| 4     | 9748.0000   | 37.70                     | 6.77            | -40.63          | 42.16          | 46.00          | 74.00          | 28.00       | Pass   | H        | Peak   |
| 5     | 11755.5837  | 39.10                     | 7.47            | -41.29          | 46.43          | 51.71          | 74.00          | 22.29       | Pass   | H        | Peak   |
| 6     | 14346.7565  | 40.05                     | 8.63            | -41.96          | 46.39          | 53.11          | 74.00          | 20.89       | Pass   | H        | Peak   |
| 7     | 3076.0051   | 33.23                     | 4.77            | -42.07          | 50.13          | 46.06          | 74.00          | 27.94       | Pass   | V        | Peak   |
| 8     | 4874.0000   | 34.50                     | 4.78            | -40.61          | 43.02          | 41.69          | 74.00          | 32.31       | Pass   | V        | Peak   |
| 9     | 7311.0000   | 36.41                     | 5.85            | -40.93          | 42.92          | 44.25          | 74.00          | 29.75       | Pass   | V        | Peak   |
| 10    | 9748.0000   | 37.70                     | 6.77            | -40.63          | 42.12          | 45.96          | 74.00          | 28.04       | Pass   | V        | Peak   |
| 11    | 11481.5654  | 38.89                     | 7.62            | -41.37          | 44.46          | 49.60          | 74.00          | 24.40       | Pass   | V        | Peak   |
| 12    | 12877.6585  | 39.60                     | 7.97            | -41.58          | 45.72          | 51.71          | 74.00          | 22.29       | Pass   | V        | Peak   |

| Mode: |             | 802.11 n (HT20) (6.5Mbps) |                 |                 |                | Channel:       |                | 2462        |        |          |        |
|-------|-------------|---------------------------|-----------------|-----------------|----------------|----------------|----------------|-------------|--------|----------|--------|
| NO    | Freq. [MHz] | Ant Factor [dB]           | Cable loss [dB] | Pream gain [dB] | Reading [dBμV] | Level [dBμV/m] | Limit [dBμV/m] | Margin [dB] | Result | Polarity | Remark |
| 1     | 3092.0061   | 33.24                     | 4.74            | -42.07          | 50.29          | 46.20          | 74.00          | 27.80       | Pass   | H        | Peak   |
| 2     | 4924.0000   | 34.50                     | 4.85            | -40.56          | 42.64          | 41.43          | 74.00          | 32.57       | Pass   | H        | Peak   |
| 3     | 7386.0000   | 36.49                     | 5.85            | -40.87          | 43.76          | 45.23          | 74.00          | 28.77       | Pass   | H        | Peak   |
| 4     | 9848.0000   | 37.74                     | 6.83            | -40.54          | 41.59          | 45.62          | 74.00          | 28.38       | Pass   | H        | Peak   |
| 5     | 12324.6216  | 39.49                     | 7.69            | -41.13          | 46.08          | 52.13          | 74.00          | 21.87       | Pass   | H        | Peak   |
| 6     | 15821.8548  | 41.54                     | 9.55            | -43.23          | 45.95          | 53.81          | 74.00          | 20.19       | Pass   | H        | Peak   |
| 7     | 17979.7185  | 42.32                     | 10.80           | -43.25          | 32.08          | 41.95          | 54.00          | 12.05       | Pass   | H        | AV     |
| 8     | 2821.7822   | 32.91                     | 4.24            | -42.22          | 51.62          | 46.55          | 74.00          | 27.45       | Pass   | V        | Peak   |
| 9     | 4924.0000   | 34.50                     | 4.85            | -40.56          | 43.21          | 42.00          | 74.00          | 32.00       | Pass   | V        | Peak   |
| 10    | 7386.0000   | 36.49                     | 5.85            | -40.87          | 43.95          | 45.42          | 74.00          | 28.58       | Pass   | V        | Peak   |
| 11    | 9848.0000   | 37.74                     | 6.83            | -40.54          | 40.80          | 44.83          | 74.00          | 29.17       | Pass   | V        | Peak   |
| 12    | 11750.5834  | 39.10                     | 7.47            | -41.29          | 46.62          | 51.90          | 74.00          | 22.10       | Pass   | V        | Peak   |
| 13    | 15087.8059  | 40.49                     | 9.56            | -42.44          | 46.07          | 53.68          | 74.00          | 20.32       | Pass   | V        | Peak   |

**Note:**

1) Through Pre-scan transmitting mode and charge+transmitter mode with all kind of modulation and data rate, find the 11Mbps of rate is the worst case of 802.11b; 6Mbps of rate is the worst case of 802.11g; 6.5Mbps of rate is the worst case of 802.11n(HT20) , and then Only the worst case is recorded in the report.

2) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

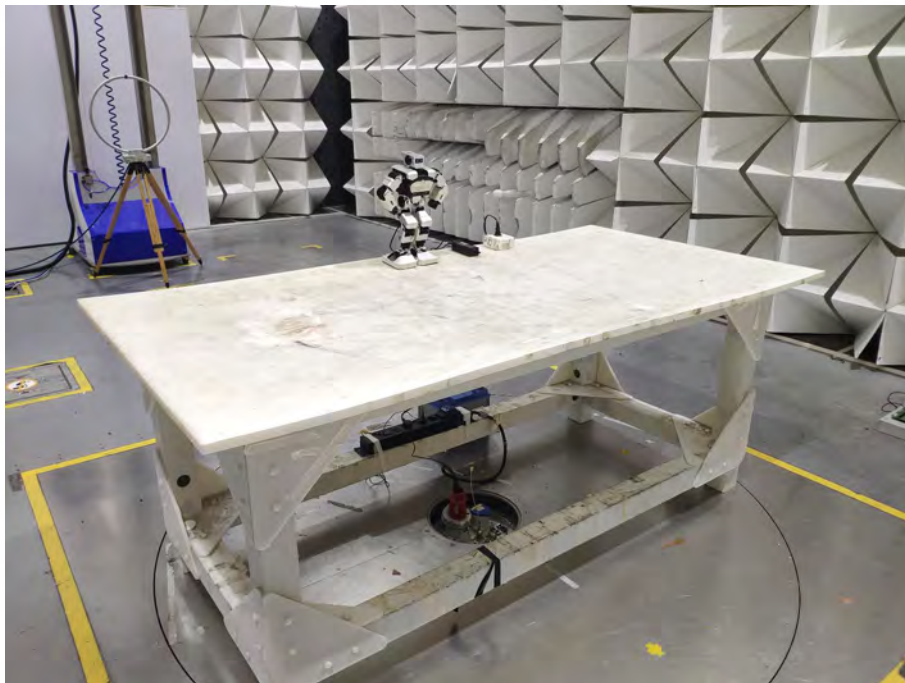
Final Test Level = Receiver Reading - Correct Factor

Correct Factor = Preamplifier Factor - Antenna Factor - Cable Factor

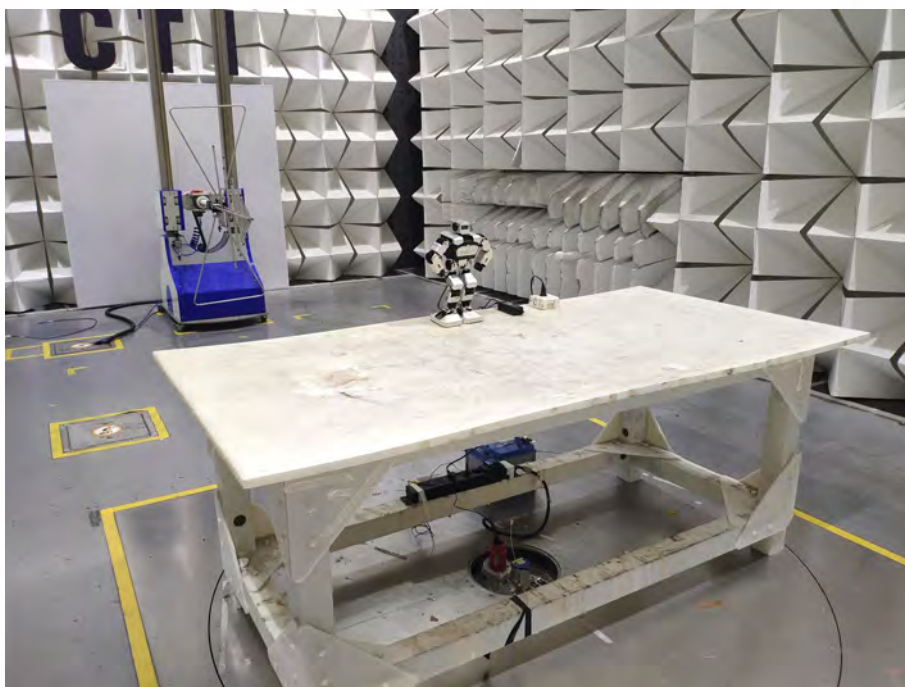
3) Scan from 9kHz to 25GHz, the disturbance above 13GHz and below 30MHz was very low, and the above harmonics were the highest point could be found when testing, so only the above harmonics had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.

## PHOTOGRAPHS OF TEST SETUP

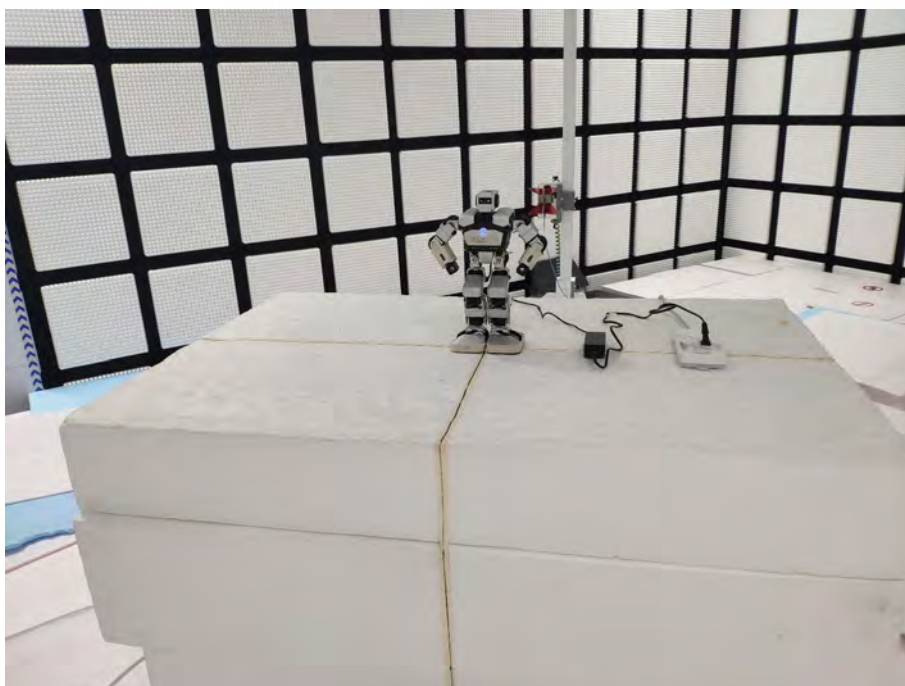
Test Model No.: ERHA101



**Radiated spurious emission Test Setup-1(Below 30MHz)**



**Radiated spurious emission Test Setup-1(Below 1GHz)**



**Radiated spurious emission Test Setup-2(Above 1GHz)**



**Conducted Emissions Test Setup**

## PHOTOGRAPHS OF EUT Constructional Details

Refer to Report No.EED32L00193801 for EUT external and internal photos.

\*\*\* End of Report \*\*\*

The test report is effective only with both signature and specialized stamp, The result(s) shown in this report refer only to the sample(s) tested. Without written approval of CTI, this report can't be reproduced except in full.