# Report on the RF Testing of:

## KYOCERA Corporation
## Mobile Phone, Model: EB1207
## FCC ID: JOYEB1207

## In accordance with FCC Part15 Subpart C

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## COMMERCIAL-IN-CONFIDENCE

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|---|---|---|---|
| | | | |
| NAME | JOB TITLE | RESPONSIBLE FOR | ISSUE DATE |
| Hiroaki Suzuki | RF Deputy Manager of EMC Lab | Approved Signatory | 2024.08.09 |

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EXECUTIVE SUMMARY – Result: Complied
A sample of this product was tested and the result above was confirmed in accordance with FCC Part15 Subpart C.

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# 1 Summary of Test

## 1.1 Modification history of the test report

| Document Number | Modification History | Issue Date |
|---|---|---|
| JPD-TR-24131-0 | First Issue | Refer to the cover page |

## 1.2 Standards

CFR47 FCC Part 15 Subpart C

## 1.3 Test methods

ANSI C63.10-2013
KDB 558074 D01 15.247 Meas Guidance v05r02

## 1.4 Deviation from standards

None

## 1.5 List of applied test(s) of the EUT

| Test item section | Test item | Condition | Result | Remark |
|---|---|---|---|---|
| 15.247(a)(2) | DTS Bandwidth / Occupied Bandwidth (99%) | Conducted | PASS | * |
| 15.247(b)(3) | Maximum conducted (average) output power | Conducted | PASS | * |
| 15.247(d) | Band Edge Compliance of RF Conducted Emissions | Conducted | PASS | * |
| 15.247(d)<br>15.205<br>15.209 | Spurious Emissions | Conducted | PASS | * |
| | | Radiated | PASS | * |
| 15.247(d)<br>15.205<br>15.209 | Restricted Bands of Operation | Radiated | PASS | * |
| 15.247(e) | Transmitter Power Spectral Density | Conducted | PASS | * |
| 15.207 | AC Power Line Conducted Emissions | Conducted | PASS | * |

## 1.6 Test information

The only difference with EB1190EM (FCC ID: JOYPC9699) is that EB1207 does not have a Cellular component.
Therefore, this measurement data is the same as that of EB1190EM.
*: Spot check tests were performed. Only the worst case was tested.

## 1.7 Test set up

Table-top

## 1.8 Test period

1-May-2024 - 29-June-2024, 24-July-2024, 6-August-2024 - 9-August-2024

# 2 Equipment Under Test

All information in this chapter was provided by the applicant.

## 2.1 EUT information

| | |
|---|---|
| Applicant | KYOCERA Corporation<br>Yokohama Office 2-1-1 Kagahara, Tsuzuki-ku Yokohama-shi, Kanagawa, Japan<br>Phone: +81-45-943-6253 Fax: +81-45-943-6314 |
| Equipment Under Test (EUT) | Mobile Phone |
| Model number | EB1190EM, EB1207 |
| Serial number | 353343640002991, 353343640002918, 353343640002926, SRA3, SAR2, Radiated added |
| Trade name | Kyocera |
| Number of sample(s) | 6 |
| EUT condition | Pre-Production |
| Power rating | Battery: DC 3.87 V |
| Size | (W) 73.0 mm × (D) 157.0 mm × (H) 11.43 mm |
| Environment | Indoor and Outdoor use |
| Terminal limitation | -20 ˚C to 60 ˚C |
| Hardware Version | DMT1 |
| Software Version | 0.151BX.0025.a |
| Firmware Version | Not applicable |
| RF Specification | |
| Protocol | IEEE802.11b, IEEE802.11g, IEEE802.11n (HT20), IEEE802.11ac (VHT20) |
| Frequency range | IEEE802.11b /11g /11n (HT20) /11ac (VHT20):<br>2412 MHz-2462 MHz |
| Number of RF Channels | 11 Channels |
| Modulation type | IEEE802.11b: DSSS (DBPSK, DQPSK, CCK)<br>IEEE802.11g / 11n (HT20) / 11ac (VHT20): OFDM (BPSK, QPSK, 16QAM, 64QAM, 256QAM) |
| Data rate | IEEE802.11b: 1, 2, 5.5, 11Mbps<br>IEEE802.11g: 6, 9, 12, 18, 24, 36, 48, 54Mbps<br>IEEE802.11n (HT20 LGI): 6.5, 13, 19.5, 26, 39, 52, 58.5, 65Mbps<br>IEEE802.11n (HT20 SGI): 7.2, 14.4, 21.7, 28.9, 43.3, 57.8, 65, 72.2Mbps<br>IEEE802.11ac (VHT20 LGI): 6.5, 13, 19.5, 26, 39, 52, 58.5, 65, 78Mbps<br>IEEE802.11ac (VHT20 SGI): 7.2, 14.4, 21.7, 28.9, 43.3, 57.8, 65, 72.2, 86.6Mbps |

| | |
|---|---|
| Channel separation | 5 MHz |
| Conducted power | 37.411 mW (IEEE802.11b)<br>196.336 mW (IEEE802.11g)<br>220.8 mW (IEEE802.11n: HT20)<br>216.272 mW (IEEE802.11ac: VHT20) |
| Antenna type | Internal antenna |
| Antenna gain | 0.2 dBi |

## 2.2 Modification to the EUT

The table below details modifications made to the EUT during the test project.

| Modification State | Description of Modification | Modification fitted by | Date of Modification |
|---|---|---|---|
| Model: EB1190EM, EB1207 Serial Number: 353343640002991, 353343640002918, 353343640002926, SAR3, SAR2, Radiated added | | | |
| 0 | As supplied by the applicant | Not Applicable | Not Applicable |

## 2.3 Variation of family model(s)

### 2.3.1 List of family model(s)

Not applicable

### 2.3.2 Reason for selection of EUT

Not applicable

## 2.4 Operating channels and frequencies

| Channel | Frequency [MHz] |
|---|---|
| 1 | 2412 |
| 2 | 2417 |
| 3 | 2422 |
| 4 | 2427 |
| 5 | 2432 |
| 6 | 2437 |
| 7 | 2442 |
| 8 | 2447 |
| 9 | 2452 |
| 10 | 2457 |
| 11 | 2462 |

## 2.5 Description of test mode

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

| Tested Channel [11b, 11g, 11n(HT20) , 11ac(VHT20)] | Frequency [MHz] |
|---|---|
| Low | 2412 |
| Middle | 2437 |
| High | 2462 |

The pre-test has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates.

| Tested Channel | Modulation Type | Data Rate |
|---|---|---|
| Low, Middle, High | IEEE802.11b: DSSS | 1Mbps |
| Low, Middle, High | IEEE802.11g: OFDM | 6Mbps |
| Low, Middle, High | IEEE802.11n (HT20 LGI): OFDM | MCS0 (6.5Mbps) |
| Low, Middle, High | IEEE802.11ac (VHT20): OFDM | MCS0 (6.5Mbps) |

The field strength of spurious emissions was measured at each position of all three axis X, Y and Z to compare the level, and the maximum noise.
The worst emission was found in X-axis and the worst case recorded.
Pre-scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports.

## 2.6 Operating flow

**- Tx mode**

i) Test program setup to the Software
ii) Select a Test mode
[IEEE802.11b, IEEE802.11g, IEEE802.11n (HT20)], IEEE802.11ac (VHT20)]
Operating frequency: Channel Low: 2412MHz, Channel Middle: 2437MHz, Channel High: 2462MHz
iii) Start test mode

**- Rx mode**

i) Test program setup to the Software
ii) Select a Test mode
[IEEE802.11b, IEEE802.11g, IEEE802.11n (HT20)], IEEE802.11ac (VHT20)]
Operating frequency: Channel Low: 2412MHz, Channel Middle: 2437MHz, Channel High: 2462MHz
iii) Start test mode

# 3 Configuration of Equipment

Numbers assigned to equipment on the diagram in “3.3 System configuration” correspond to the list in “3.1 Equipment used” and “3.2 Cable(s) used”.
This test configuration is based on the manufacture’s instruction.
Cabling and setup(s) were taken into consideration and test data was taken under worse case condition.

## 3.1 Equipment used

| No. | Equipment | Company | Model No. | Serial No. | FCC ID/DoC | Comment |
|---|---|---|---|---|---|---|
| 1 | Mobile Phone | KYOCERA | EB1190EM | 353343640002991, 353343640002918, 353343640002926 | JOYPC9699 | EUT |
| | Mobile Phone | KYOCERA | EB1207 | SAR3, SAR2, Radiated added | JOYEB1207 | EUT (Tested) |
| 2 | AC Adapter | KDDI | 0602PQA | N/A | N/A | * |

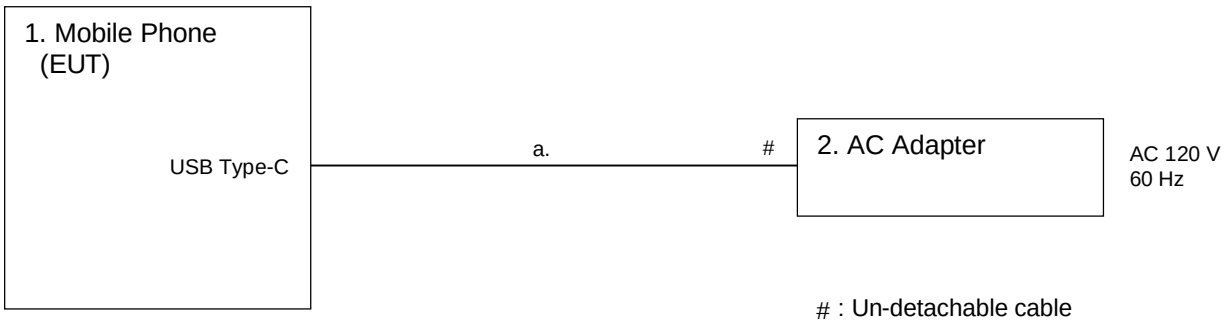
*:AC power line Conducted Emission Test.

## 3.2 Cable(s) used

| No. | Equipment | Length[m] | Shield | Connector | Comment |
|---|---|---|---|---|---|
| a | USB cable (for AC Adapter) | 1.5 | No | Plastic | * |

*:AC power line Conducted Emission Test.

## 3.3 System configuration



# 4 Test Result

## 4.1 DTS Bandwidth / Occupied Bandwidth (99%)

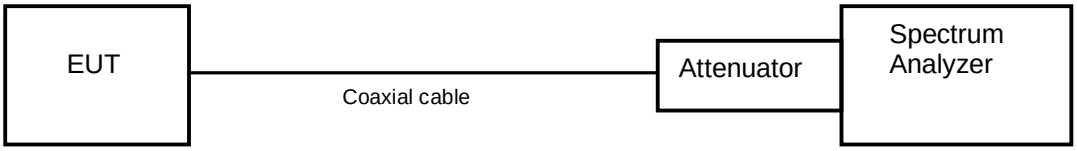
### 4.1.1 Measurement procedure

**[FCC 15.247(a)(2), KDB 558074 D01 v05r02, Section 8.2]**

The bandwidth at 6dB down from the highest in band spectral density is measured with a spectrum analyzer connected to the antenna terminal, while EUT is operating in transmission mode at the appropriate center frequency.

The spectrum analyzer is set to;
a) RBW = 100kHz.
b) VBW ≥ 3 x RBW.
c) Sweep time = auto-couple.
d) Detector = peak.
e) Trace mode = max hold.

- Test configuration




### 4.1.2 Limit

The minimum permissible 6 dB bandwidth is 500 kHz.

### 4.1.3 Measurement result

Date : 1-May-2024
Temperature : 21.3 [˚C]
Humidity : 45.3 [%]
Test place : Shielded room No.4
Test engineer : Kazunori Saito

Date : 26-June-2024
Temperature : 24.5 [˚C]
Humidity : 50.8 [%]
Test place : Shielded room No.4
Test engineer : Kazunori Saito

Date : 6-August-2024
Temperature : 23.0 [˚C]
Humidity : 54.3 [%]
Test place : Shielded room No.4
Test engineer : Kazunori Saito

**EB1190EM**

| Channel | DTS Bandwidth [MHz] | | | |
|---|---|---|---|---|
| | IEEE802.11b | IEEE802.11g | IEEE802.11n (HT20) | IEEE802.11ac (VHT20) |
| Low | 8.553 | 15.376 | 15.943 | 15.964 |
| Middle | 8.095 | 15.317 | 15.172 | 15.160 |
| High | 8.068 | 15.153 | 15.151 | 15.484 |

**EB1207**

| Channel | DTS Bandwidth [MHz] | | | |
|---|---|---|---|---|
| | IEEE802.11b | IEEE802.11g | IEEE802.11n (HT20) | IEEE802.11ac (VHT20) |
| Low | - | - | 15.499 | - |
| Middle | - | - | 15.162 | - |
| High | - | - | 15.153 | - |

**EB1190EM**

| Channel | Occupied Bandwidth (99%) [MHz] | | | |
|---|---|---|---|---|
| | IEEE802.11b | IEEE802.11g | IEEE802.11n (HT20) | IEEE802.11ac (VHT20) |
| Low | 12.820 | 16.377 | 17.544 | 17.538 |
| Middle | 12.805 | 16.351 | 17.531 | 17.527 |
| High | 12.484 | 16.324 | 17.481 | 17.500 |

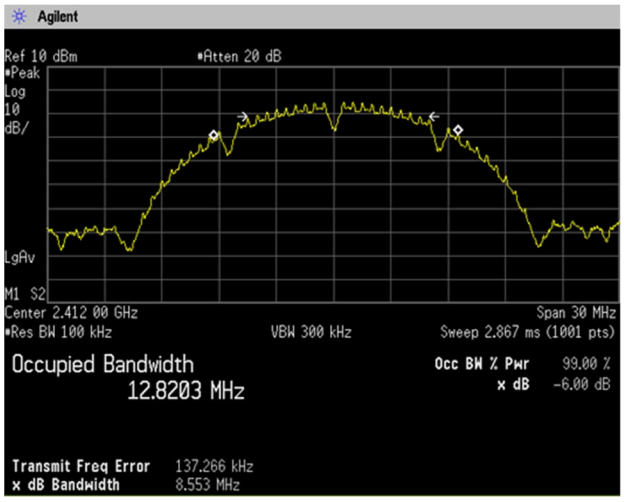
**EB1207**

| Channel | Occupied Bandwidth (99%) [MHz] | | | |
|---|---|---|---|---|
| | IEEE802.11b | IEEE802.11g | IEEE802.11n (HT20) | IEEE802.11ac (VHT20) |
| Low | - | - | 17.536 | - |
| Middle | - | - | 17.549 | - |
| High | - | - | 17.499 | - |

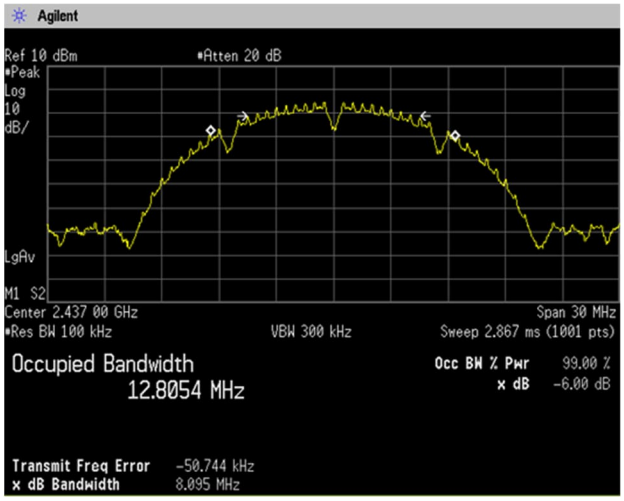
### 4.1.4 Trace data

**EB1190EM [IEEE802.11b]**

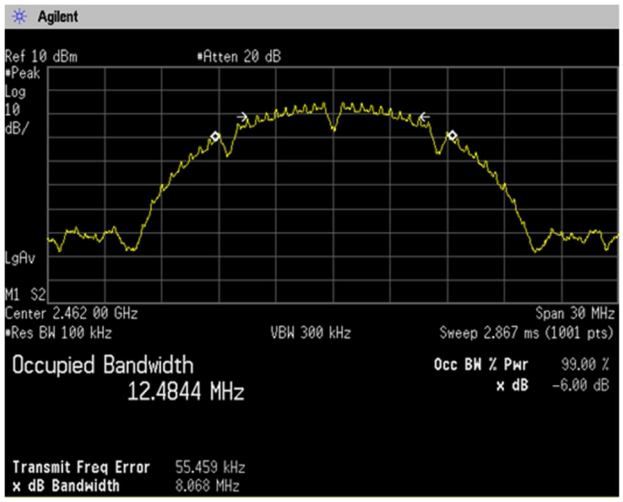
**Channel Low**




**Channel Middle**

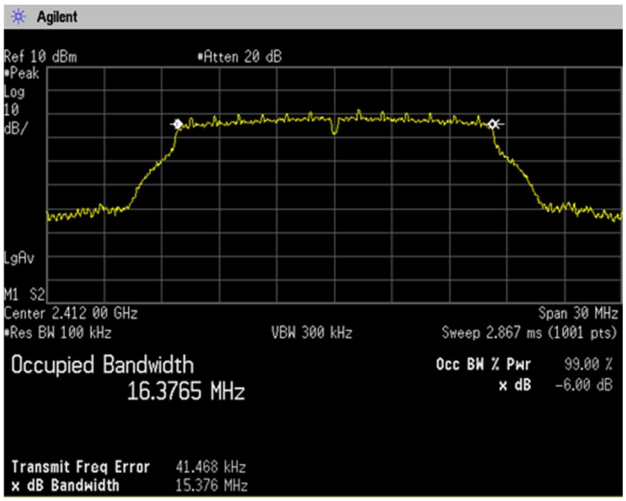



**Channel High**

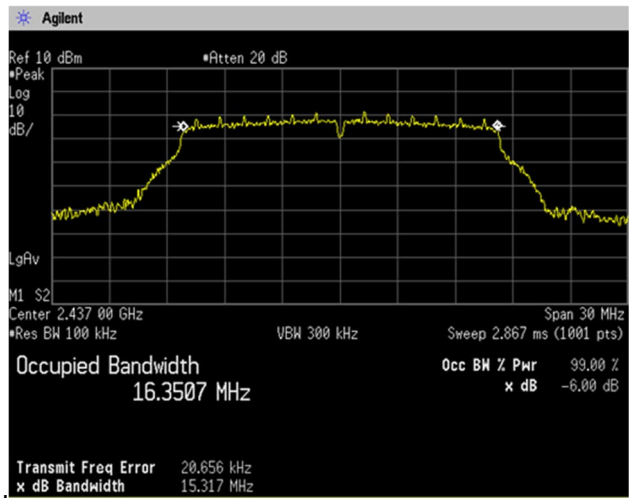


**EB1190EM [IEEE802.11g]**

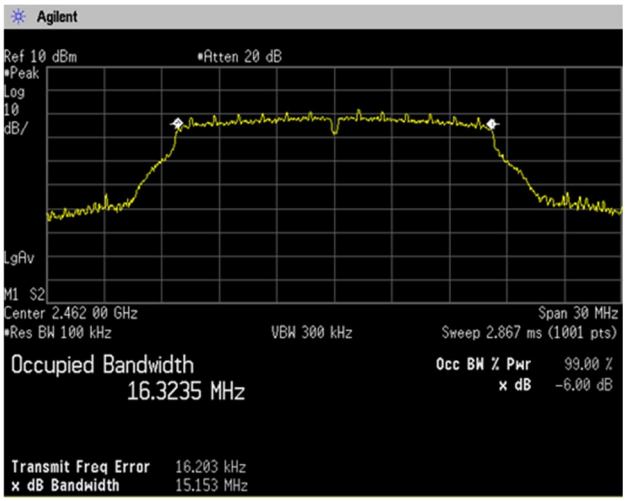
**Channel Low**




**Channel Middle**

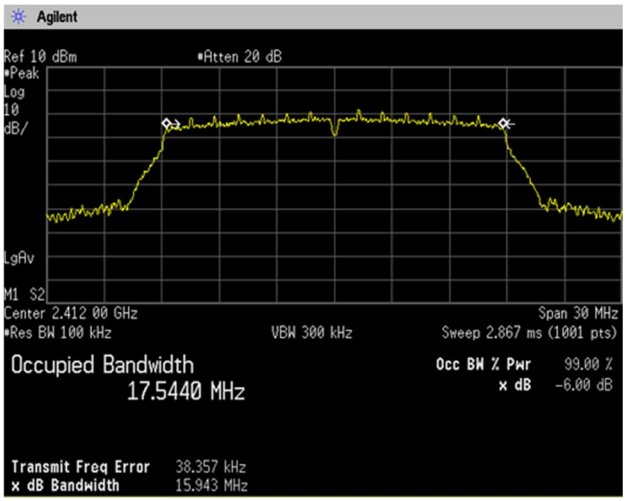



**Channel High**

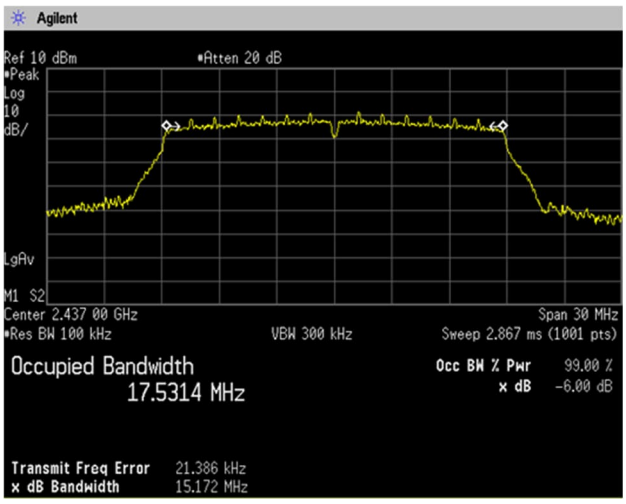


**EB1190EM [IEEE802.11n (HT20)]**

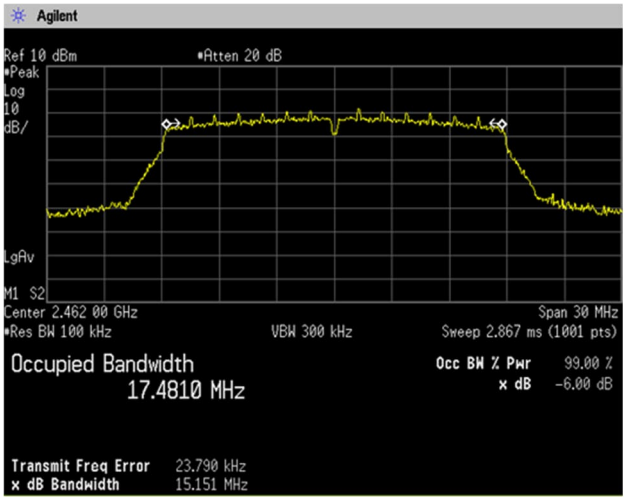
**Channel Low**




**Channel Middle**

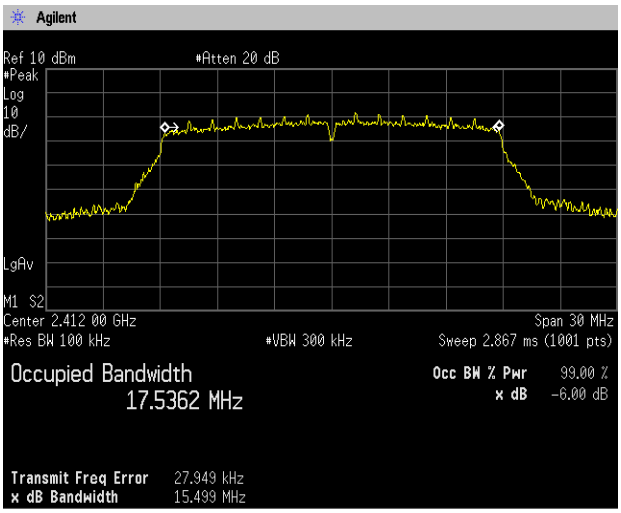



**Channel High**

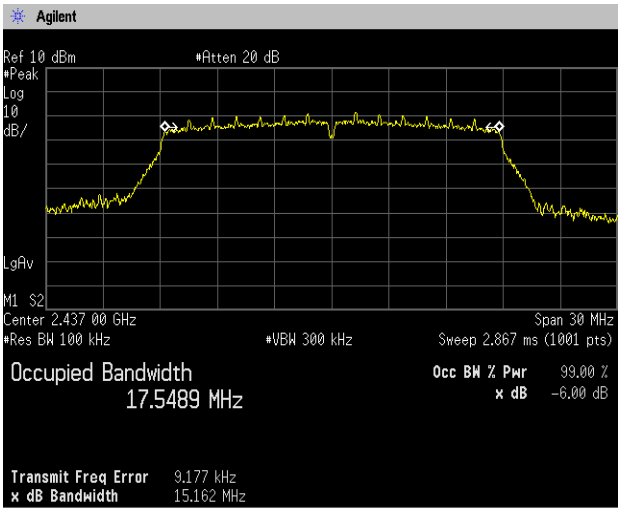


**EB1207 [IEEE802.11n (HT20)]**

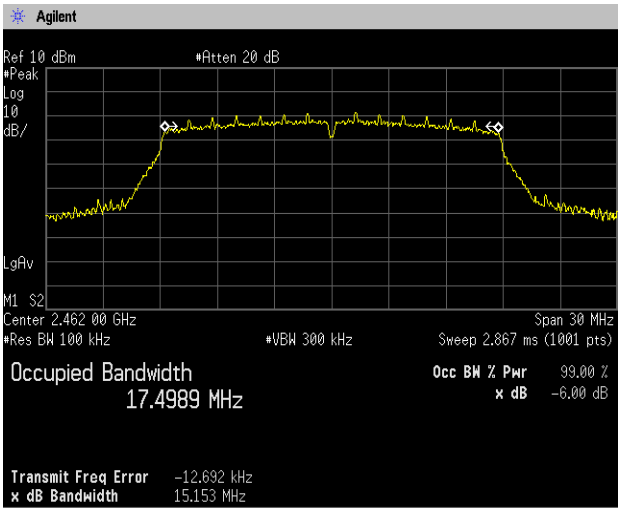
**Channel Low**




**Channel Middle**

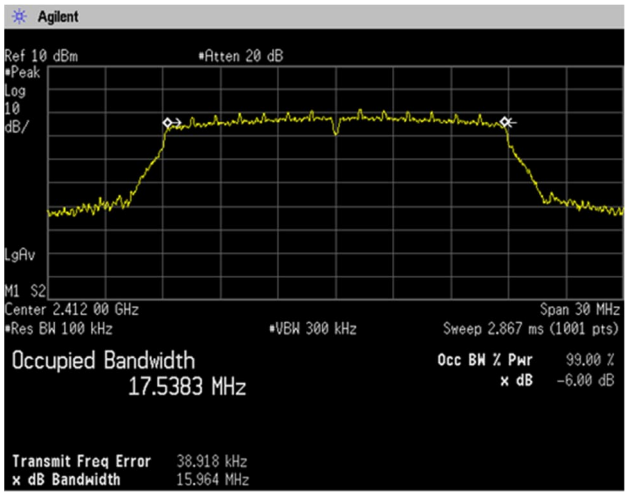



**Channel High**

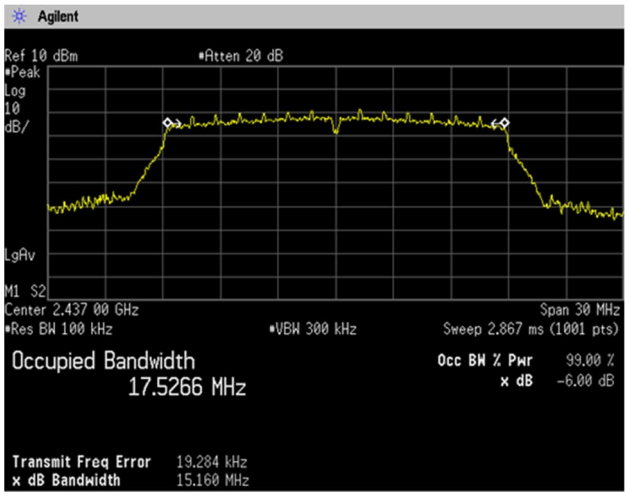


**EB1190EM [IEEE802.11ac (VHT20)]**

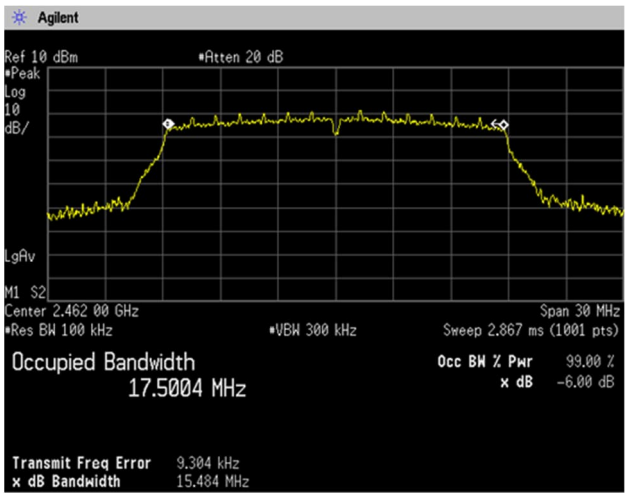
**Channel Low**




**Channel Middle**




**Channel High**



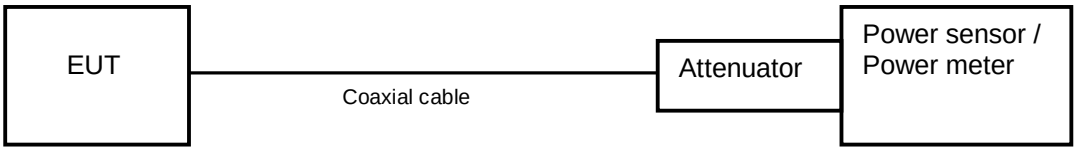
## 4.2 Maximum Conducted Output Power

### 4.2.1 Measurement procedure

**[FCC 15.247(b)(3), KDB 558074 D01 v05r02, Section 8.3.1.3]**

The peak power is measured with a power sensor connected to the antenna terminal, while EUT is operating in transmission mode at the appropriate center frequency.

- Test configuration




### 4.2.2 Limit

1 W (1000 mW) or less

### 4.2.3 Measurement result

| | | | | | |
|---|---|---|---|---|---|
| Date | : | 1-May-2024 | | | |
| Temperature | : | 21.3 [˚C] | | | |
| Humidity | : | 45.3 [%] | Test engineer | : | |
| Test place | : | Shielded room No.4 | | | Kazunori Saito |
| Date | : | 26-June-2024 | | | |
| Temperature | : | 24.5 [˚C] | | | |
| Humidity | : | 50.8 [%] | Test engineer | : | |
| Test place | : | Shielded room No.4 | | | Kazunori Saito |
| Date | : | 24-July-2024 | | | |
| Temperature | : | 23.1 [˚C] | | | |
| Humidity | : | 56.9 [%] | Test engineer | : | |
| Test place | : | Shielded room No.3 | | | Kazunori Saito |

**EB1190EM**
**[IEEE802.11b]**
**Battery Full**

| Channel | Center Frequency (MHz) | Reading (dBm) | Factor (dB) | Level (dBm) | Peak Output Power (mW) | Limit (mW) | Result |
|---|---|---|---|---|---|---|---|
| Low | 2412 | 5.12 | 10.52 | 15.64 | 36.644 | ≦1000 | PASS |
| Middle | 2437 | 5.00 | 10.52 | 15.52 | 35.645 | ≦1000 | PASS |
| High | 2462 | 5.21 | 10.52 | 15.73 | 37.411 | ≦1000 | PASS |

**[IEEE802.11g]**
**Battery Full**

| Channel | Center Frequency (MHz) | Reading (dBm) | Factor (dB) | Level (dBm) | Peak Output Power (mW) | Limit (mW) | Result |
|---|---|---|---|---|---|---|---|
| Low | 2412 | 12.09 | 10.52 | 22.61 | 182.390 | ≦1000 | PASS |
| Middle | 2437 | 12.41 | 10.52 | 22.93 | 196.336 | ≦1000 | PASS |
| High | 2462 | 12.18 | 10.52 | 22.70 | 186.209 | ≦1000 | PASS |

Calculation;
Reading (dBm) + Factor (dB) = Level (dBm)
10logP = Level (dBm)
$P = 10^{(\text{Maximum Peak Output Power} / 10)}$ (mW)

**[IEEE802.11n (HT20)]**
**Battery Full**

| Channel | Center Frequency (MHz) | Reading (dBm) | Factor (dB) | Level (dBm) | Peak Output Power (mW) | Limit (mW) | Result |
|---|---|---|---|---|---|---|---|
| Low | 2412 | 12.88 | 10.52 | 23.40 | 218.776 | ≦1000 | PASS |
| Middle | 2437 | 12.71 | 10.52 | 23.23 | 210.378 | ≦1000 | PASS |
| High | 2462 | 12.50 | 10.52 | 23.02 | 200.447 | ≦1000 | PASS |

**EB1207**
**[IEEE802.11n (HT20)]**
**Battery Full**

| Channel | Center Frequency (MHz) | Reading (dBm) | Factor (dB) | Level (dBm) | Peak Output Power (mW) | Limit (mW) | Result |
|---|---|---|---|---|---|---|---|
| Low | 2412 | 12.92 | 10.52 | 23.44 | 220.800 | ≦1000 | PASS |
| Middle | 2437 | 12.50 | 10.52 | 23.02 | 200.447 | ≦1000 | PASS |
| High | 2462 | 12.32 | 10.52 | 22.84 | 192.309 | ≦1000 | PASS |

**[IEEE802.11n (HT20)]**

| Channel | EB1190EM Level (dBm) | EB1207 Level (dBm) | Difference value (dBm) | Result Within ±3 dBm |
|---|---|---|---|---|
| Low | 23.40 | 23.44 | -0.04 | PASS |
| Middle | 23.23 | 23.02 | 0.21 | PASS |
| High | 23.02 | 22.84 | 0.18 | PASS |

**[IEEE802.11ac (VHT20)]**
**Battery Full**

| Channel | Center Frequency (MHz) | Reading (dBm) | Factor (dB) | Level (dBm) | Peak Output Power (mW) | Limit (mW) | Result |
|---|---|---|---|---|---|---|---|
| Low | 2412 | 12.45 | 10.52 | 22.97 | 198.153 | ≦1000 | PASS |
| Middle | 2437 | 12.83 | 10.52 | 23.35 | 216.272 | ≦1000 | PASS |
| High | 2462 | 12.34 | 10.52 | 22.86 | 193.197 | ≦1000 | PASS |

Calculation;
Reading (dBm) + Factor (dB) = Level (dBm)
10logP = Level (dBm)
$P = 10^{(\text{Maximum Peak Output Power} / 10)}$ (mW)

## 4.3 Band Edge Compliance of RF Conducted Emissions

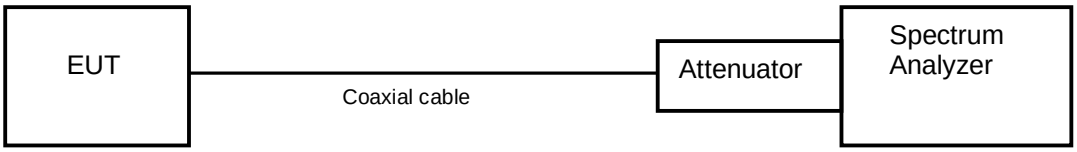
### 4.3.1 Measurement procedure

**[FCC 15.247(d), KDB 558074 D01 v05r02, Section 8.5]**

The Band Edge is measured with a spectrum analyzer connected to the antenna terminal, while EUT is operating in transmission mode at the appropriate center frequency.

The spectrum analyzer is set to;
a) Span = Arbitrary setting. (Setting suitable for measurement.)
b) RBW = 100kHz.
c) VBW ≥ 3 x RBW
d) Sweep time = auto-couple.
e) Detector = peak.
f) Trace mode = max hold.

- Test configuration




### 4.3.2 Limit

In any 100 kHz bandwidth outside the frequency band the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power.

### 4.3.3 Measurement result

Date : 1-May-2024
Temperature : 21.3 [˚C]
Humidity : 45.3 [%]
Test place : Shielded room No.4
Test engineer : Kazunori Saito

Date : 26-June-2024
Temperature : 24.5 [˚C]
Humidity : 50.8 [%]
Test place : Shielded room No.4
Test engineer : Kazunori Saito

Date : 6-August-2024
Temperature : 23.0 [˚C]
Humidity : 54.3 [%]
Test place : Shielded room No.4
Test engineer : Kazunori Saito

**EB1190EM [IEEE802.11b]**

| Channel | Frequency (MHz) | RF Power Level (dBm) | Band-edge Frequency (MHz) | Band-edge Level (dBm) | Difference Level (dBm) | Limit (dBm) | Result |
|---|---|---|---|---|---|---|---|
| Low | 2412 | -6.54 | 2399.36 | -58.47 | 51.93 | At least 20dB below from peak of RF | PASS |
| High | 2462 | -6.56 | 2487.02 | -67.89 | 61.33 | At least 20dB below from peak of RF | PASS |

**EB1190EM [IEEE802.11g]**

| Channel | Frequency (MHz) | RF Power Level (dBm) | Band-edge Frequency (MHz) | Band-edge Level (dBm) | Difference Level (dBm) | Limit (dBm) | Result |
|---|---|---|---|---|---|---|---|
| Low | 2412 | -9.45 | 2399.76 | -53.06 | 43.61 | At least 20dB below from peak of RF | PASS |
| High | 2462 | -9.62 | 2483.90 | -62.86 | 53.24 | At least 20dB below from peak of RF | PASS |

**EB1190EM [IEEE802.11n (HT20)]**

| Channel | Frequency (MHz) | RF Power Level (dBm) | Band-edge Frequency (MHz) | Band-edge Level (dBm) | Difference Level (dBm) | Limit (dBm) | Result |
|---|---|---|---|---|---|---|---|
| Low | 2412 | -9.62 | 2399.76 | -51.32 | 41.70 | At least 20dB below from peak of RF | PASS |
| High | 2462 | -9.59 | 2483.90 | -61.51 | 51.92 | At least 20dB below from peak of RF | PASS |

**EB1207 [IEEE802.11n (HT20)]**

| Channel | Frequency (MHz) | RF Power Level (dBm) | Band-edge Frequency (MHz) | Band-edge Level (dBm) | Difference Level (dBm) | Limit (dBm) | Result |
|---|---|---|---|---|---|---|---|
| Low | 2412 | -8.35 | 2399.76 | -47.55 | 39.20 | At least 20dB below from peak of RF | PASS |
| High | 2462 | -8.45 | 2483.82 | -59.54 | 51.09 | At least 20dB below from peak of RF | PASS |

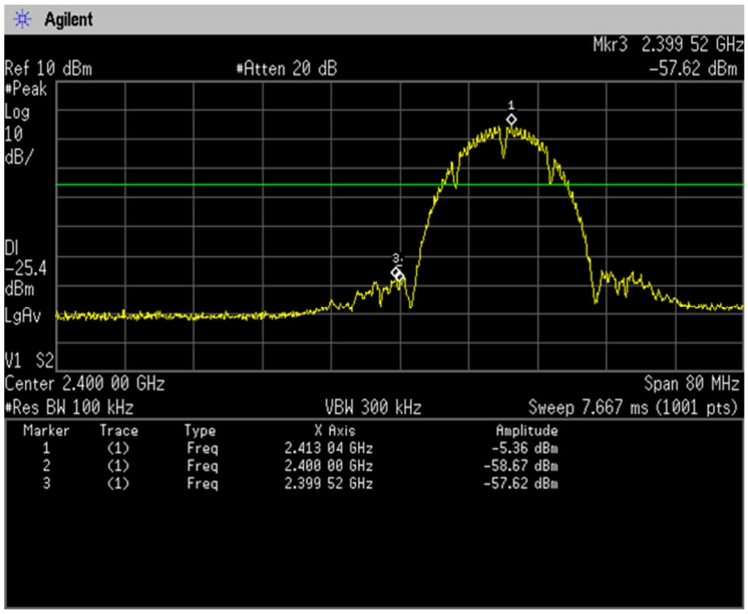
**EB1190EM [IEEE802.11ac (VHT20)]**

| Channel | Frequency (MHz) | RF Power Level (dBm) | Band-edge Frequency (MHz) | Band-edge Level (dBm) | Difference Level (dBm) | Limit (dBm) | Result |
|---|---|---|---|---|---|---|---|
| Low | 2412 | -8.63 | 2399.84 | -49.53 | 40.90 | At least 20dB below from peak of RF | PASS |
| High | 2462 | -8.40 | 2483.66 | -58.69 | 50.29 | At least 20dB below from peak of RF | PASS |

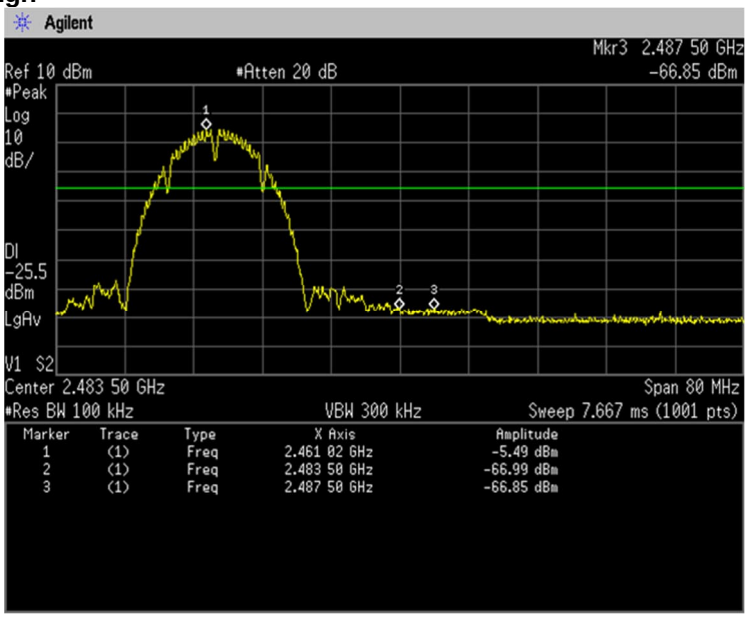
### 4.3.4 Trace data

**EB1190EM [IEEE802.11b]**

**Channel Low**

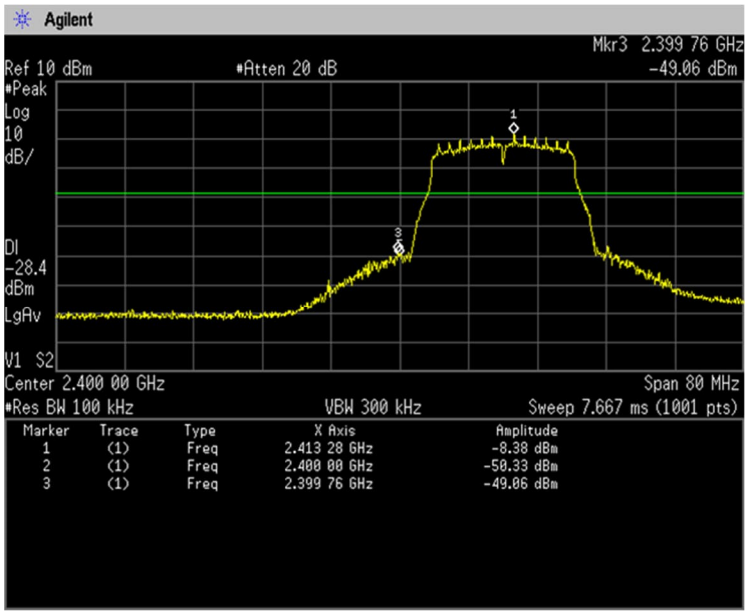



**Channel High**

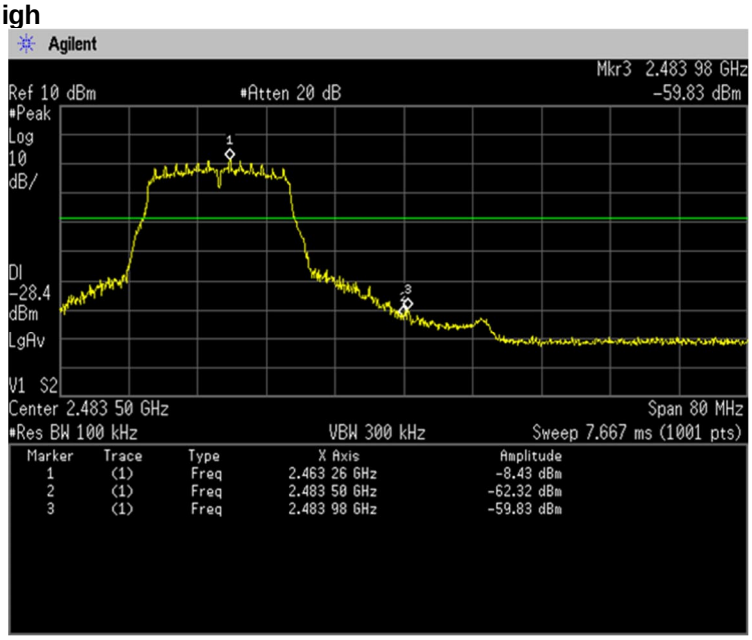


**EB1190EM [IEEE802.11g]**

**Channel Low**

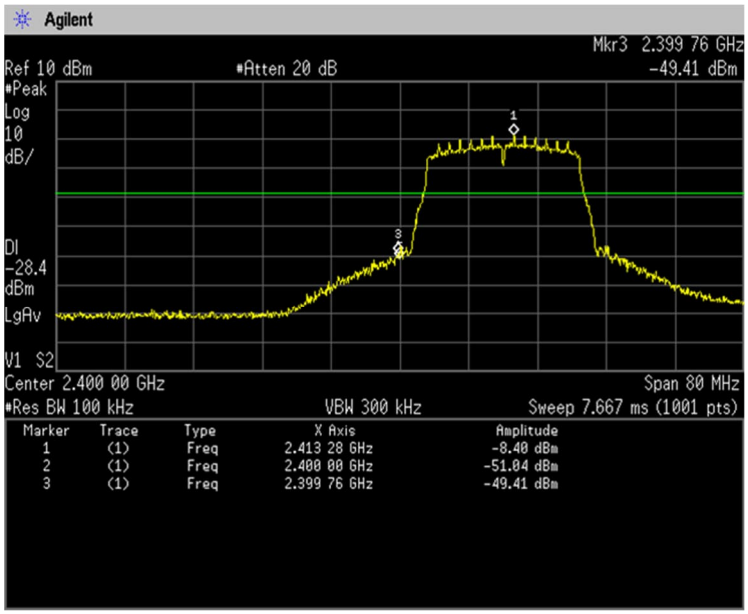



**Channel High**

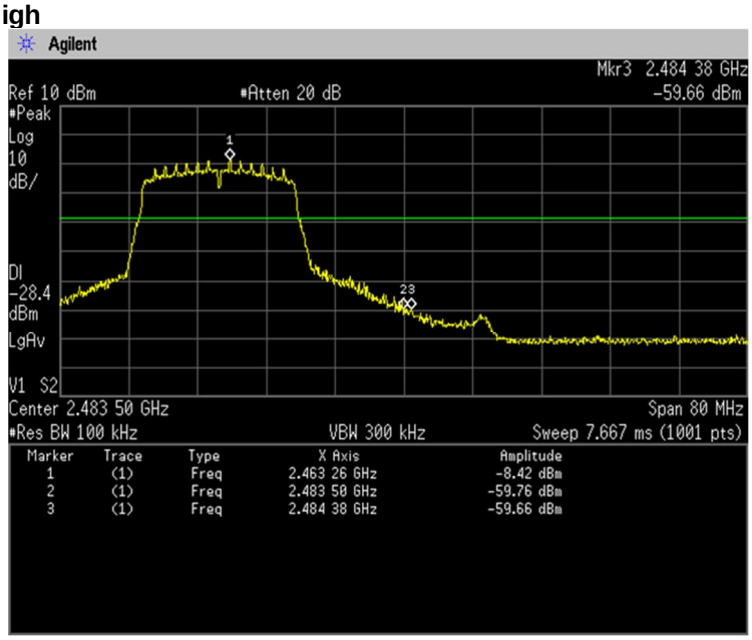


**EB1190EM [IEEE802.11n (HT20)]**

**Channel Low**

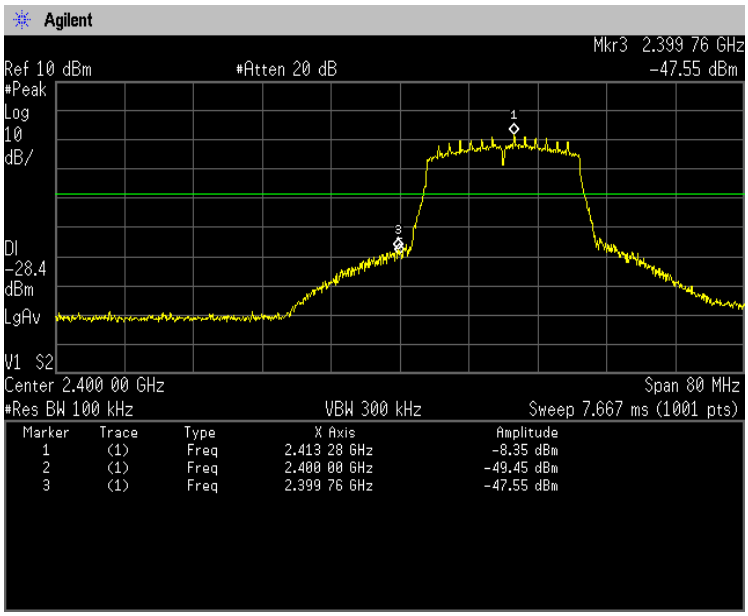



**Channel High**

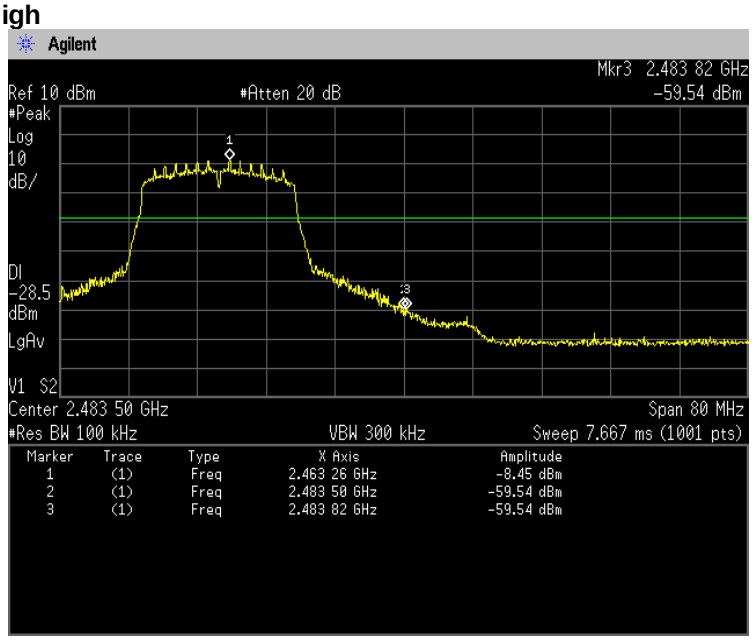


**EB1207 [IEEE802.11n (HT20)]**

**Channel Low**



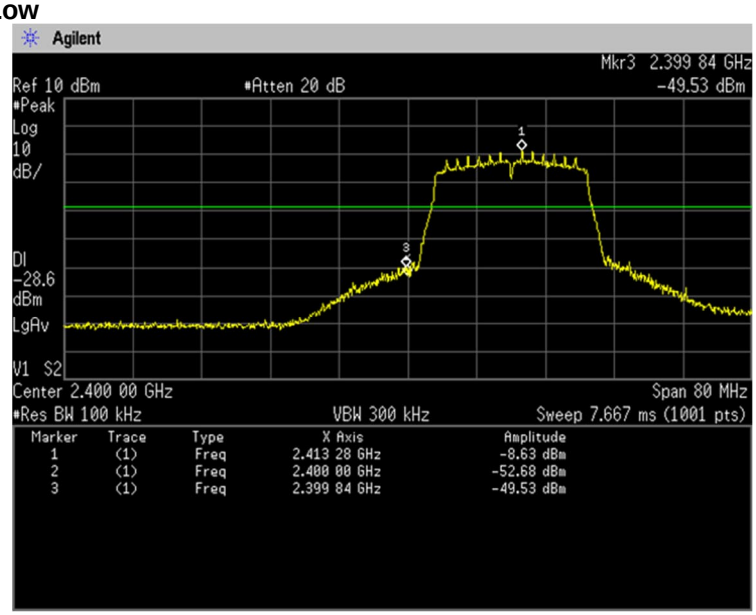

**Channel High**



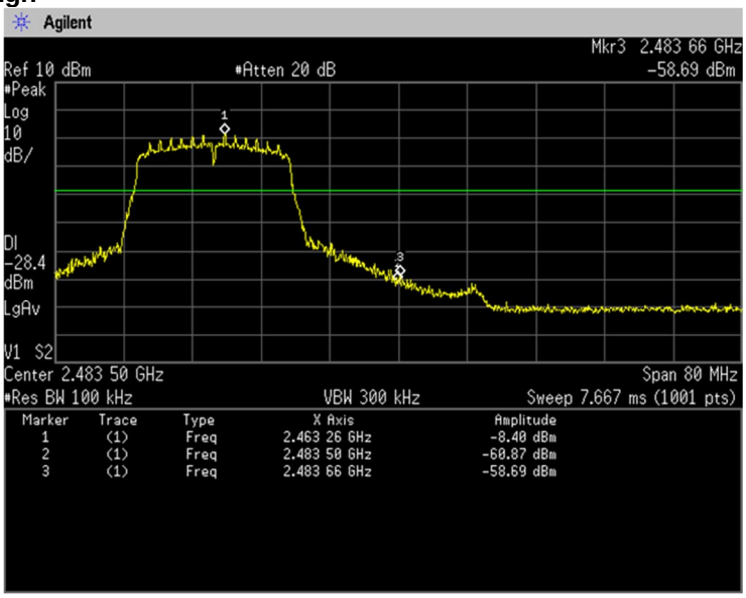

Comparison of the charts of EB1190EM and EB1207 showed that the difference in test results was less than 3 dB.

**EB1190EM [IEEE802.11ac (VHT20)]**

**Channel Low**




**Channel High**



## 4.4 Spurious emissions - Conducted -

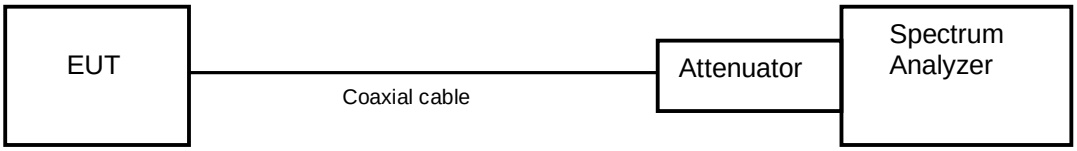
### 4.4.1 Measurement procedure

**[FCC 15.247(d), KDB 558074 D01 v05r02, Section 8.5]**

The spurious emissions (Conducted) are measured with a spectrum analyzer connected to the antenna terminal, while EUT is operating in transmission mode at the appropriate center frequency.

The spectrum analyzer is set to;
a) Span = wide enough to fully capture the emission being measured.
b) RBW = 100 kHz.
c) VBW ≥ RBW.
d) Sweep time = auto-couple.
e) Detector = peak.
f) Trace mode = max hold.

- Test configuration




### 4.4.2 Limit

In any 100 kHz bandwidth outside the frequency band the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power.

### 4.4.3 Measurement result

Date : 1-May-2024
Temperature : 21.3 [˚C]
Humidity : 45.3 [%] Test engineer :
Test place : Shielded room No.4 Kazunori Saito

Date : 26-June-2024
Temperature : 24.5 [˚C]
Humidity : 50.8 [%] Test engineer :
Test place : Shielded room No.4 Kazunori Saito

Date : 24-July-2024
Temperature : 23.1 [˚C]
Humidity : 56.9 [%] Test engineer :
Test place : Shielded room No.3 Kazunori Saito

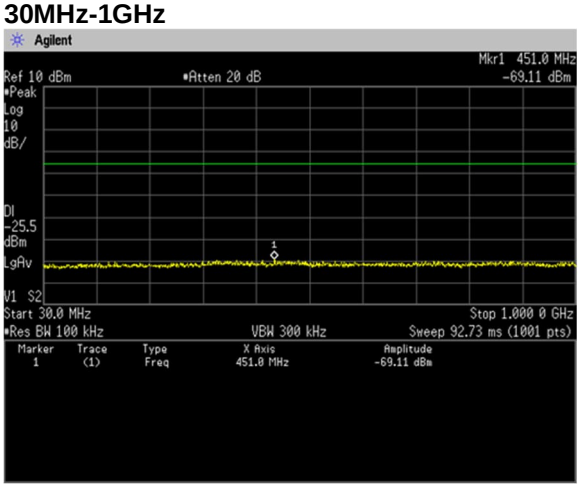
**[IEEE802.11b、IEEE802.11g、IEEE802.11n (HT20)、IEEE802.11ac (VHT20)]**

| Channel | Frequency [MHz] | Limit [dB] | Results Chart | Result |
|---|---|---|---|---|
| Low | 2412 | At least 20dB below from peak of RF | See the trace Data | PASS |
| Middle | 2437 | At least 20dB below from peak of RF | See the trace Data | PASS |
| High | 2462 | At least 20dB below from peak of RF | See the trace Data | PASS |

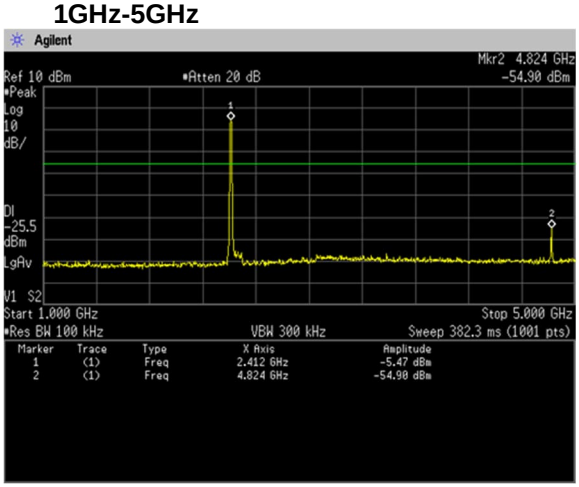
### 4.4.4 Trace data

**EB1190EM**
**[IEEE802.11b]**
**Channel Low**

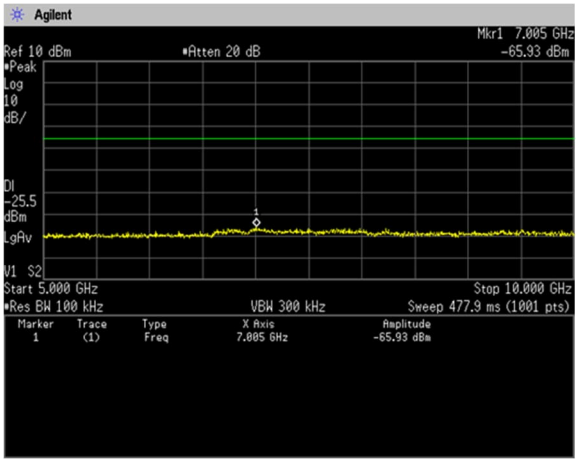
**30MHz-1GHz**



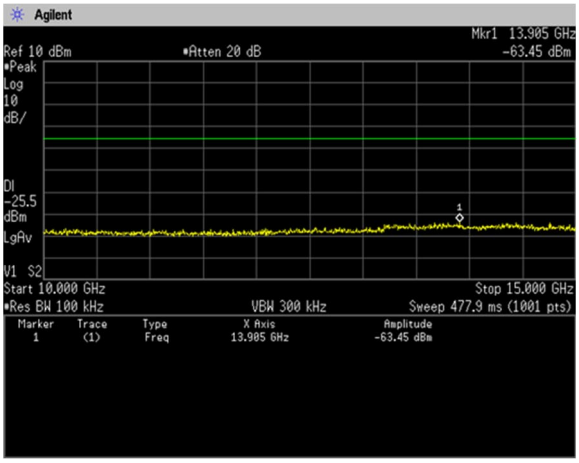

**1GHz-5GHz**



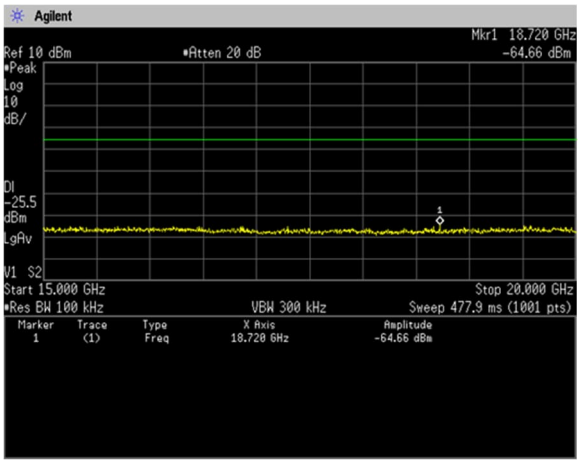

**5GHz-10GHz**



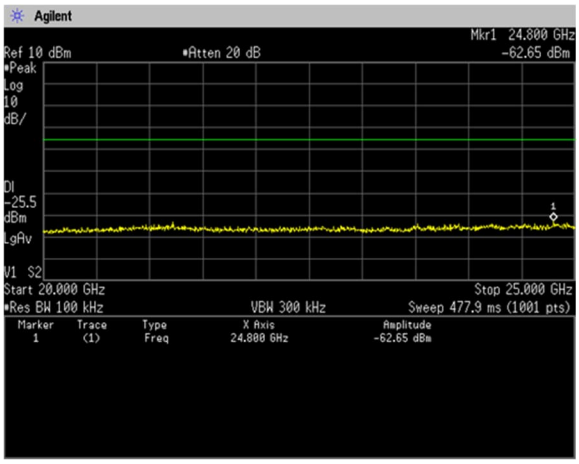

**10GHz-15GHz**




**15GHz-20GHz**

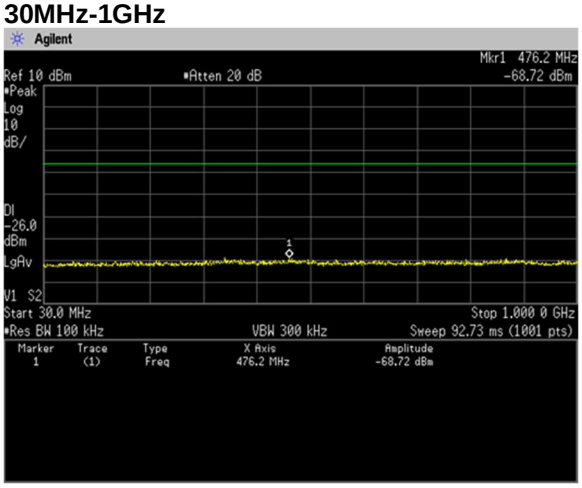



**20GHz-25GHz**

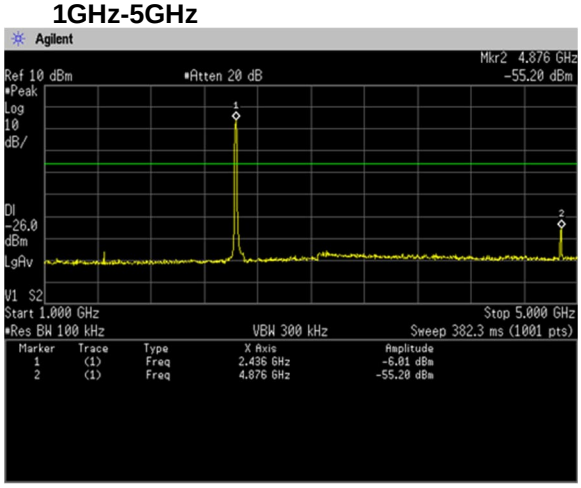


**Channel Middle**

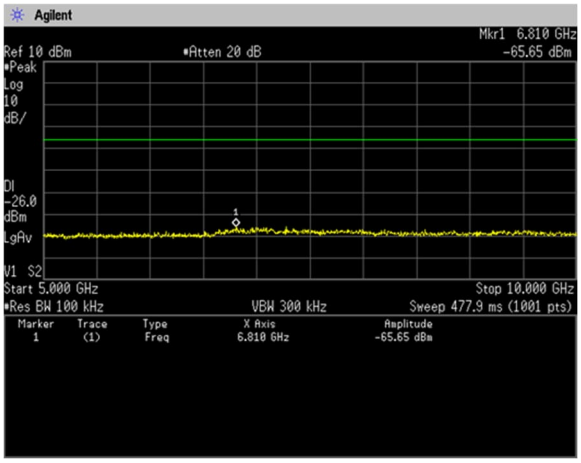
**30MHz-1GHz**



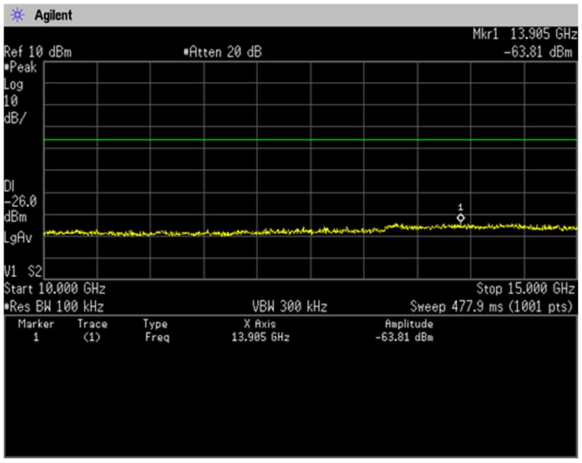

**1GHz-5GHz**



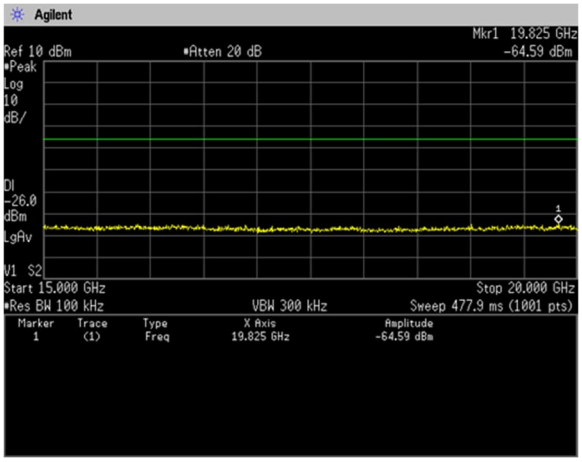

**5GHz-10GHz**



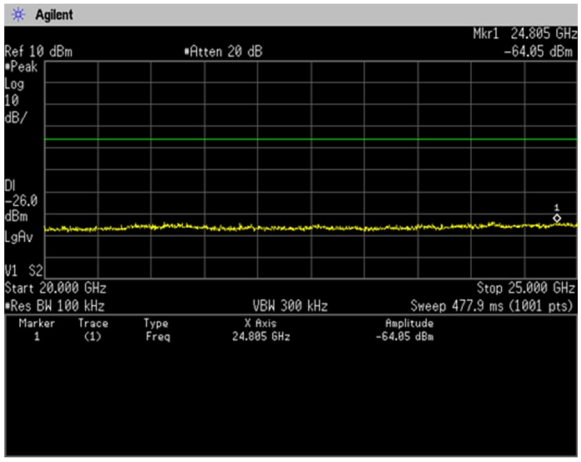

**10GHz-15GHz**




**15GHz-20GHz**

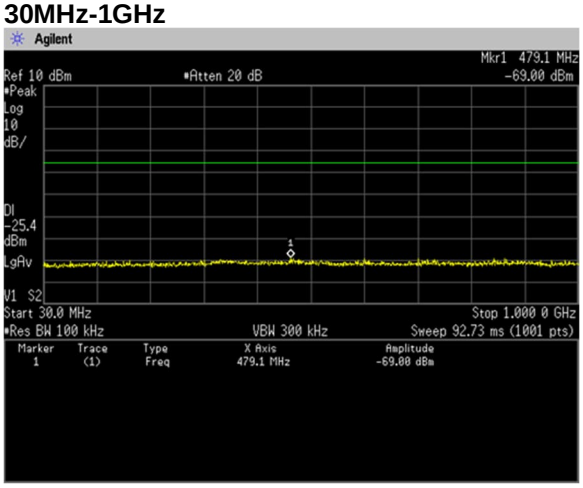



**20GHz-25GHz**

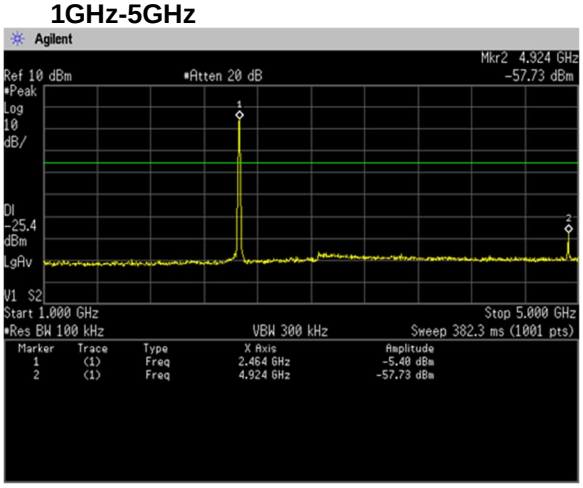


**Channel High**

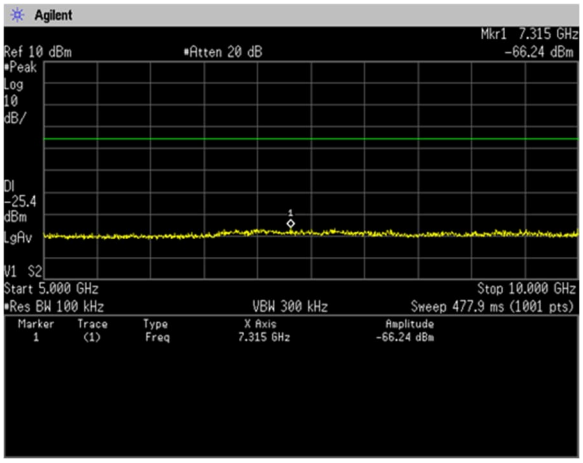
**30MHz-1GHz**



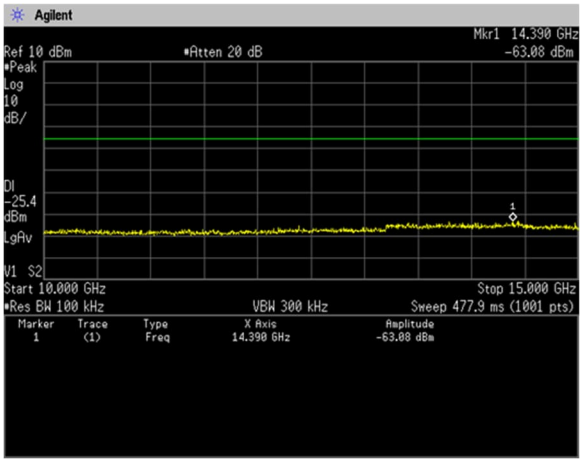

**1GHz-5GHz**



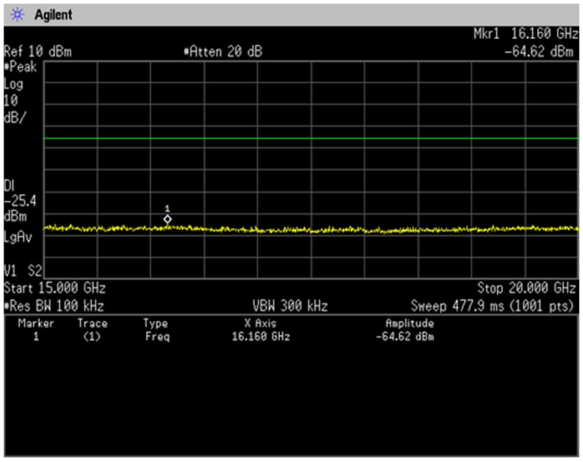

**5GHz-10GHz**



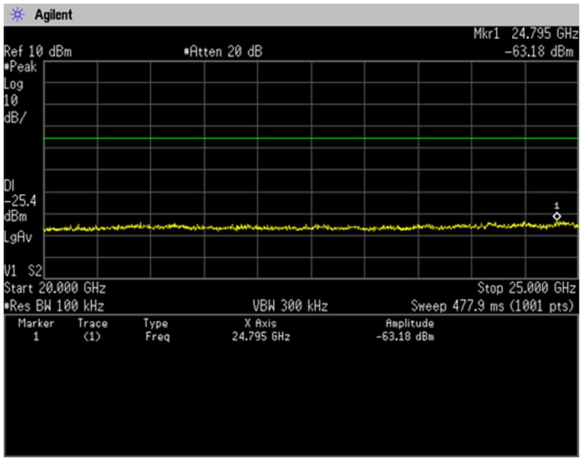

**10GHz-15GHz**




**15GHz-20GHz**

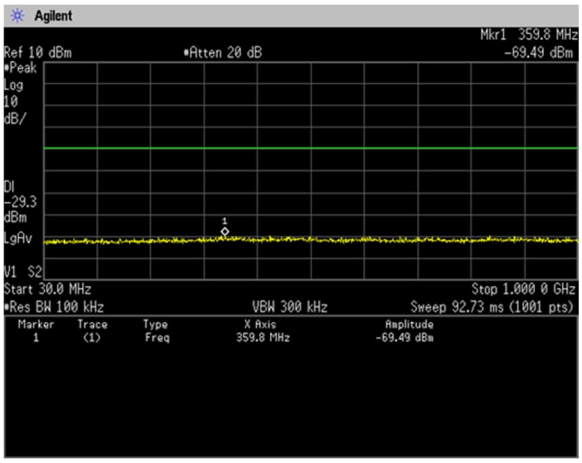



**20GHz-25GHz**

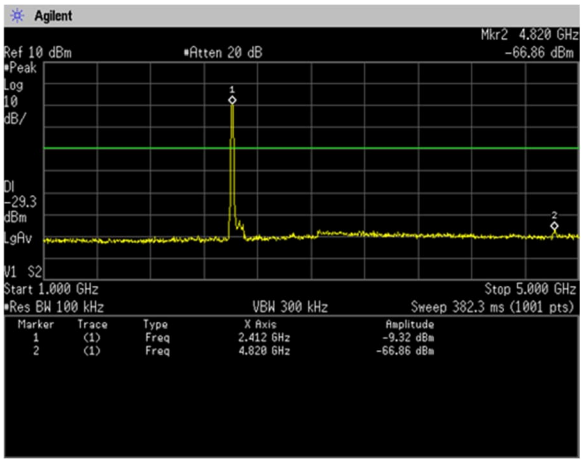


**EB1190EM**
**[IEEE802.11g]**
**Channel Low**

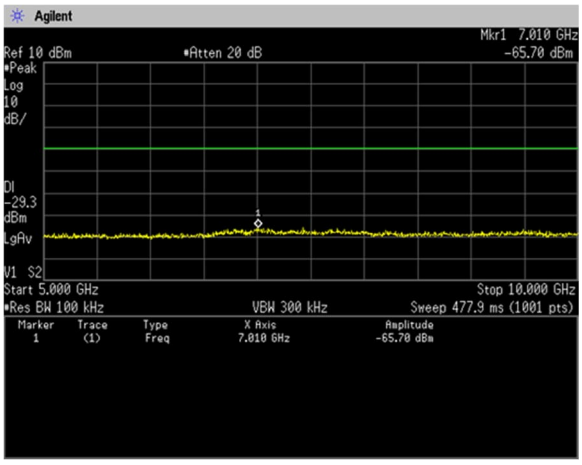
**30MHz-1GHz**



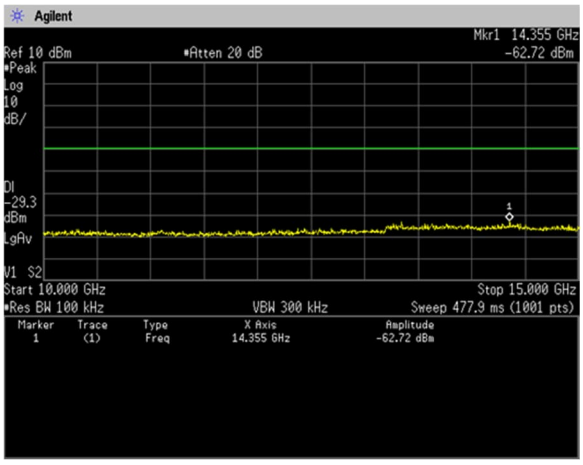

**1GHz-5GHz**



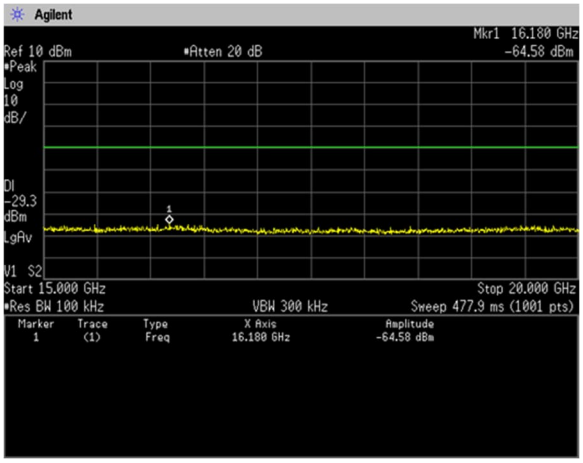

**5GHz-10GHz**



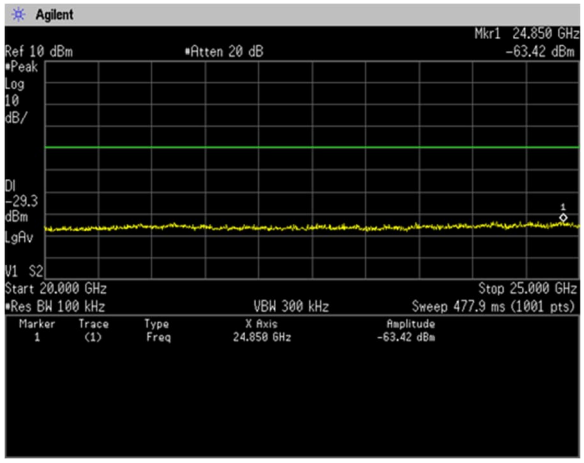

**10GHz-15GHz**




**15GHz-20GHz**

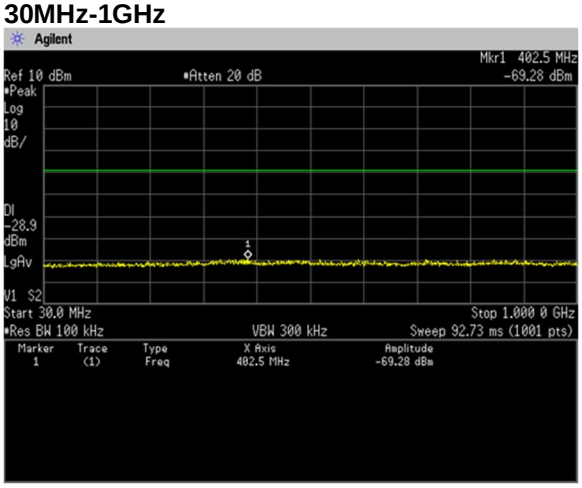



**20GHz-25GHz**

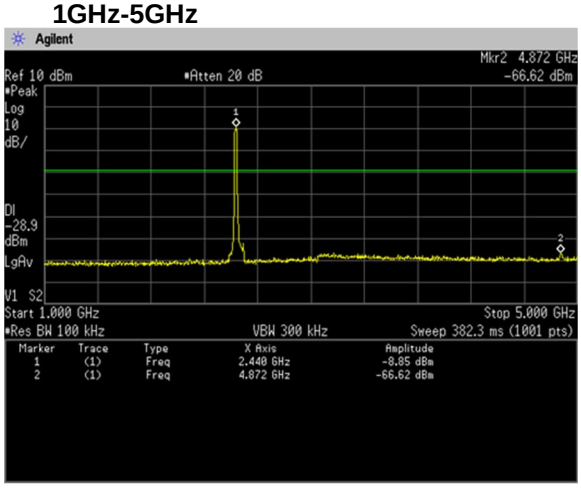


**Channel Middle**

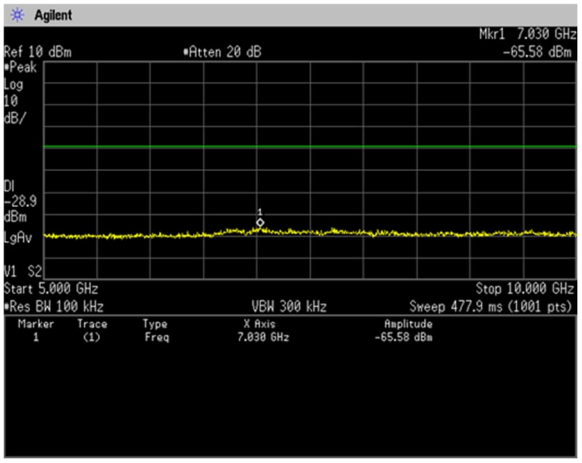
**30MHz-1GHz**



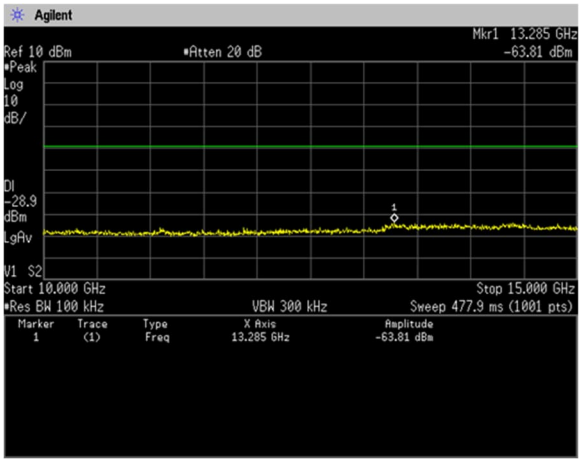

**1GHz-5GHz**



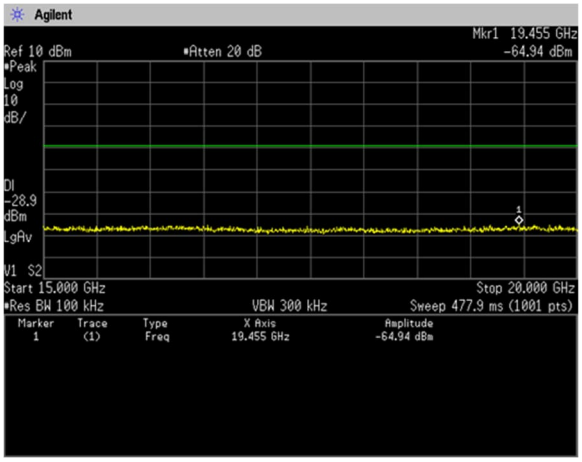

**5GHz-10GHz**



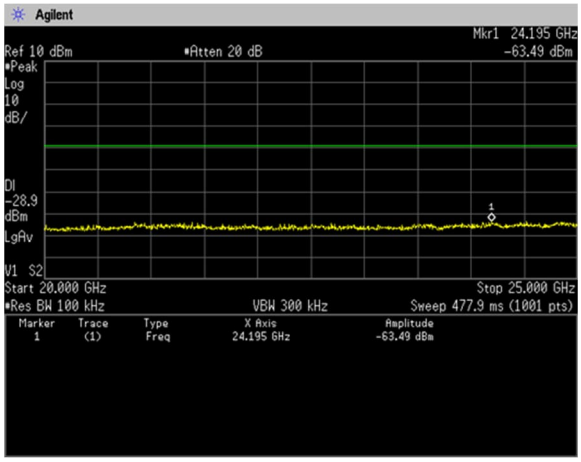

**10GHz-15GHz**




**15GHz-20GHz**

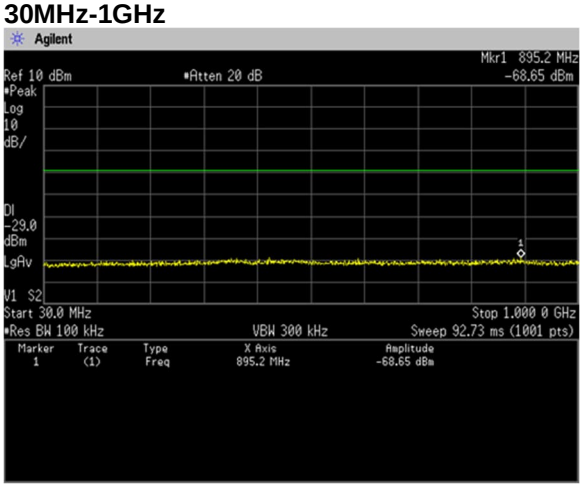



**20GHz-25GHz**

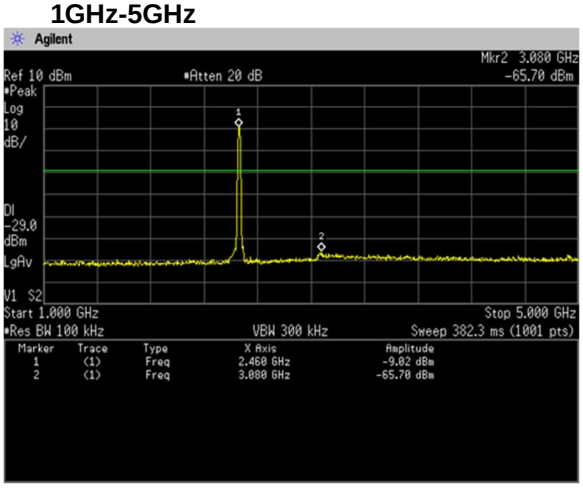


**Channel High**

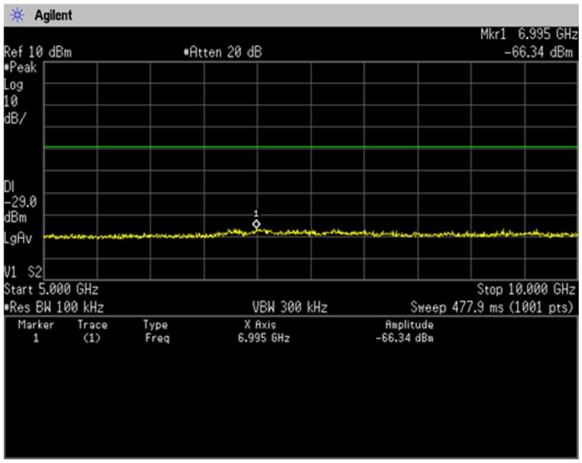
**30MHz-1GHz**



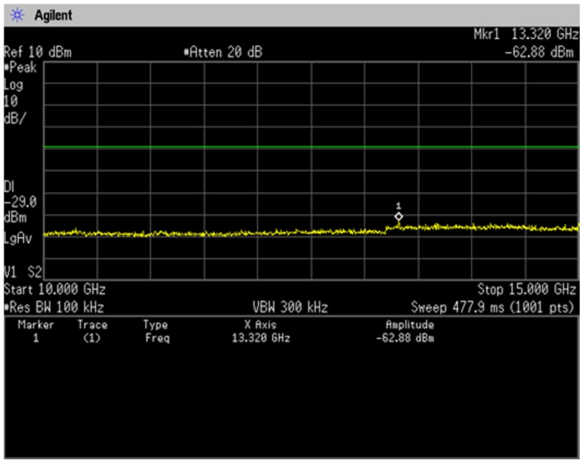

**1GHz-5GHz**



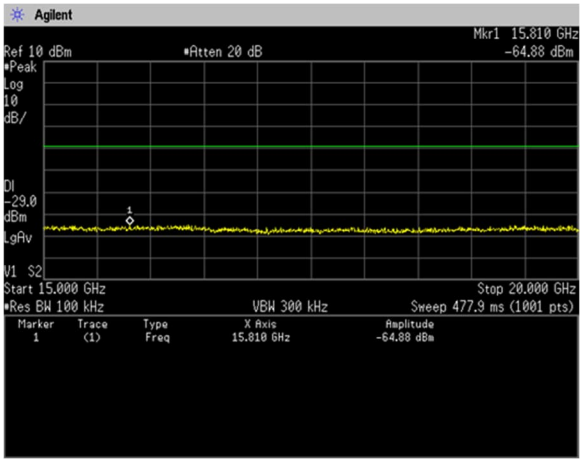

**5GHz-10GHz**



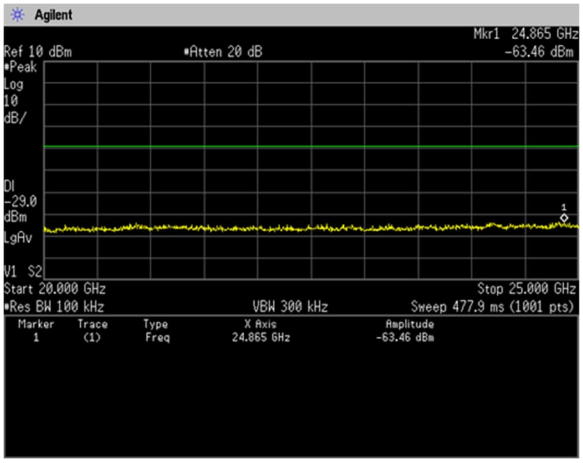

**10GHz-15GHz**




**15GHz-20GHz**

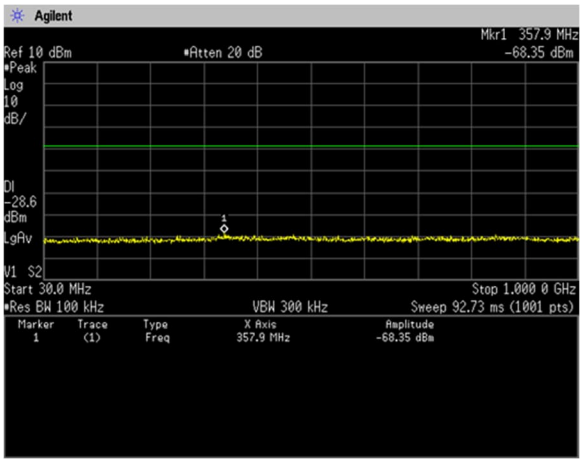



**20GHz-25GHz**

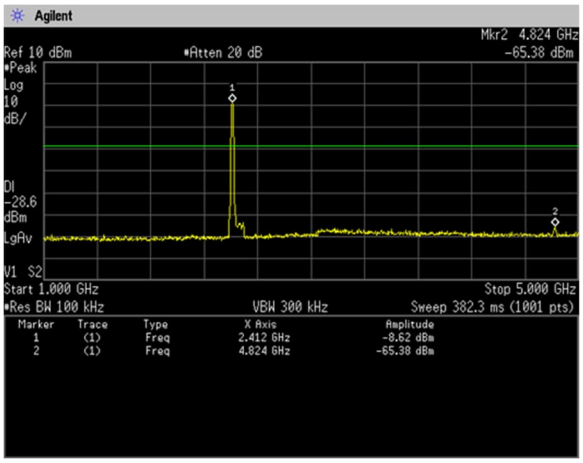


**EB1190EM**
**[IEEE802.11n (HT20)]**
**Channel Low**

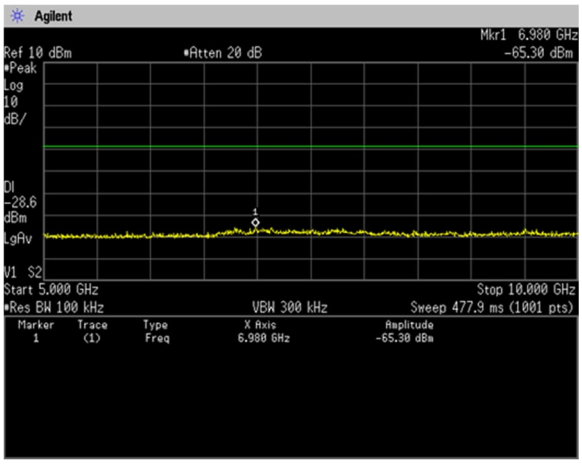
**30MHz-1GHz**



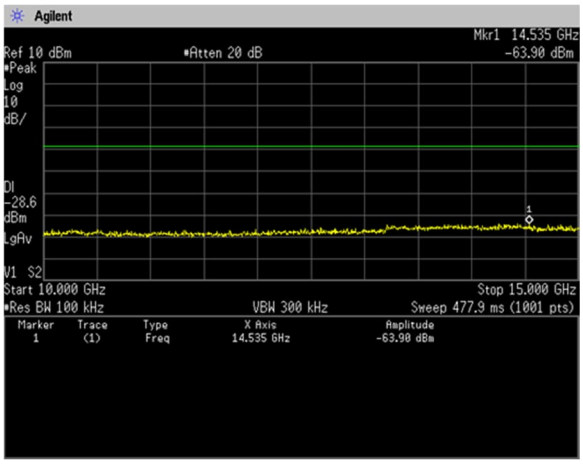

**1GHz-5GHz**



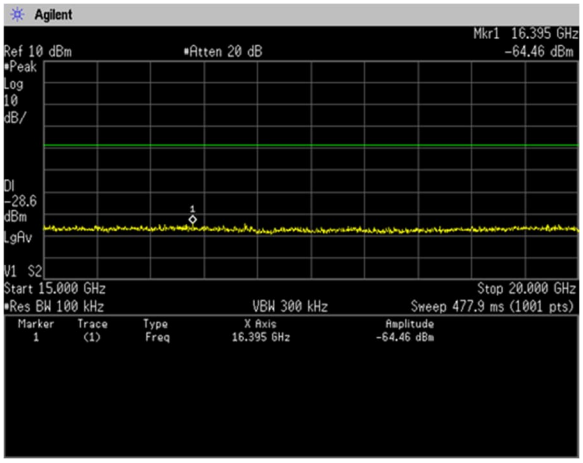

**5GHz-10GHz**



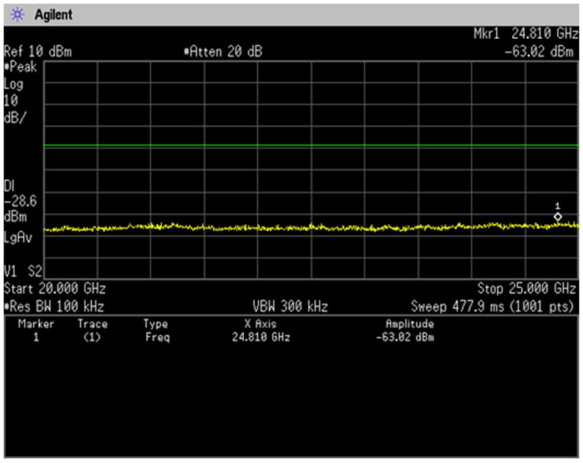

**10GHz-15GHz**




**15GHz-20GHz**

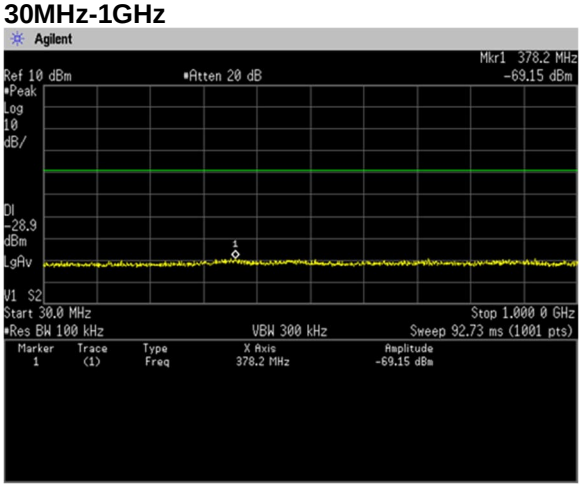



**20GHz-25GHz**

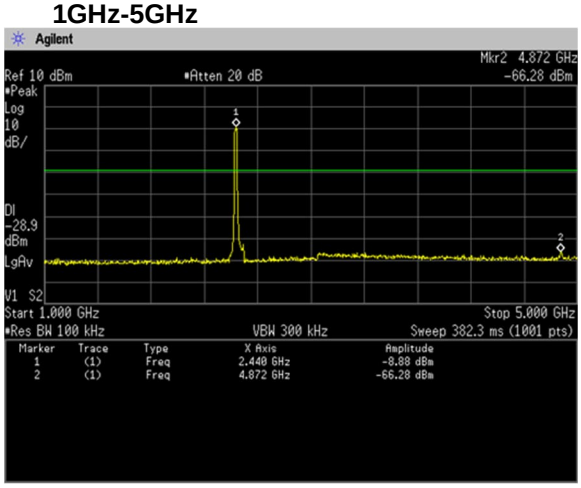


**Channel Middle**

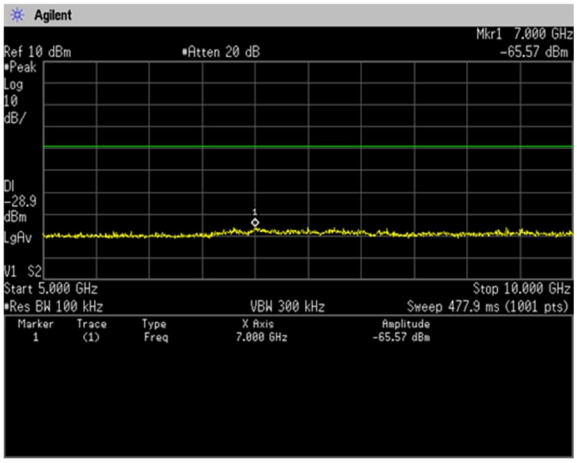
**30MHz-1GHz**



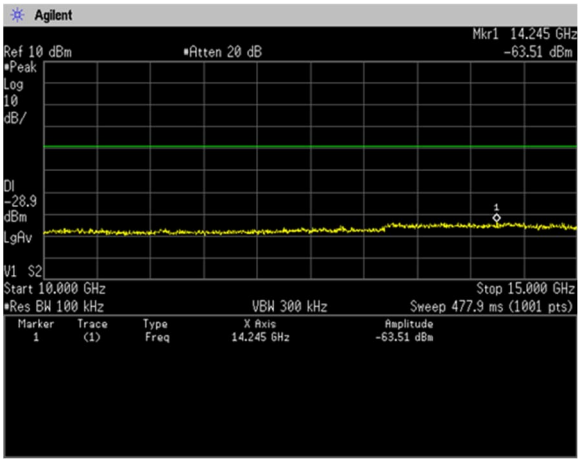

**1GHz-5GHz**



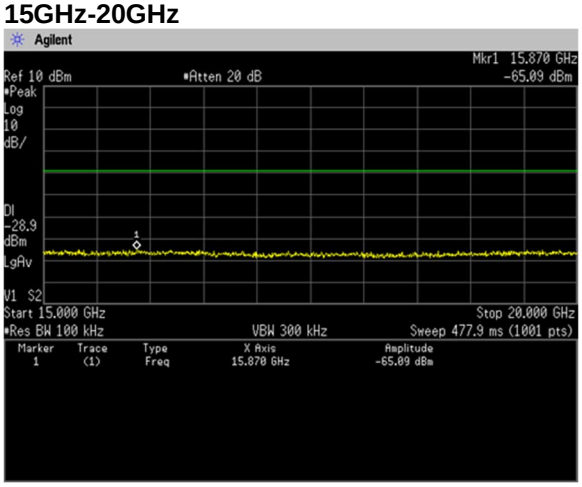

**5GHz-10GHz**



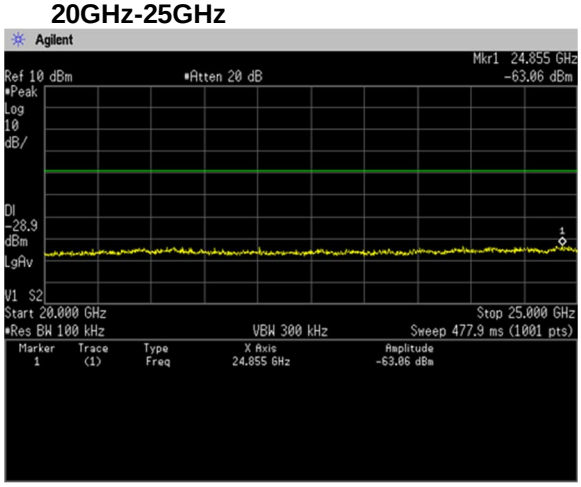

**10GHz-15GHz**




**15GHz-20GHz**

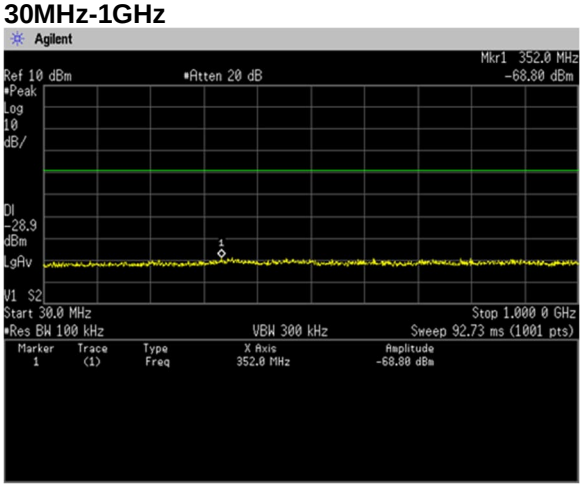



**20GHz-25GHz**

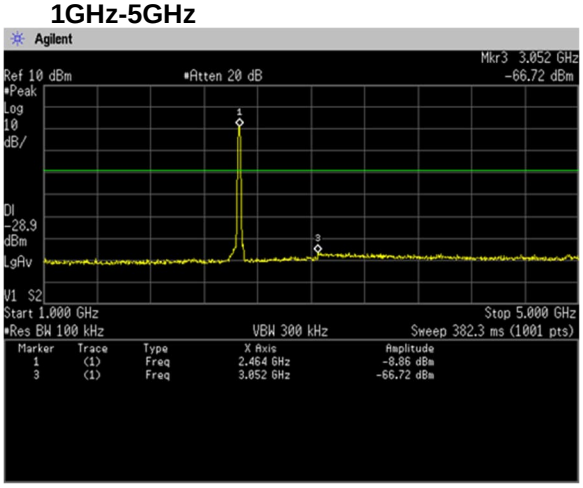


**Channel High**

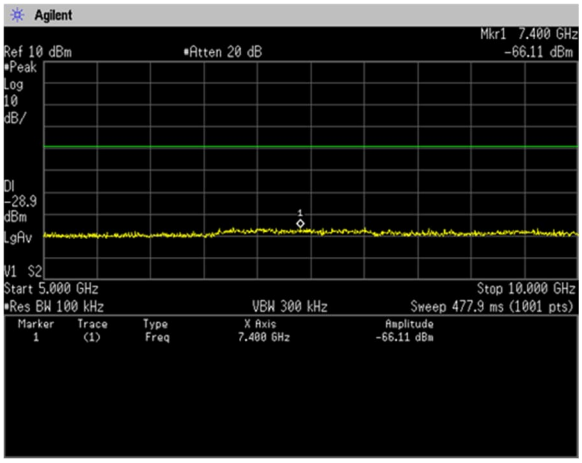
**30MHz-1GHz**



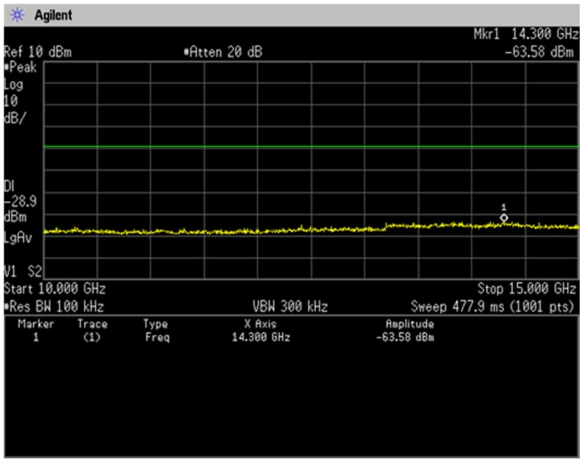

**1GHz-5GHz**



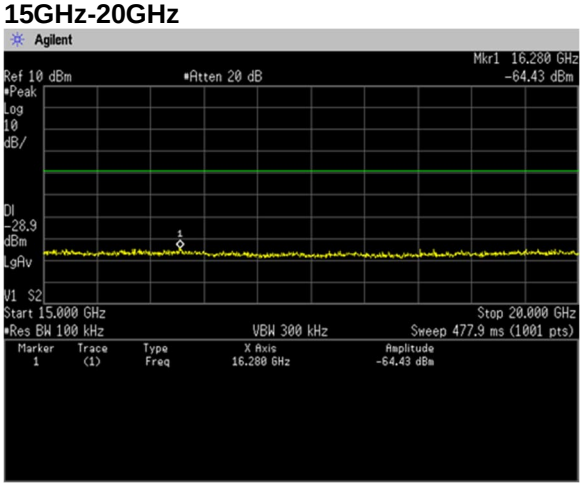

**5GHz-10GHz**



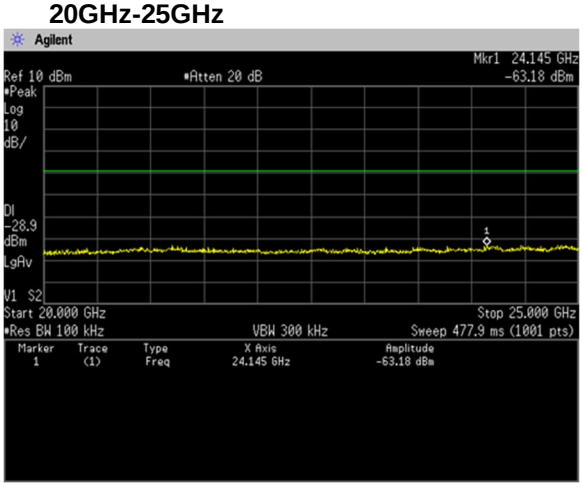

**10GHz-15GHz**




**15GHz-20GHz**

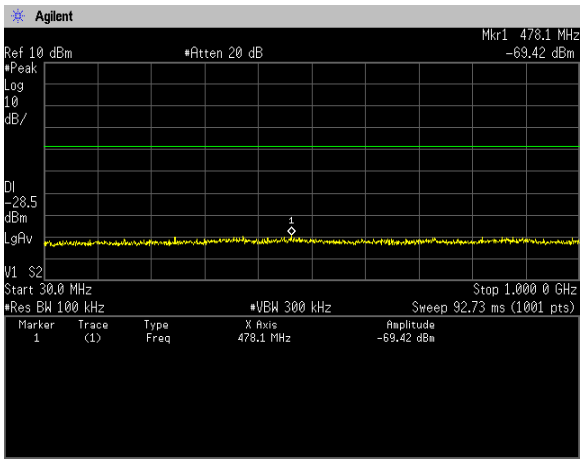



**20GHz-25GHz**

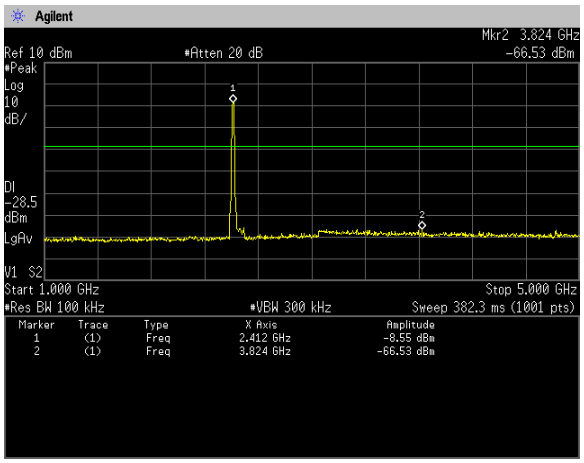


**EB1207**
**[IEEE802.11n (HT20)]**
**Channel Low**

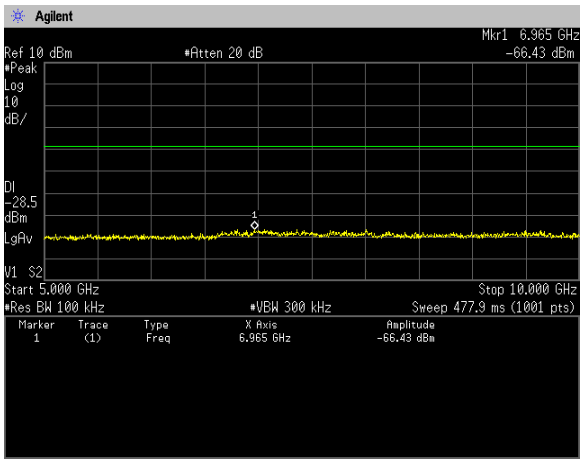
**30MHz-1GHz**



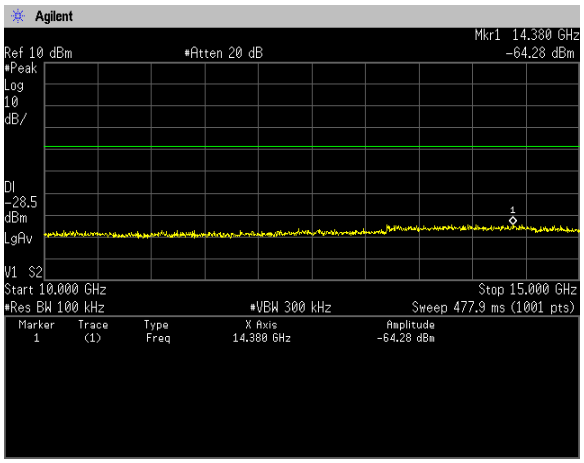

**1GHz-5GHz**



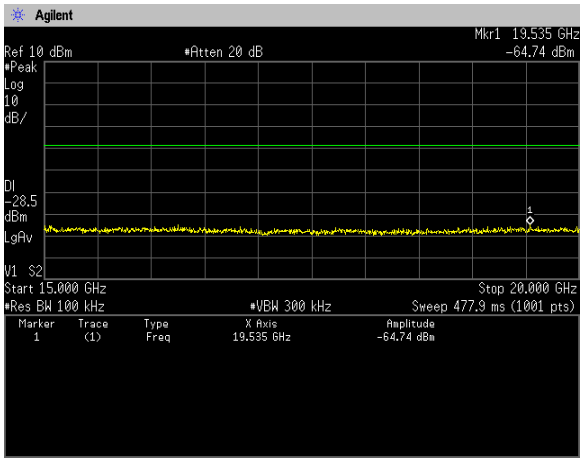

**5GHz-10GHz**



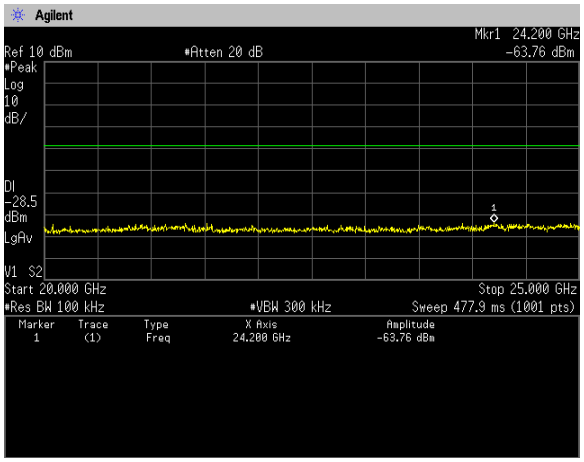

**10GHz-15GHz**




**15GHz-20GHz**

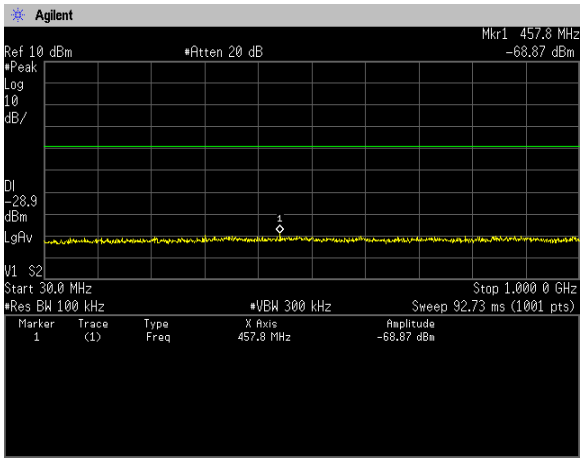



**20GHz-25GHz**

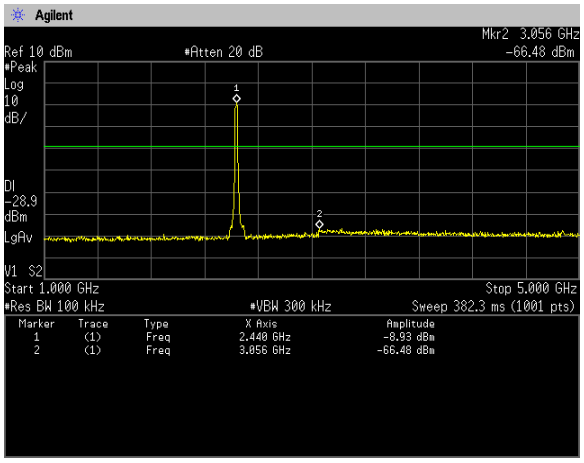


## Channel Middle

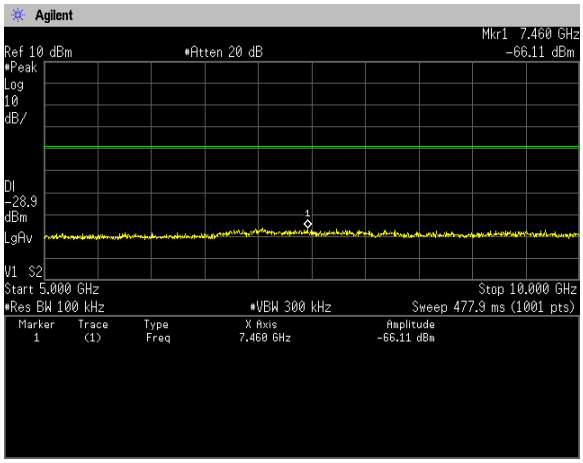
### 30MHz-1GHz



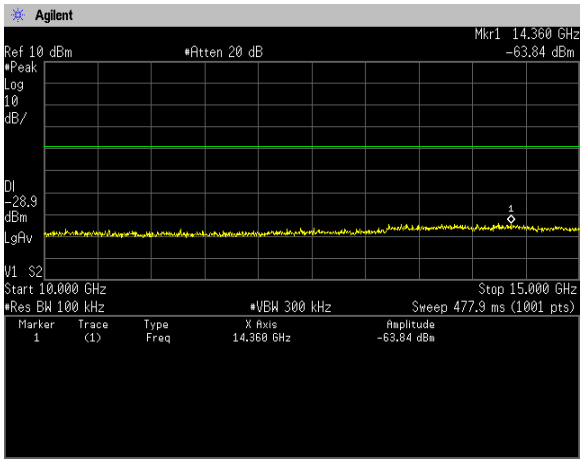

### 1GHz-5GHz



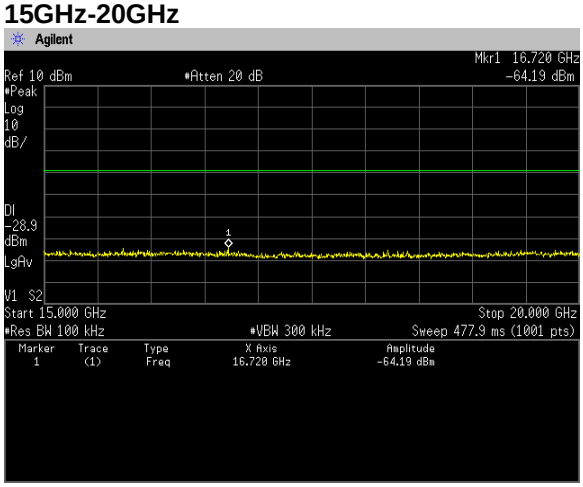

### 5GHz-10GHz



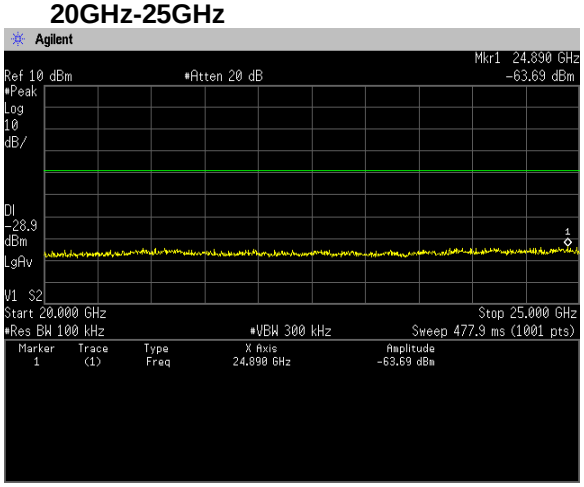

### 10GHz-15GHz




### 15GHz-20GHz

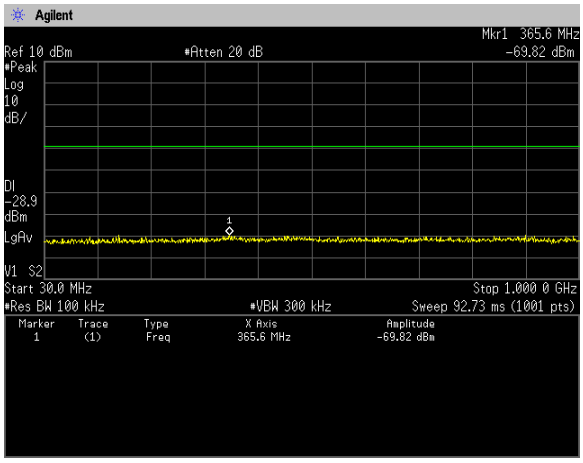



### 20GHz-25GHz

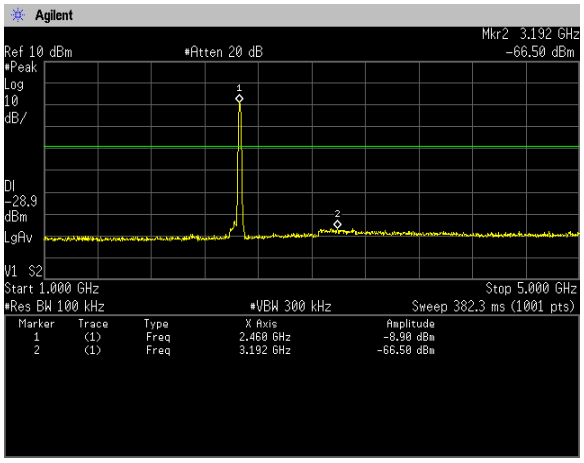


**Channel High**

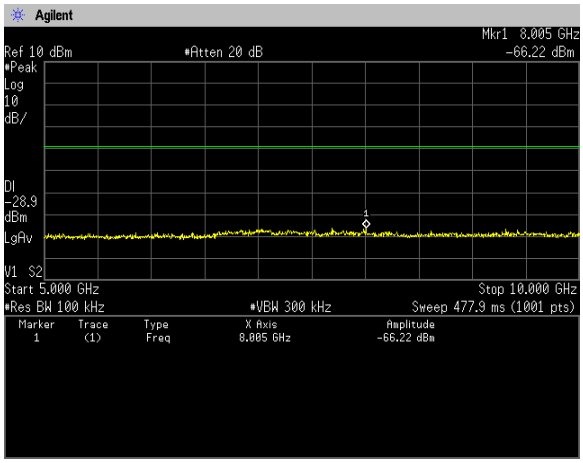
**30MHz-1GHz**



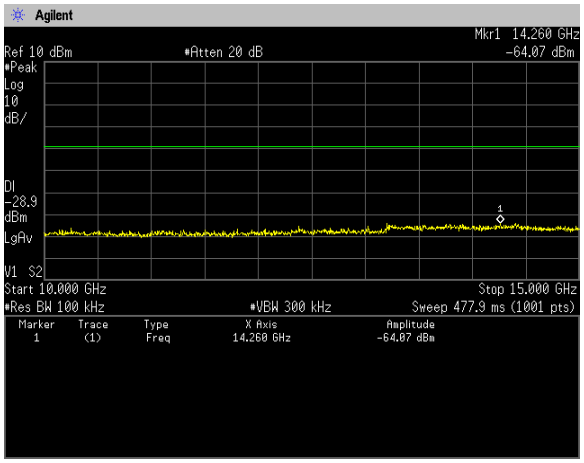

**1GHz-5GHz**



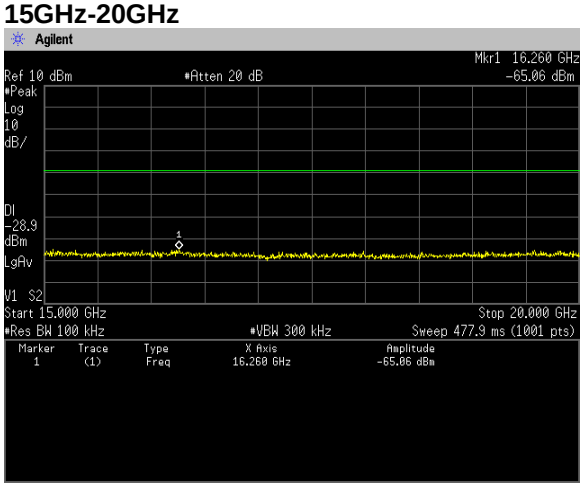

**5GHz-10GHz**



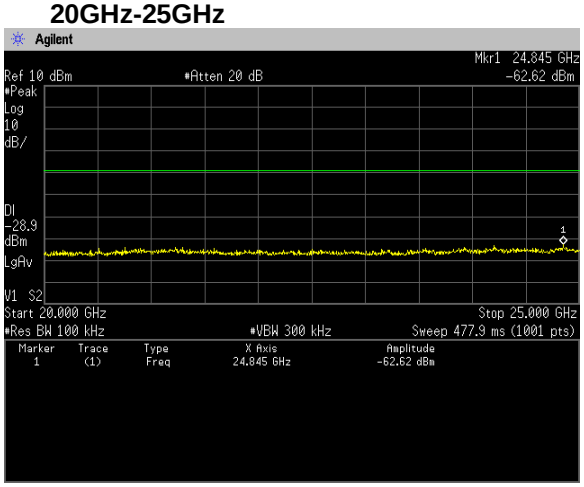

**10GHz-15GHz**




**15GHz-20GHz**



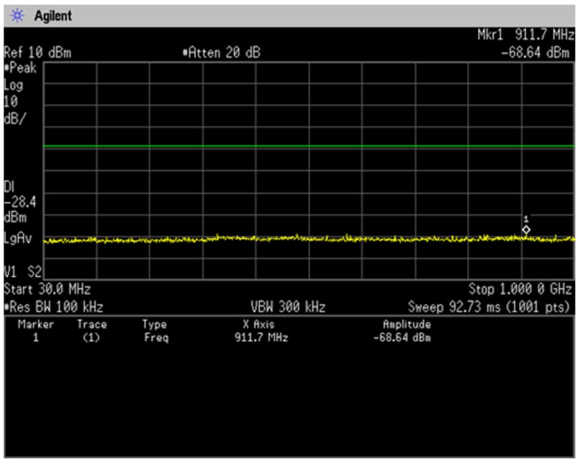

**20GHz-25GHz**



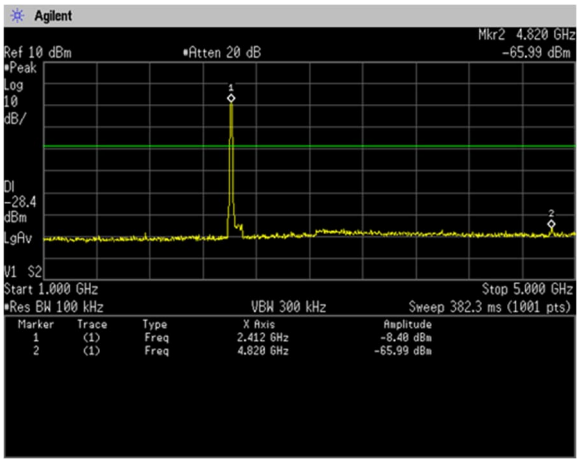

Comparison of the charts of EB1190EM and EB1207 showed that the difference in test results was less than 3 dB.

**EB1190EM**
**[IEEE802.11ac (VHT20)]**
**Channel Low**

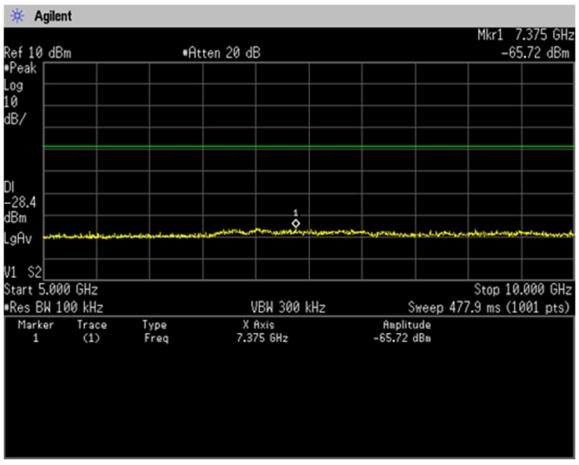
**30MHz-1GHz**



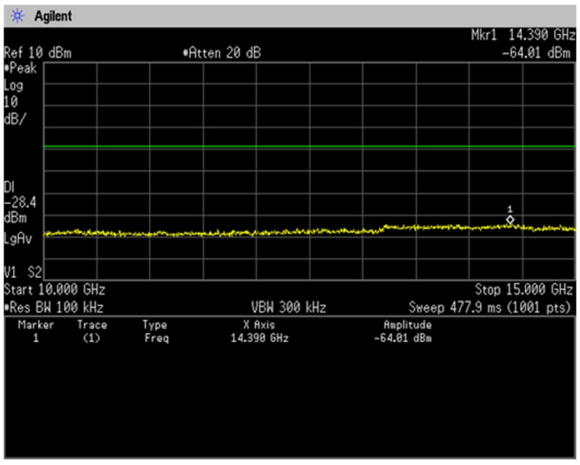

**1GHz-5GHz**



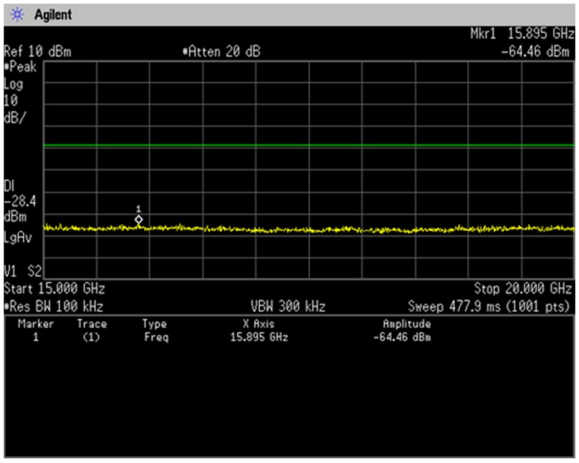

**5GHz-10GHz**



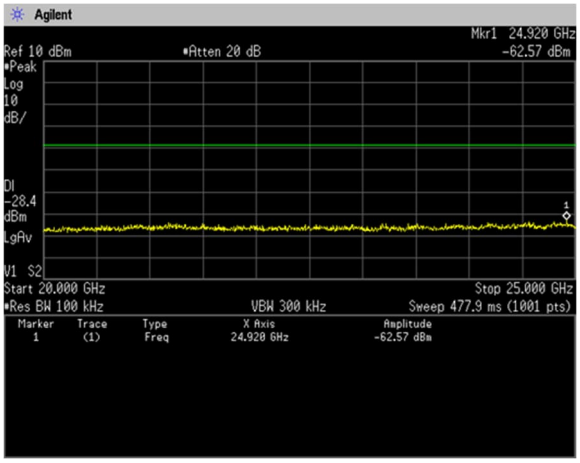

**10GHz-15GHz**




**15GHz-20GHz**

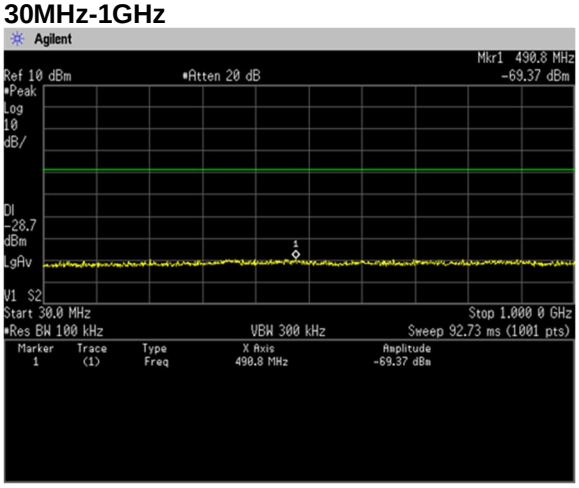



**20GHz-25GHz**

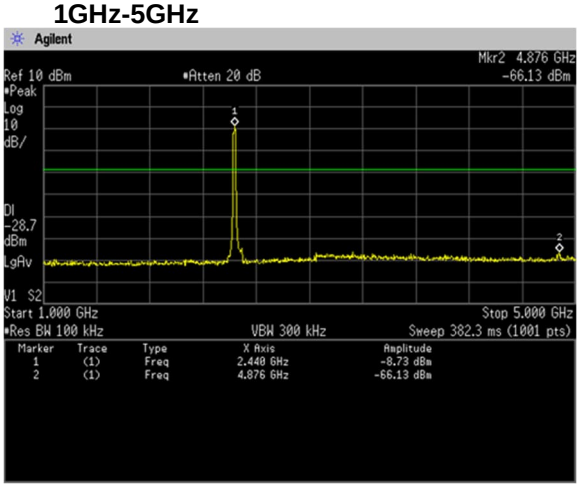


**Channel Middle**

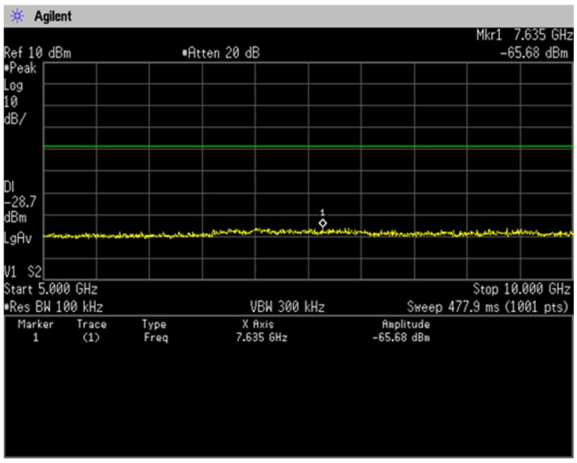
**30MHz-1GHz**



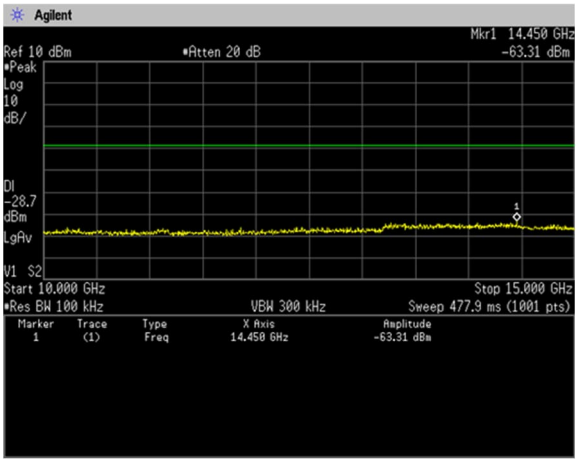

**1GHz-5GHz**



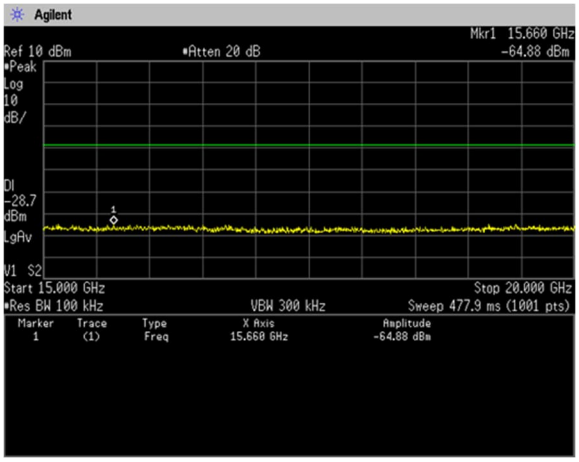

**5GHz-10GHz**



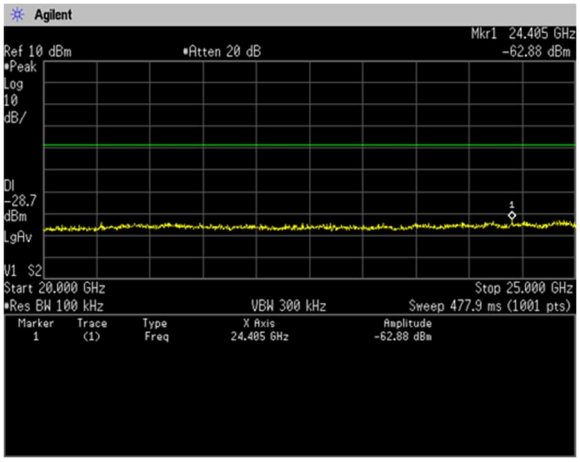

**10GHz-15GHz**




**15GHz-20GHz**

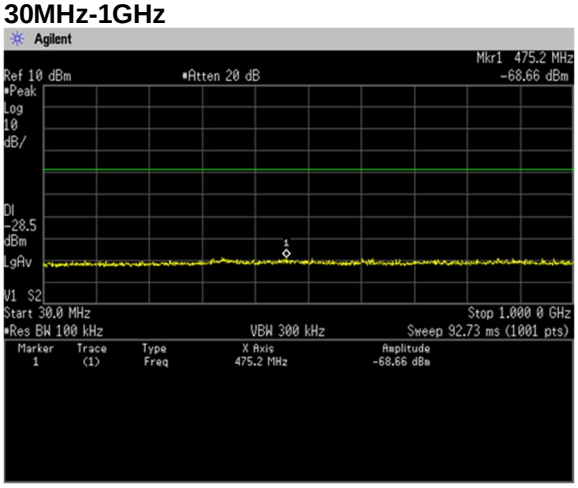



**20GHz-25GHz**

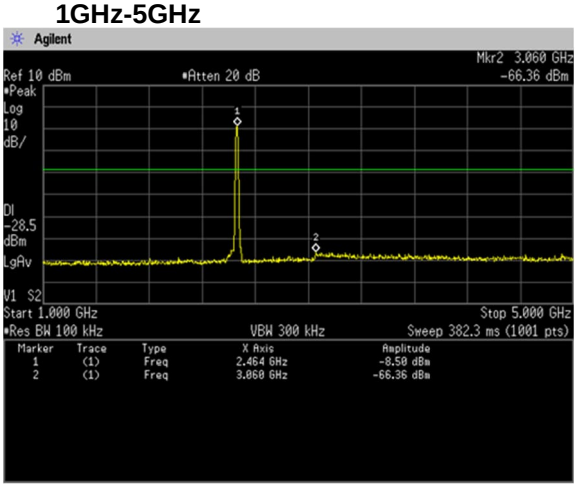


**Channel High**

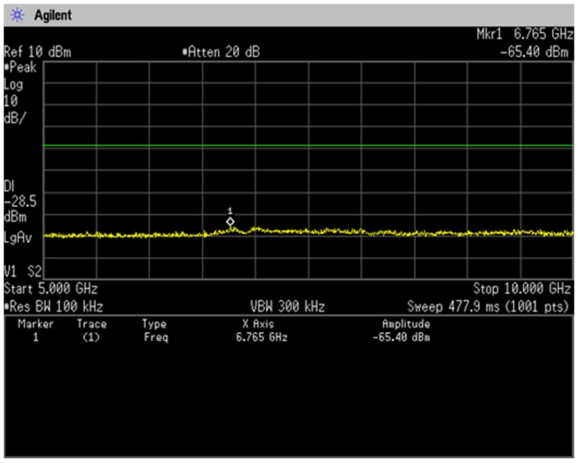
**30MHz-1GHz**



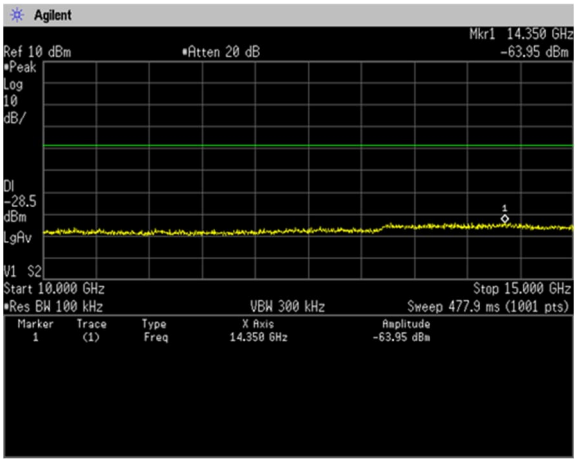

**1GHz-5GHz**



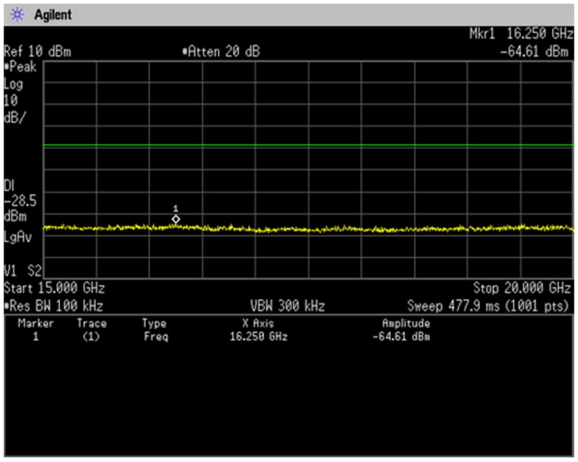

**5GHz-10GHz**



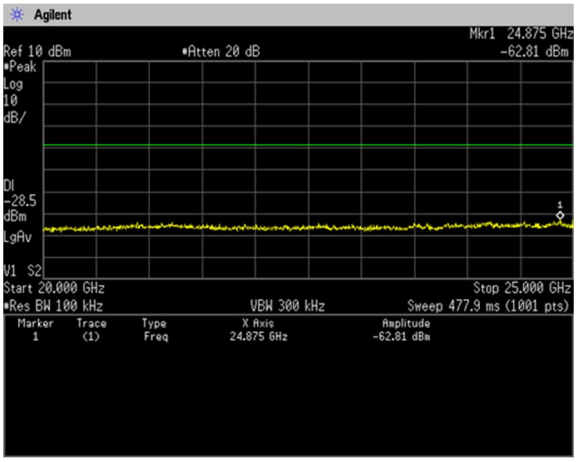

**10GHz-15GHz**




**15GHz-20GHz**




**20GHz-25GHz**



## 4.5 Spurious Emissions - Radiated -

### 4.5.1 Measurement procedure

**[FCC 15.247(d), 15.205, 15.209, KDB 558074 D01 v05r02, Section 8.6]**

Test was applied by following conditions.

| | | |
|---|---|---|
| Test method | : | ANSI C63.10 |
| Frequency range | : | 9 kHz to 25 GHz |
| Test place | : | 3m Semi-anechoic chamber, 10m Semi-anechoic chamber No.1 |
| EUT was placed on | : | Styrofoam table / (W) 1.0 × (D) 0.8 × (H) 0.8 m (below 1 GHz)<br>Styrofoam table / (W) 0.6 × (D) 0.6 ×(H)1.5 m (above 1 GHz) |
| Antenna distance | : | 3 m |
| Test receiver setting | | Below 1 GHz |
| - Detector | : | Average (9 kHz-90 kHz, 110 kHz-490 kHz), Quasi-peak |
| - Bandwidth | : | 200 Hz, 120 kHz |
| Spectrum analyzer setting | | Above 1 GHz |
| - Peak | : | RBW=1 MHz, VBW=3 MHz, Span=0 Hz, Sweep=auto |
| - Average | : | 11b: RBW=1 MHz, VBW=3 kHz, Span=0 Hz, Sweep=auto<br>11g, 11n, 11ac: RBW=1 MHz, VBW=1 kHz, Span=0 Hz, Sweep=auto<br>Display mode=Linear |

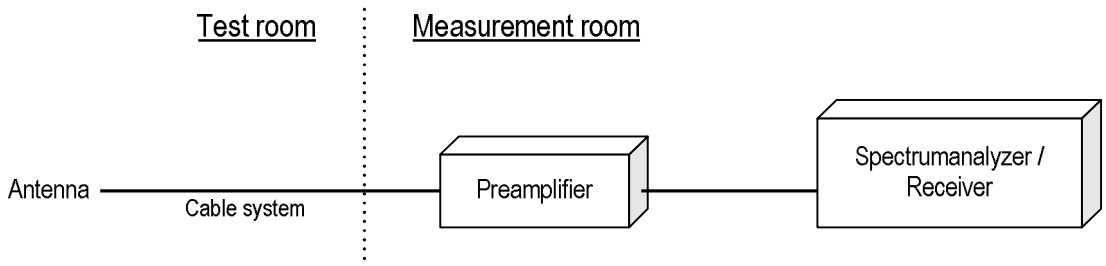
Average Measurement Setting [VBW]

| mode | Duty Cycle (%) | Ton [μs] | Toff [μs] | 1/Ton (kHz) | Determined VBW Setting |
|---|---|---|---|---|---|
| 11b | 97.16 | 0.992 | 0.029 | 1.008 | 3kHz |
| 11g | 97.48 | 1.391 | 0.036 | 0.719 | 1kHz |
| 11n(HT20) | 97.20 | 1.286 | 0.037 | 0.778 | 1kHz |
| 11ac(VHT20) | 97.33 | 1.312 | 0.036 | 0.762 | 1kHz |

Although these tests were performed other than open area test site, adequate comparison measurements were confirmed against 30 m open are test site.
Therefore, sufficient tests were made to demonstrate that the alternative site produces results that correlate with the ones of tests made in an open field based on KDB 937606.

Radiated emission measurements are performed at 3m distance with the broadband antenna (Loop antenna, Biconical antenna, Log periodic antenna and Double ridged guide antenna). The antenna is positioned both the horizontal and vertical planes of polarization and height is varied 1m to 4m and stopped at height producing the maximum emission. As for the Loop antenna, it is positioned with its plane vertical, and the center of the Loop antenna is 1m above the ground plane.
The EUT is Placed on a turntable, which is 0.8m/1.5m above ground plane. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level. The test results represent the worst cases emission for each emission with manipulating the EUT, support equipment, interconnecting cables and varying the mode of operation. Sufficient time for the EUT, support equipment, and test equipment are allowed for them to warm up to their normal operating condition.

- Test configuration




### 4.5.2 Calculation method

[9 kHz to 150 kHz]
Emission level = Reading + (Ant factor + Cable system loss)
Margin = Limit – Emission level

[150 kHz to 25 GHz]
Emission level = Reading + (Ant factor + Cable system loss - Amp. Gain)
Margin = Limit – Emission level

Example:
Limit @ 4824.0 MHz: 74.0 dBuV/m (Peak Limit)
S.A Reading = 49.5 dBuV Cable system loss = 8.4 dB
Result = 49.5 + 8.4 = 45.1 dBuV/m
Margin = 74.0 - 45.1 = 16.1 dB

### 4.5.3 Limit

| Frequency [MHz] | Field strength | | Distance [m] |
|---|---|---|---|
| | [uV/m] | [dBuV/m] | |
| 0.009-0.490 | 2400 / F [kHz] | 20logE [uV/m] | 300 |
| 0.490-1.705 | 24000 / F [kHz] | 20logE [uV/m] | 30 |
| 1.705-30 | 30 | 29.5 | 30 |
| 30-88 | 100 | 40.0 | 3 |
| 88-216 | 150 | 43.5 | 3 |
| 216-960 | 200 | 46.0 | 3 |
| Above 960 | 500 | 54.0 | 3 |

Note:
1. The lower limit shall apply at the transition frequencies.
2. Emission level [dBuV/m] = 20log Emission [uV/m]
3. As shown in 15.35(b), for frequencies above 1000 MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20 dB under any condition modulation.

### 4.5.4 Test data

| | | | | | |
|---|---|---|---|---|---|
| Date | : | 2-May-2024 | | | |
| Temperature | : | 21.6 [˚C] | | | |
| Humidity | : | 36.2 [%] | Test engineer | : | |
| Test place | : | 3m Semi-anechoic chamber | | | Chiaki Kanno |

| | | | | | |
|---|---|---|---|---|---|
| Date | : | 16-May-2024 | | | |
| Temperature | : | 21.6 [˚C] | | | |
| Humidity | : | 47.4 [%] | Test engineer | : | |
| Test place | : | 3m Semi-anechoic chamber | | | Chiaki Kanno |

| | | | | | |
|---|---|---|---|---|---|
| Date | : | 29-June-2024 | | | |
| Temperature | : | 20.1 [˚C] | | | |
| Humidity | : | 58.3 [%] | Test engineer | : | |
| Test place | : | 10m Semi-anechoic chamber | | | Taiki Watanabe |

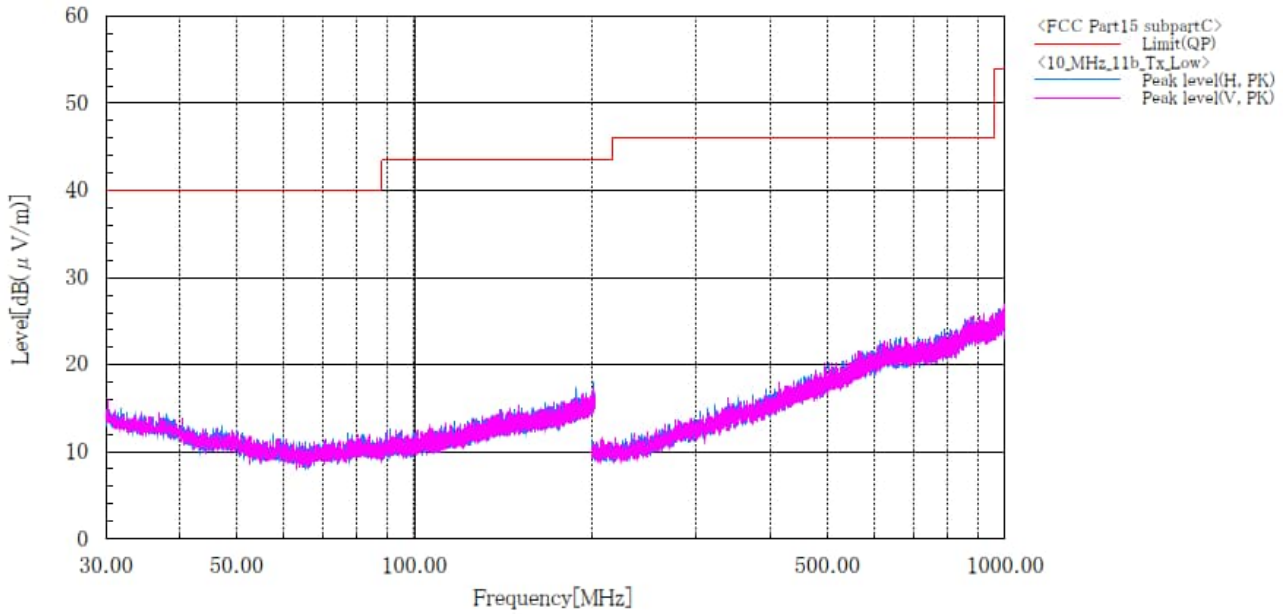
| | | | | | |
|---|---|---|---|---|---|
| Date | : | 8-August-2024 | | | |
| Temperature | : | 21.1 [˚C] | | | |
| Humidity | : | 59.4 [%] | Test engineer | : | |
| Test place | : | 3m Semi-anechoic chamber | | | Tadahiro Seino |

| | | | | | |
|---|---|---|---|---|---|
| Date | : | 9-August-2024 | | | |
| Temperature | : | 21.9 [˚C] | | | |
| Humidity | : | 58.8 [%] | Test engineer | : | |
| Test place | : | 3m Semi-anechoic chamber | | | Tadahiro Seino |

#### 4.5.4.1 Transmission mode

**EB1190EM [11b]**
**Channel Low**
**BELOW 1GHz**

| | | | |
|---|---|---|---|
| Company name | : KYOCERA Corporation | Sheet No. | : 10 |
| EUT | : Mobile Phone | Standard | : FCC Part15 subpart C |
| Model No. | : EB1190EM | Operator | : C.Kanno |
| Serial No. | : N/A | Temp,Hum,Atm | : 21.6 [° C], 47.4 [%] |
| Test mode | : WLAN_11b_Tx_CH:Low | Note1 | : |

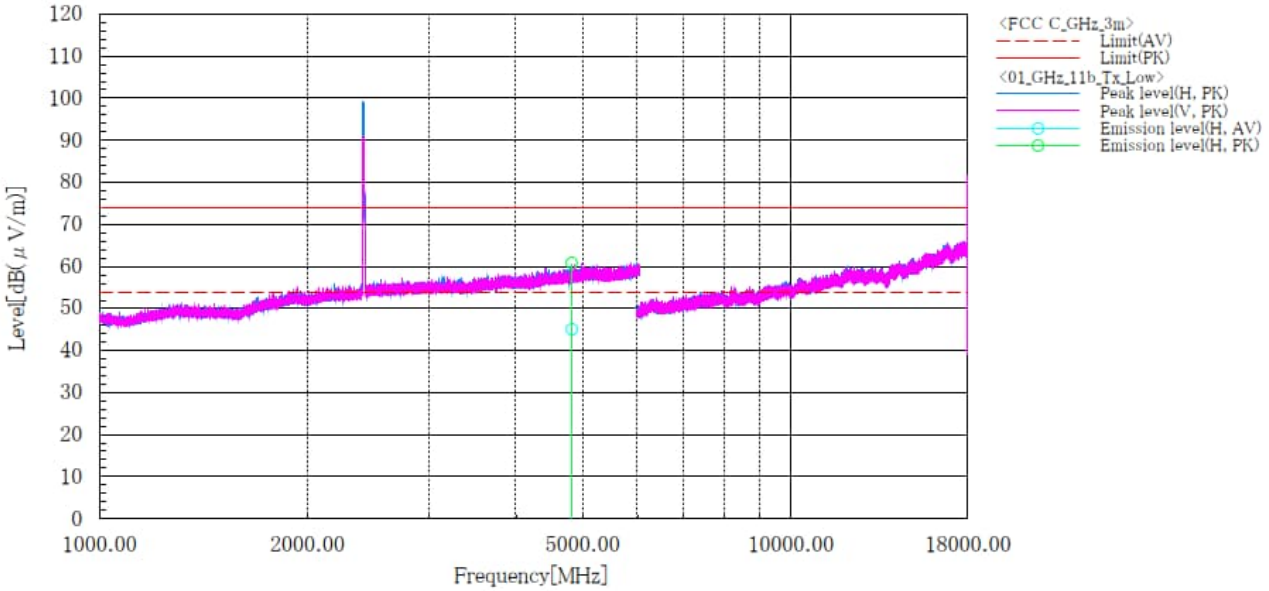



Final Result

Note:
1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
2. No emission were detected in frequency range 9kHz to 1000MHz at the 3 meters distance.

**EB1190EM [11b]**
**Channel Low**
**ABOVE 1GHz**

| | | | |
|---|---|---|---|
| Company name | : KYOCERA Corporation | Sheet No. | : 01 |
| EUT | : Mobile Phone | Standard | : FCC Part.15 subpart C |
| Model No. | : EB1190EM | Operator | : C.Kanno |
| Serial No. | : N/A | Temp,Hum,Atm | : 21.6 [° C], 36.2 [%] |
| Test mode | : WLAN 11b_Tx | Note1 | : CH:1 (2412MHz) |



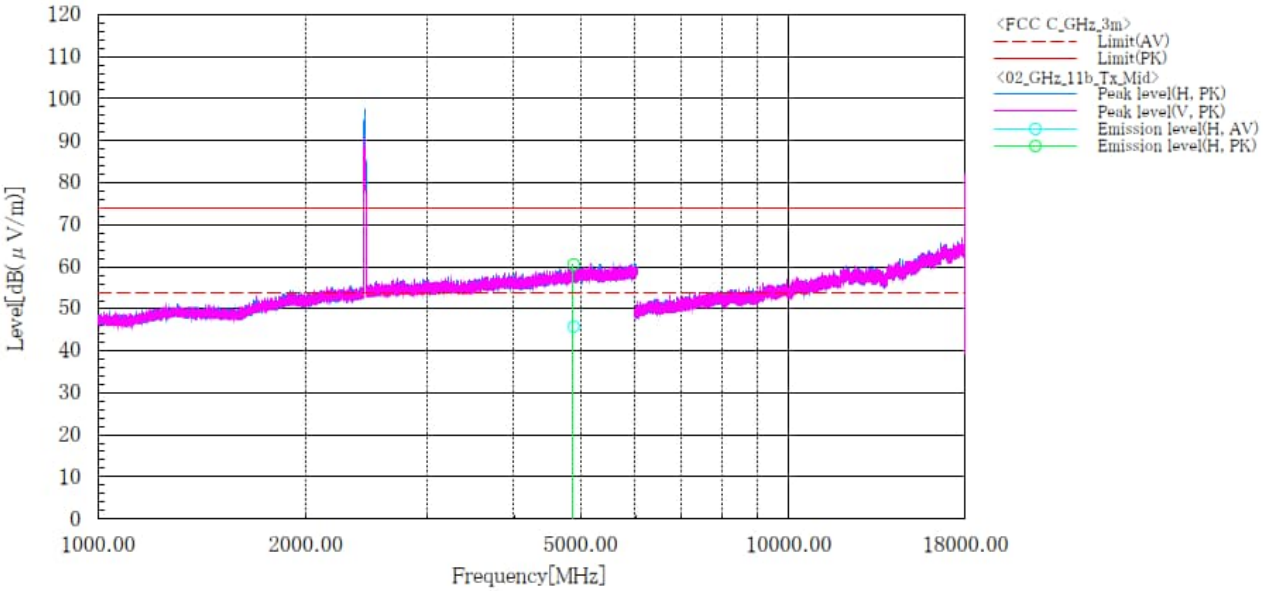

Final Result

| No. | Frequency [MHz] | Pol | Reading AV [dB(μV)] | Reading PK [dB(μV)] | c.f [dB(1/m)] | Result AV [dB(μV/m)] | Result PK [dB(μV/m)] | Limit AV [dB(μV/m)] | Limit PK [dB(μV/m)] | Margin AV [dB] | Margin PK [dB] | Height [cm] | Angle [deg] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4824.000 | H | 32.2 | 47.9 | 12.9 | 45.1 | 60.8 | 54.0 | 74.0 | 8.9 | 13.2 | 170.0 | 159.0 |

Note:
1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
2. No emission were detected in frequency range 18GHz to 25GHz at the 3 meters distance.

**EB1190EM [11b]**
**Channel Middle**
**ABOVE 1GHz**

| | | | |
|---|---|---|---|
| Company name | : KYOCERA Corporation | Sheet No. | : 02 |
| EUT | : Mobile Phone | Standard | : FCC Part.15 subpart C |
| Model No. | : EB1190EM | Operator | : C.Kanno |
| Serial No. | : N/A | Temp,Hum,Atm | : 21.6 [° C], 36.2 [%] |
| Test mode | : WLAN 11b_Tx | Note1 | : CH:6 (2437MHz) |



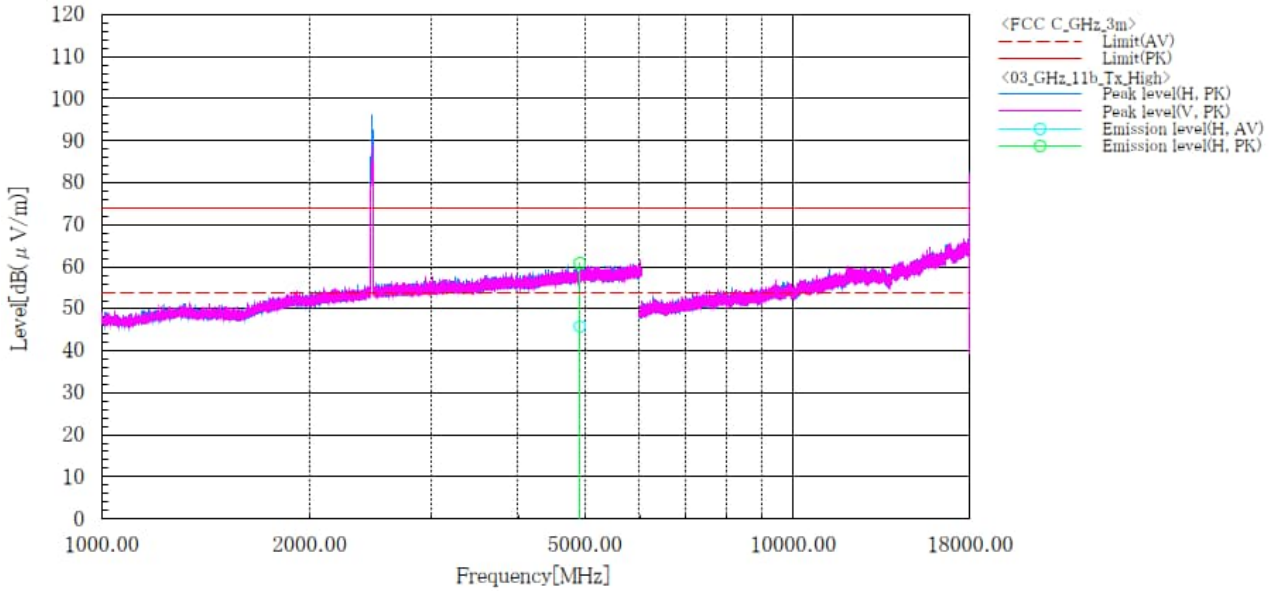

Final Result

| No. | Frequency [MHz] | Pol | Reading AV [dB(μV)] | Reading PK [dB(μV)] | c.f [dB(1/m)] | Result AV [dB(μV/m)] | Result PK [dB(μV/m)] | Limit AV [dB(μV/m)] | Limit PK [dB(μV/m)] | Margin AV [dB] | Margin PK [dB] | Height [cm] | Angle [deg] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4874.000 | H | 32.8 | 47.7 | 13.0 | 45.8 | 60.7 | 54.0 | 74.0 | 8.2 | 13.3 | 154.0 | 241.0 |

Note:
1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
2. No emission were detected in frequency range 18GHz to 25GHz at the 3 meters distance.

**EB1190EM [11b]**
**Channel High**
**ABOVE 1GHz**

| | | | |
|---|---|---|---|
| Company name | : KYOCERA Corporation | Sheet No. | : 03 |
| EUT | : Mobile Phone | Standard | : FCC Part.15 subpart C |
| Model No. | : EB1190EM | Operator | : C.Kanno |
| Serial No. | : N/A | Temp,Hum,Atm | : 21.6 [° C], 36.2 [%] |
| Test mode | : WLAN 11b_Tx | Note1 | : CH:11 (2462MHz) |



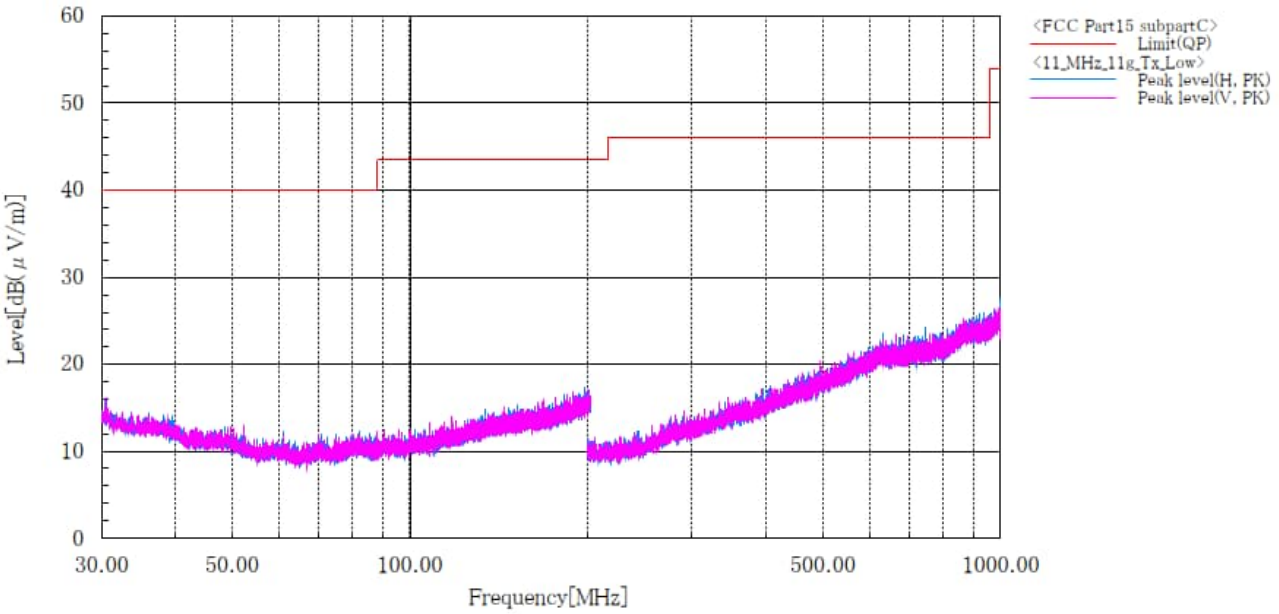

Final Result

| No. | Frequency [MHz] | Pol | Reading AV [dB(μV)] | Reading PK [dB(μV)] | c.f [dB(1/m)] | Result AV [dB(μV/m)] | Result PK [dB(μV/m)] | Limit AV [dB(μV/m)] | Limit PK [dB(μV/m)] | Margin AV [dB] | Margin PK [dB] | Height [cm] | Angle [deg] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4924.000 | H | 32.8 | 47.8 | 13.1 | 45.9 | 60.9 | 54.0 | 74.0 | 8.1 | 13.1 | 176.0 | 290.0 |

Note:
1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
2. No emission were detected in frequency range 18GHz to 25GHz at the 3 meters distance.

**EB1190EM [11g]**
**Channel Low**
**BELOW 1GHz**

| | | | |
|---|---|---|---|
| Company name | : KYOCERA Corporation | Sheet No. | : 11 |
| EUT | : Mobile Phone | Standard | : FCC Part15 subpart C |
| Model No. | : EB1190EM | Operator | : C.Kanno |
| Serial No. | : N/A | Temp,Hum,Atm | : 21.6 [° C], 47.4 [%] |
| Test mode | : WLAN_11g_Tx_CH:Low | Note1 | : |

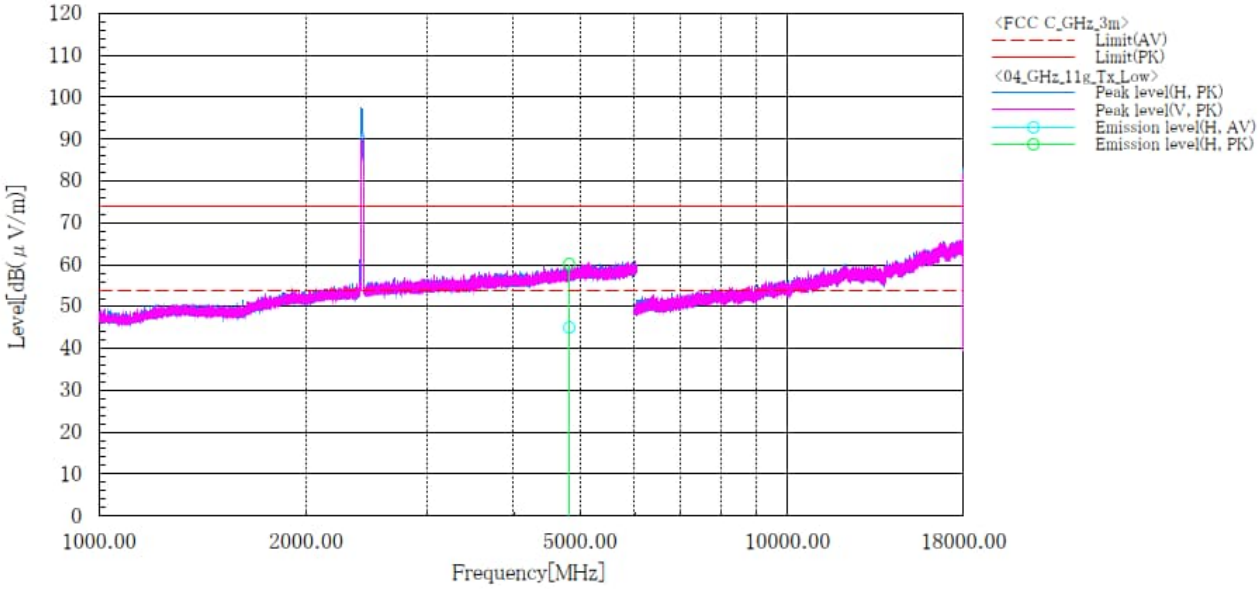



Final Result

Note:
1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
2. No emission were detected in frequency range 9kHz to 1000MHz at the 3 meters distance.

**EB1190EM [11g]**
**Channel Low**
**ABOVE 1GHz**

| | | | |
|---|---|---|---|
| Company name | : KYOCERA Corporation | Sheet No. | : 04 |
| EUT | : Mobile Phone | Standard | : FCC Part.15 subpart C |
| Model No. | : EB1190EM | Operator | : C.Kanno |
| Serial No. | : N/A | Temp,Hum,Atm | : 21.6 [° C], 36.2 [%] |
| Test mode | : WLAN 11g_Tx | Note1 | : CH:1 (2412MHz) |



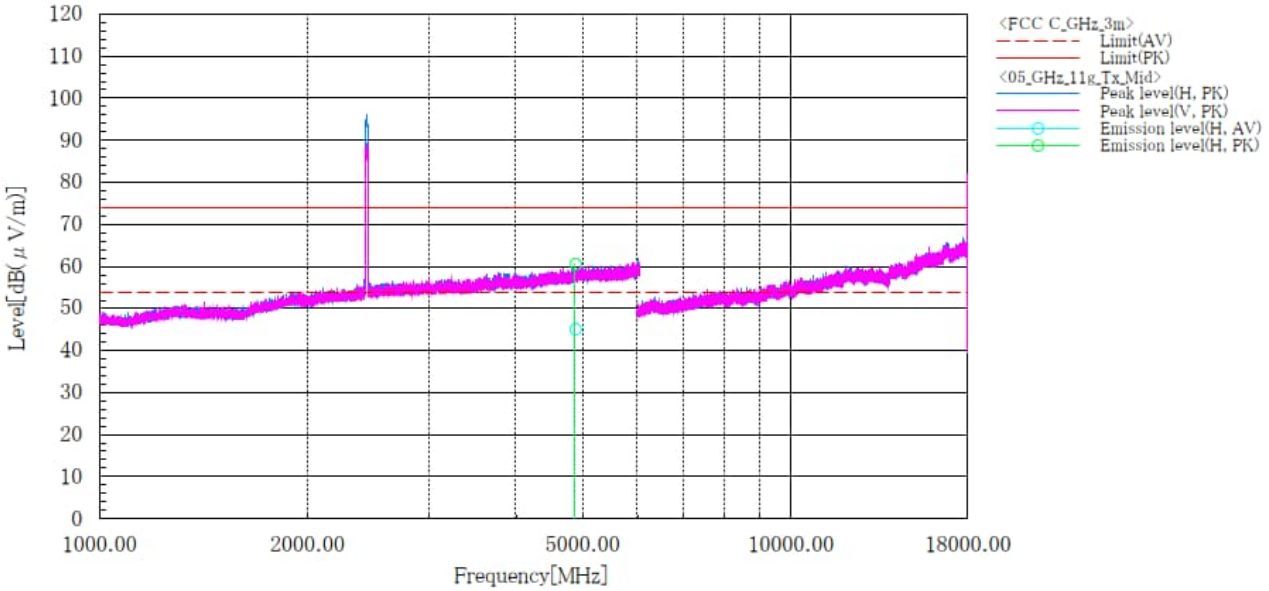

Final Result

| No. | Frequency [MHz] | Pol | Reading AV [dB(μV)] | Reading PK [dB(μV)] | c.f [dB(1/m)] | Result AV [dB(μV/m)] | Result PK [dB(μV/m)] | Limit AV [dB(μV/m)] | Limit PK [dB(μV/m)] | Margin AV [dB] | Margin PK [dB] | Height [cm] | Angle [deg] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4824.000 | H | 32.1 | 47.3 | 12.9 | 45.0 | 60.2 | 54.0 | 74.0 | 9.0 | 13.8 | 164.0 | 156.0 |

Note:
1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
2. No emission were detected in frequency range 18GHz to 25GHz at the 3 meters distance.

**EB1190EM [11g]**
**Channel Middle**
**ABOVE 1GHz**

| | | | |
|---|---|---|---|
| Company name | : KYOCERA Corporation | Sheet No. | : 05 |
| EUT | : Mobile Phone | Standard | : FCC Part.15 subpart C |
| Model No. | : EB1190EM | Operator | : C.Kanno |
| Serial No. | : N/A | Temp,Hum,Atm | : 21.6 [° C], 36.2 [%] |
| Test mode | : WLAN 11g_Tx | Note1 | : CH:6 (2437MHz) |



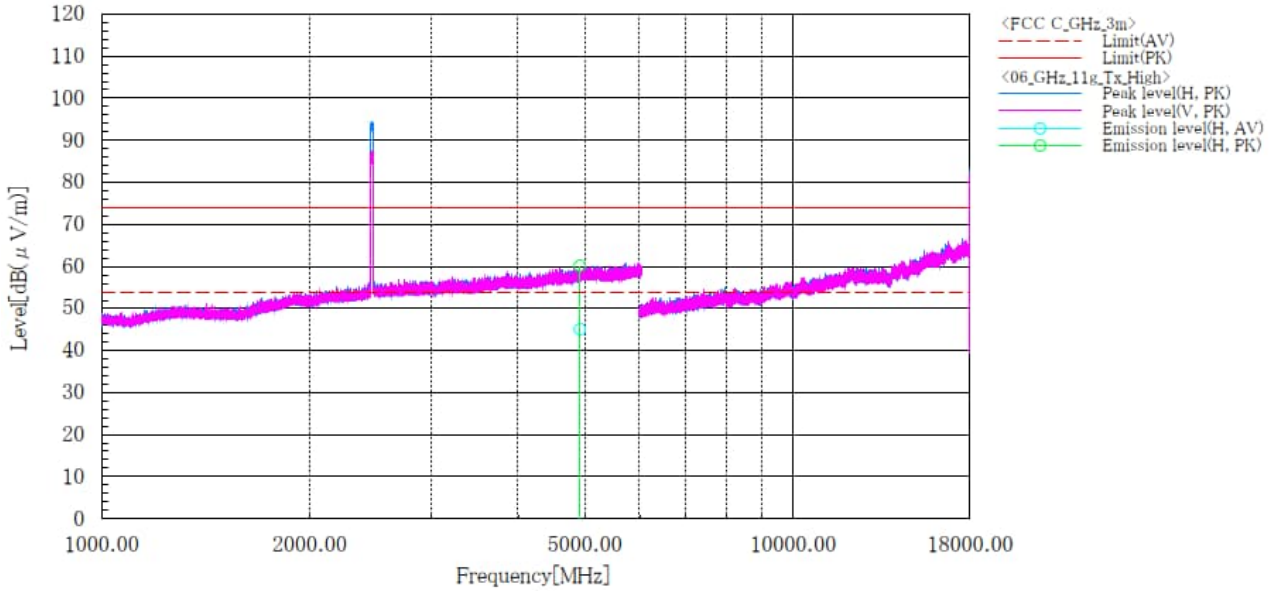

Final Result

| No. | Frequency [MHz] | Pol | Reading AV [dB(μV)] | Reading PK [dB(μV)] | c.f [dB(1/m)] | Result AV [dB(μV/m)] | Result PK [dB(μV/m)] | Limit AV [dB(μV/m)] | Limit PK [dB(μV/m)] | Margin AV [dB] | Margin PK [dB] | Height [cm] | Angle [deg] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4874.000 | H | 32.1 | 47.6 | 13.0 | 45.1 | 60.6 | 54.0 | 74.0 | 8.9 | 13.4 | 169.0 | 246.0 |

Note:
1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
2. No emission were detected in frequency range 18GHz to 25GHz at the 3 meters distance.

**EB1190EM [11g]**
**Channel High**
**ABOVE 1GHz**

| | | | |
|---|---|---|---|
| Company name | : KYOCERA Corporation | Sheet No. | : 06 |
| EUT | : Mobile Phone | Standard | : FCC Part.15 subpart C |
| Model No. | : EB1190EM | Operator | : C.Kanno |
| Serial No. | : N/A | Temp,Hum,Atm | : 21.6 [° C], 36.2 [%] |
| Test mode | : WLAN 11g_Tx | Note1 | : CH:11 (2462MHz) |



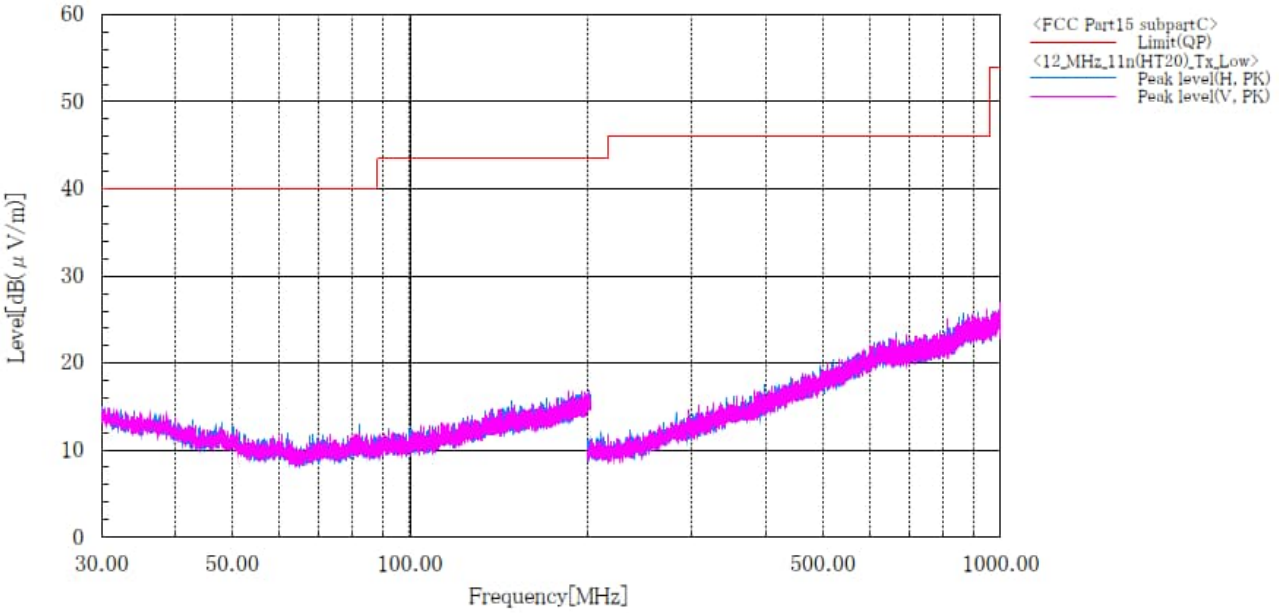

Final Result

| No. | Frequency [MHz] | Pol | Reading AV [dB(μV)] | Reading PK [dB(μV)] | c.f [dB(1/m)] | Result AV [dB(μV/m)] | Result PK [dB(μV/m)] | Limit AV [dB(μV/m)] | Limit PK [dB(μV/m)] | Margin AV [dB] | Margin PK [dB] | Height [cm] | Angle [deg] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4924.000 | H | 32.0 | 47.1 | 13.1 | 45.1 | 60.2 | 54.0 | 74.0 | 8.9 | 13.8 | 161.0 | 230.0 |

Note:
1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
2. No emission were detected in frequency range 18GHz to 25GHz at the 3 meters distance.

**EB1190EM [11n(HT20)]**
**Channel Low**
**BELOW 1GHz**

| | | | |
|---|---|---|---|
| Company name | : KYOCERA Corporation | Sheet No. | : 12 |
| EUT | : Mobile Phone | Standard | : FCC Part15 subpart C |
| Model No. | : EB1190EM | Operator | : C.Kanno |
| Serial No. | : N/A | Temp,Hum,Atm | : 21.6 [° C], 47.4 [%] |
| Test mode | : WLAN_11n(HT20)_Tx_CH:Low | Note1 | : |

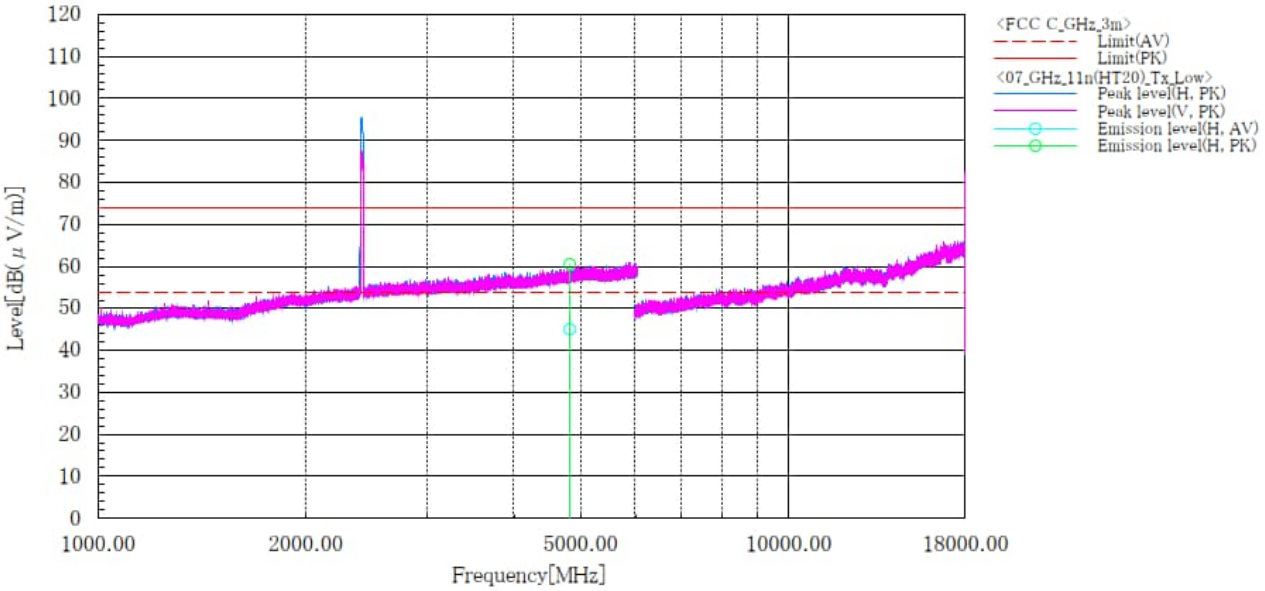



Final Result

Note:
1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
2. No emission were detected in frequency range 9kHz to 1000MHz at the 3 meters distance.

**EB1190EM [11n(HT20)]**
**Channel Low**
**ABOVE 1GHz**

| | | | |
|---|---|---|---|
| Company name | : KYOCERA Corporation | Sheet No. | : 07 |
| EUT | : Mobile Phone | Standard | : FCC Part.15 subpart C |
| Model No. | : EB1190EM | Operator | : C.Kanno |
| Serial No. | : N/A | Temp,Hum,Atm | : 21.6 [° C], 36.2 [%] |
| Test mode | : WLAN 11n(HT20)_Tx | Note1 | : CH:1 (2412MHz) |



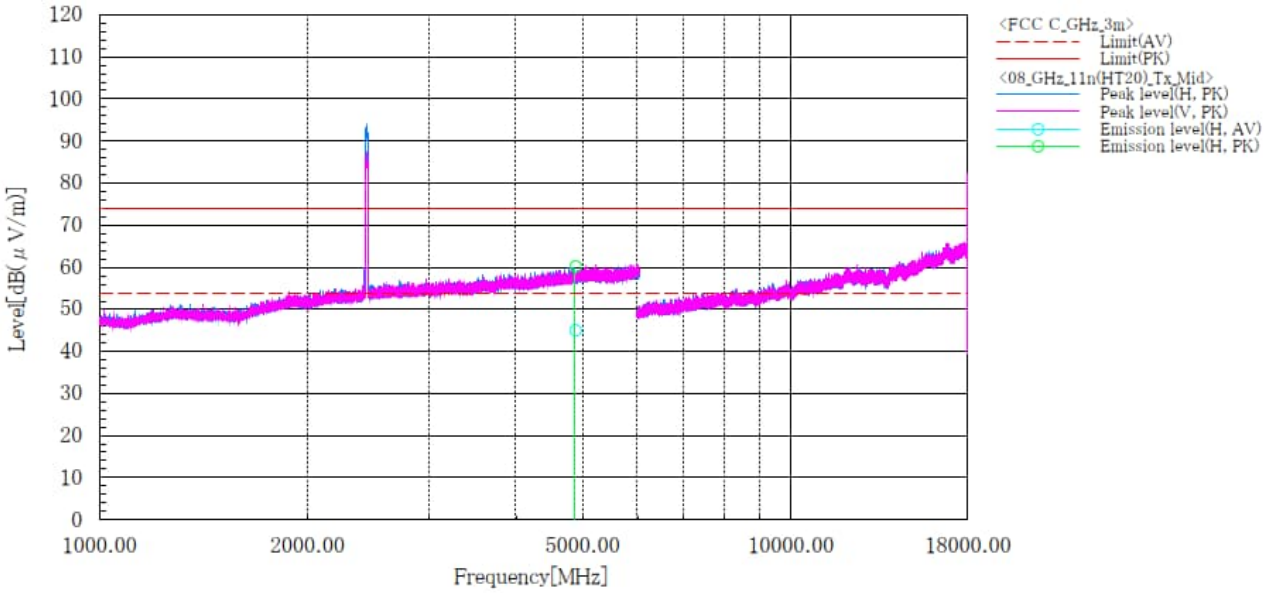

Final Result

| No. | Frequency [MHz] | Pol | Reading AV [dB(μV)] | Reading PK [dB(μV)] | c.f [dB(1/m)] | Result AV [dB(μV/m)] | Result PK [dB(μV/m)] | Limit AV [dB(μV/m)] | Limit PK [dB(μV/m)] | Margin AV [dB] | Margin PK [dB] | Height [cm] | Angle [deg] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4824.000 | H | 32.1 | 47.6 | 12.9 | 45.0 | 60.5 | 54.0 | 74.0 | 9.0 | 13.5 | 170.0 | 162.0 |

Note:
1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
2. No emission were detected in frequency range 18GHz to 25GHz at the 3 meters distance.

**EB1190EM [11n(HT20)]**
**Channel Middle**
**ABOVE 1GHz**

| | | | |
|---|---|---|---|
| Company name | : KYOCERA Corporation | Sheet No. | : 08 |
| EUT | : Mobile Phone | Standard | : FCC Part.15 subpart C |
| Model No. | : EB1190EM | Operator | : C.Kanno |
| Serial No. | : N/A | Temp,Hum,Atm | : 21.6 [° C], 36.2 [%] |
| Test mode | : WLAN 11n(HT20)_Tx | Note1 | : CH:6 (2437MHz) |



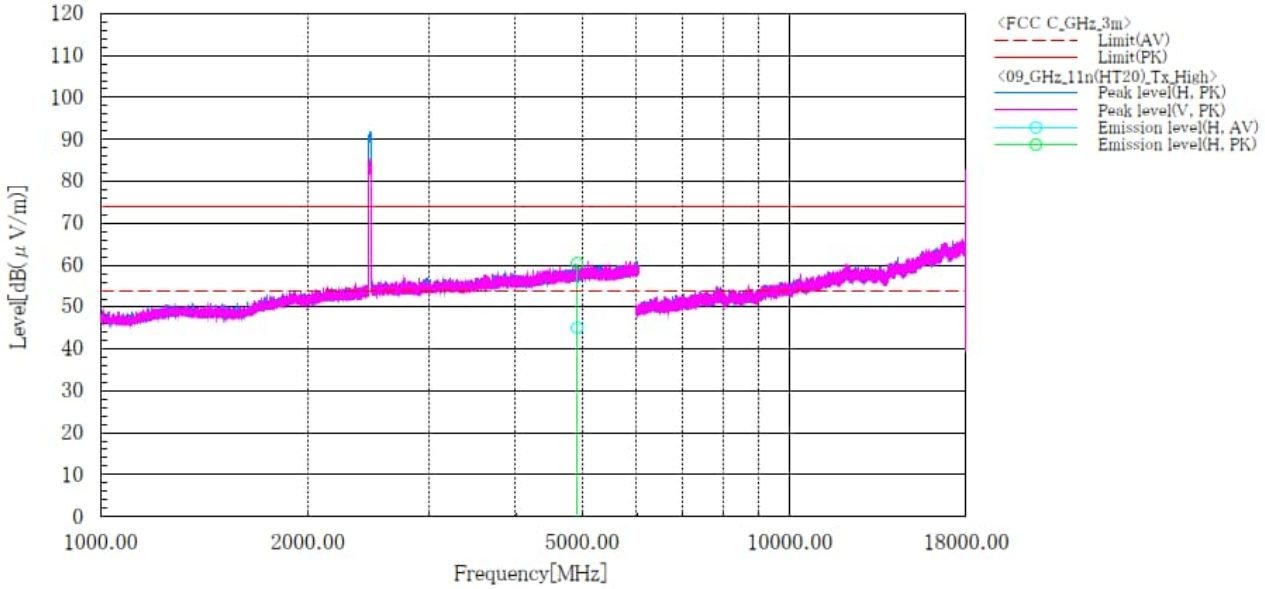

Final Result

| No. | Frequency [MHz] | Pol | Reading AV [dB(μV)] | Reading PK [dB(μV)] | c.f [dB(1/m)] | Result AV [dB(μV/m)] | Result PK [dB(μV/m)] | Limit AV [dB(μV/m)] | Limit PK [dB(μV/m)] | Margin AV [dB] | Margin PK [dB] | Height [cm] | Angle [deg] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4874.000 | H | 32.0 | 47.3 | 13.0 | 45.0 | 60.3 | 54.0 | 74.0 | 9.0 | 13.7 | 163.0 | 237.0 |

Note:
1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
2. No emission were detected in frequency range 18GHz to 25GHz at the 3 meters distance.

**EB1190EM [11n(HT20)]**
**Channel High**
**ABOVE 1GHz**

| | | | |
|---|---|---|---|
| Company name | : KYOCERA Corporation | Sheet No. | : 09 |
| EUT | : Mobile Phone | Standard | : FCC Part.15 subpart C |
| Model No. | : EB1190EM | Operator | : C.Kanno |
| Serial No. | : N/A | Temp,Hum,Atm | : 21.6 [° C], 36.2 [%] |
| Test mode | : WLAN 11n(HT20)_Tx | Note1 | : CH:11 (2462MHz) |



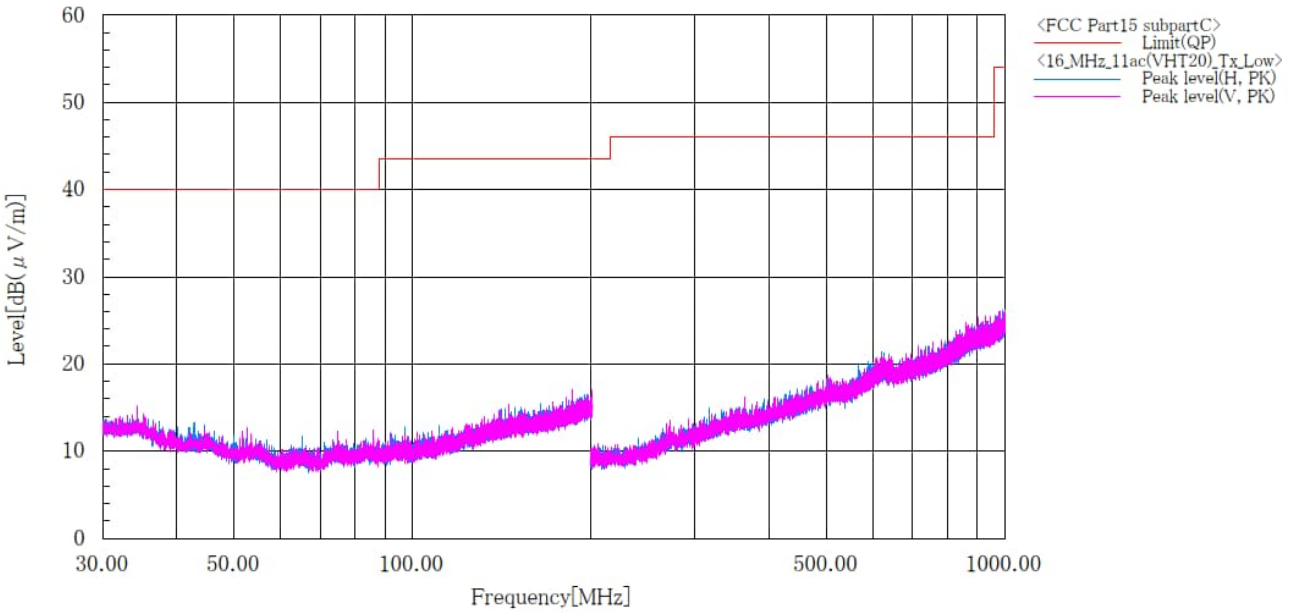

Final Result

| No. | Frequency [MHz] | Pol | Reading AV [dB(μV)] | Reading PK [dB(μV)] | c.f [dB(1/m)] | Result AV [dB(μV/m)] | Result PK [dB(μV/m)] | Limit AV [dB(μV/m)] | Limit PK [dB(μV/m)] | Margin AV [dB] | Margin PK [dB] | Height [cm] | Angle [deg] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4924.000 | H | 32.0 | 47.3 | 13.1 | 45.1 | 60.4 | 54.0 | 74.0 | 8.9 | 13.6 | 169.0 | 293.0 |

Note:
1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
2. No emission were detected in frequency range 18GHz to 25GHz at the 3 meters distance.

**EB1190EM [11ac(VHT20)]**
**Channel Low**
**BELOW 1GHz**

| | | | |
|---|---|---|---|
| Company name | : KYOCERA Corporation | Sheet No. | : 16 |
| EUT | : Mobile Phone | Standard | : FCC Part15 subpart C |
| Model No. | : PC9699 | Operator | : T.Watanabe |
| Serial No. | : N/A | Temp,Hum,Atm | : 20.1 [° C], 58.3 [%] |
| Test mode | : WLAN 11ac(VHT20)_Tx | Note1 | : CH:1 (2412MHz) |

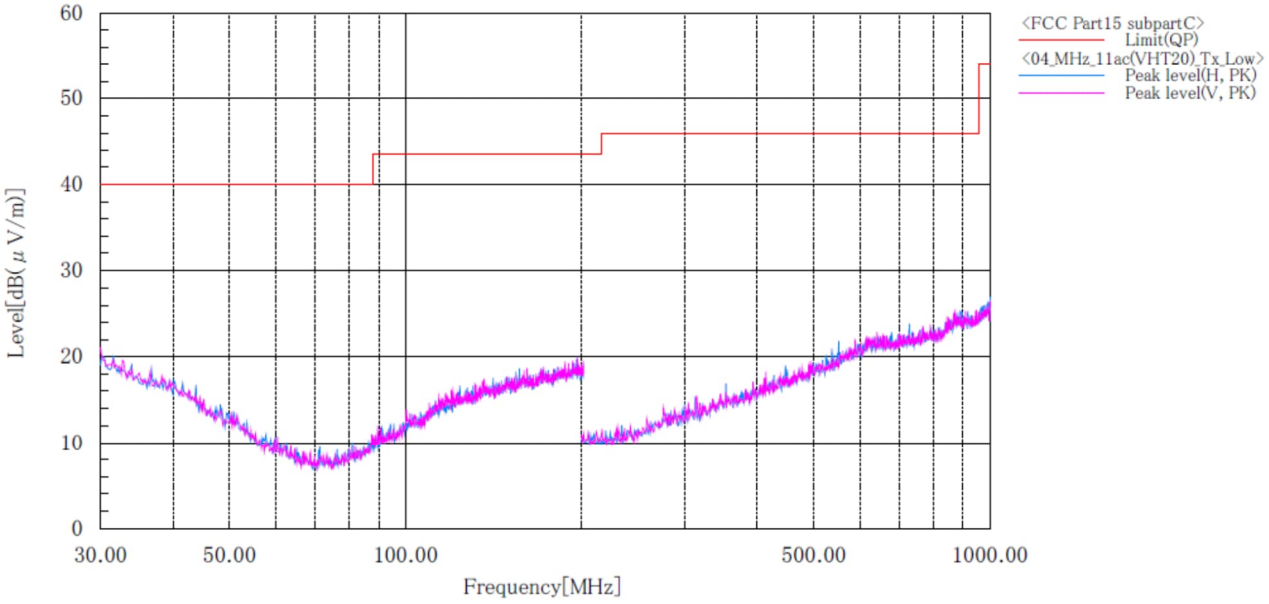



Final Result

Note:
1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
2. No emission were detected in frequency range 9kHz to 1000MHz at the 3 meters distance.

**EB1207 [11ac(VHT20)]**
**Channel Low**
**BELOW 1GHz**

| | | | |
|---|---|---|---|
| Company name | : KYOCERA Corporation | Sheet No. | : 04 |
| EUT | : Mobile Phone | Standard | : FCC Part15 subpart C |
| Model No. | : EB1207 | Operator | : T.Seino |
| Serial No. | : N/A | Temp,Hum,Atm | : 21.9 [° C], 58.8 [%] |
| Test mode | : WLAN_11ac(VHT20)_Tx_CH:Low | Note1 | : |



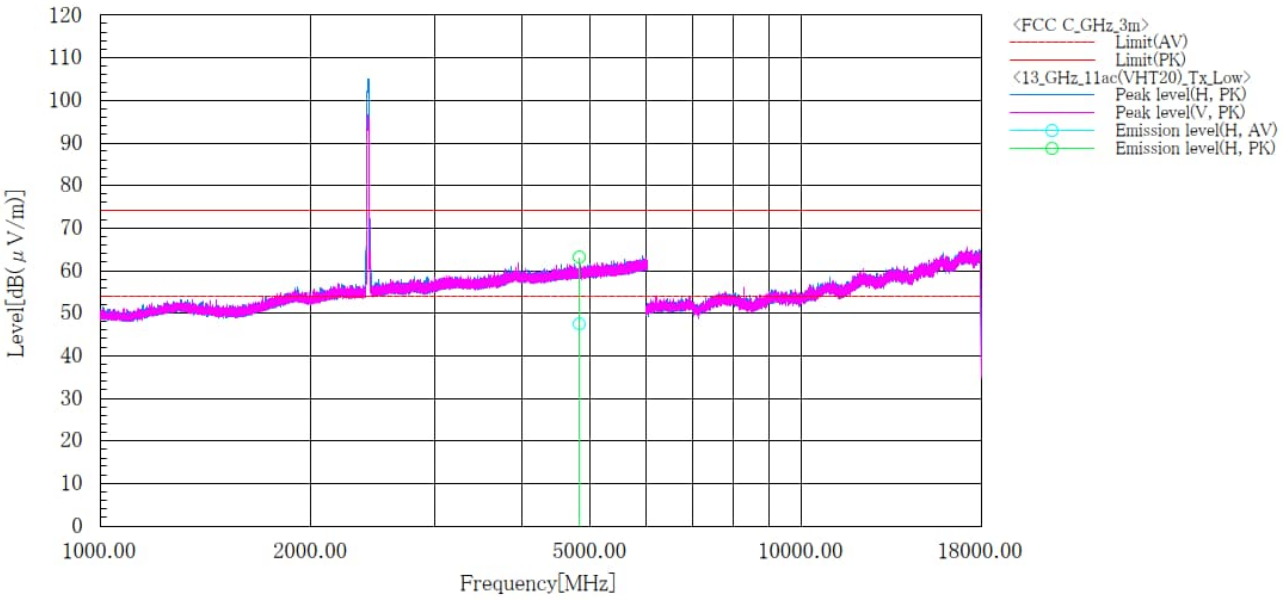

Final Result

Note:
1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
2. No emission were detected in frequency range 9kHz to 1000MHz at the 3 meters distance.

Comparison of the charts of EB1190EM and EB1207 showed that the difference in test results was less than 3 dB.

**EB1190EM [11ac(VHT20)]**
**Channel Low**
**ABOVE 1GHz**

| | | | |
|---|---|---|---|
| Company name | : KYOCERA Corporation | Sheet No. | : 13 |
| EUT | : Mobile Phone | Standard | : FCC Part.15 subpart C |
| Model No. | : PC9699 | Operator | : T.Watanabe |
| Serial No. | : N/A | Temp,Hum,Atm | : 20.1 [° C], 58.3 [%] |
| Test mode | : WLAN 11ac(VHT20)_Tx | Note1 | : CH:1 (2412MHz) |



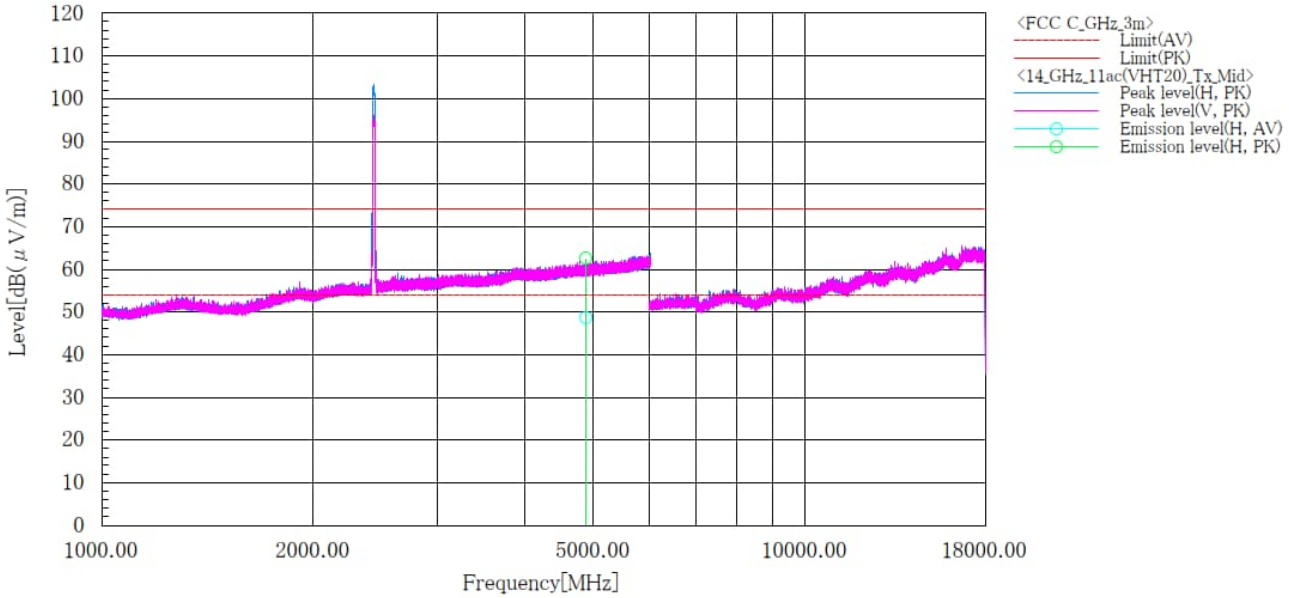

Final Result

| No. | Frequency [MHz] | Pol | Reading AV [dB(μV)] | Reading PK [dB(μV)] | c.f [dB(1/m)] | Result AV [dB(μV/m)] | Result PK [dB(μV/m)] | Limit AV [dB(μV/m)] | Limit PK [dB(μV/m)] | Margin AV [dB] | Margin PK [dB] | Height [cm] | Angle [deg] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4824.000 | H | 32.5 | 48.2 | 14.9 | 47.4 | 63.1 | 54.0 | 74.0 | 6.6 | 10.9 | 146.0 | 199.0 |

Note:
1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
2. No emission were detected in frequency range 18GHz to 25GHz at the 3 meters distance.

**EB1190EM [11ac(VHT20)]**
**Channel Middle**
**ABOVE 1GHz**

| | | | |
|---|---|---|---|
| Company name | : KYOCERA Corporation | Sheet No. | : 14 |
| EUT | : Mobile Phone | Standard | : FCC Part.15 subpart C |
| Model No. | : PC9699 | Operator | : T.Watanabe |
| Serial No. | : N/A | Temp,Hum,Atm | : 20.1 [° C], 58.3 [%] |
| Test mode | : WLAN 11ac(VHT20)_Tx | Note1 | : CH:6 (2437MHz) |



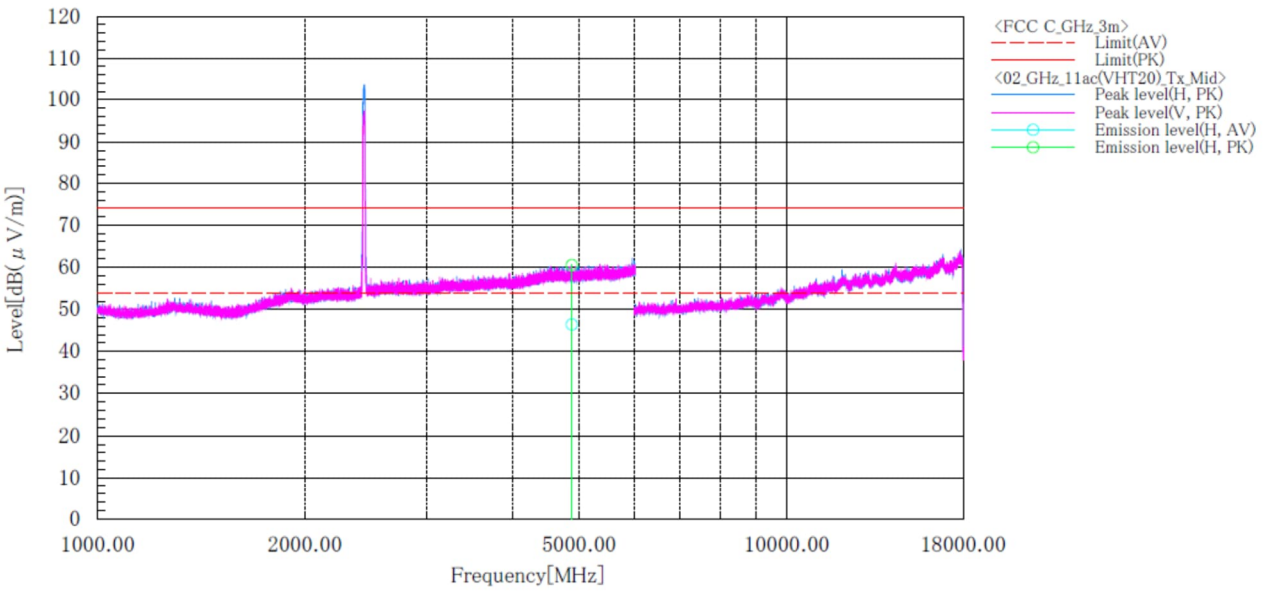

Final Result

| No. | Frequency [MHz] | Pol | Reading AV [dB(μV)] | Reading PK [dB(μV)] | c.f [dB(1/m)] | Result AV [dB(μV/m)] | Result PK [dB(μV/m)] | Limit AV [dB(μV/m)] | Limit PK [dB(μV/m)] | Margin AV [dB] | Margin PK [dB] | Height [cm] | Angle [deg] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4874.000 | H | 33.7 | 47.5 | 15.0 | 48.7 | 62.5 | 54.0 | 74.0 | 5.3 | 11.5 | 142.0 | 262.0 |

Note:
1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
2. No emission were detected in frequency range 18GHz to 25GHz at the 3 meters distance.

**EB1207 [11ac(VHT20)]**
**Channel Middle**
**ABOVE 1GHz**

| | | | |
|---|---|---|---|
| Company name | : KYOCERA Corporation | Sheet No. | : 02 |
| EUT | : Mobile Phone | Standard | : FCC Part.15 subpart C |
| Model No. | : EB1207 | Operator | : T.Seino |
| Serial No. | : N/A | Temp,Hum,Atm | : 21.1 [° C], 59.4 [%] |
| Test mode | : WLAN 11ac(VHT20)_Tx | Note1 | : CH:6 (2437MHz) |




Final Result

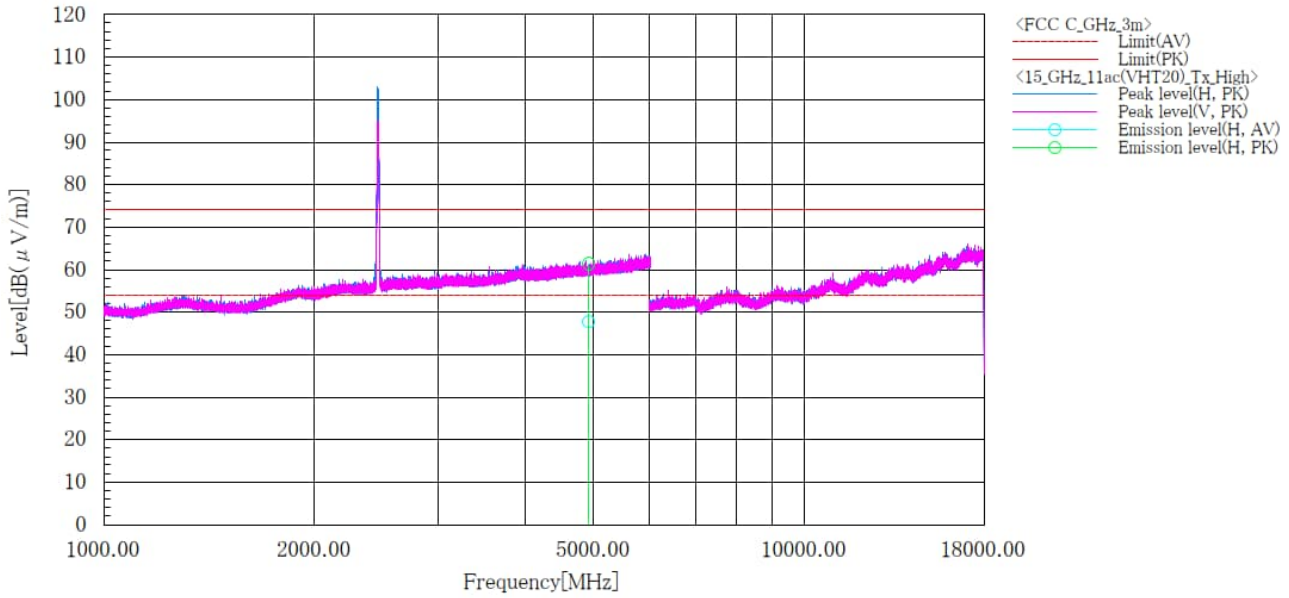
| No. | Frequency [MHz] | Pol | Reading AV [dB(μV)] | Reading PK [dB(μV)] | c.f [dB(1/m)] | Result AV [dB(μV/m)] | Result PK [dB(μV/m)] | Limit AV [dB(μV/m)] | Limit PK [dB(μV/m)] | Margin AV [dB] | Margin PK [dB] | Height [cm] | Angle [deg] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4874.000 | H | 33.4 | 47.6 | 13.0 | 46.4 | 60.6 | 54.0 | 74.0 | 7.6 | 13.4 | 142.0 | 161.0 |

Note:
1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
2. No emission were detected in frequency range 18GHz to 25GHz at the 3 meters distance.

Comparison of the charts of EB1190EM and EB1207 showed that the difference in test results was less than 3 dB.

**EB1190EM [11ac(VHT20)]**
**Channel High**
**ABOVE 1GHz**

| | | | |
|---|---|---|---|
| Company name | : KYOCERA Corporation | Sheet No. | : 15 |
| EUT | : Mobile Phone | Standard | : FCC Part.15 subpart C |
| Model No. | : PC9699 | Operator | : T.Watanabe |
| Serial No. | : N/A | Temp,Hum,Atm | : 20.1 [° C], 58.3 [%] |
| Test mode | : WLAN 11ac(VHT20)_Tx | Note1 | : CH:11 (2462MHz) |




Final Result

| No. | Frequency [MHz] | Pol | Reading AV [dB(μV)] | Reading PK [dB(μV)] | c.f [dB(1/m)] | Result AV [dB(μV/m)] | Result PK [dB(μV/m)] | Limit AV [dB(μV/m)] | Limit PK [dB(μV/m)] | Margin AV [dB] | Margin PK [dB] | Height [cm] | Angle [deg] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4924.000 | H | 32.6 | 46.3 | 15.1 | 47.7 | 61.4 | 54.0 | 74.0 | 6.3 | 12.6 | 112.0 | 258.0 |

Note:
1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
2. No emission were detected in frequency range 18GHz to 25GHz at the 3 meters distance.

## 4.6 Restricted Band of Operation

### 4.6.1 Measurement procedure

**[FCC 15.247(d), 15.205, 15.209, KDB 558074 D01 v05r02, Section 8.6]**

Test was applied by following conditions.

| | | |
|---|---|---|
| Test method | : | ANSI C63.10 |
| Test place | : | 3m Semi-anechoic chamber, 10m Semi-anechoic chamber No.1 |
| EUT was placed on | : | Styrofoam table / (W) 1.0 × (D) 0.8 × (H) 0.8 m (below 1 GHz)<br>Styrofoam table / (W) 0.6 × (D) 0.6 ×(H) 1.5 m (above 1 GHz) |
| Antenna distance | : | 3m |
| Spectrum analyzer setting | | |
| - Peak | : | RBW=1 MHz, VBW=3 MHz, Span=Arbitrary setting, Sweep=auto |
| - Average | : | 11b: RBW=1 MHz, VBW=3 kHz, Span= Arbitrary setting, Sweep=auto<br>11g, 11n, 11ac : RBW=1 MHz, VBW=1 kHz, Span= Arbitrary setting, Sweep=auto<br>Display mode=Linear |

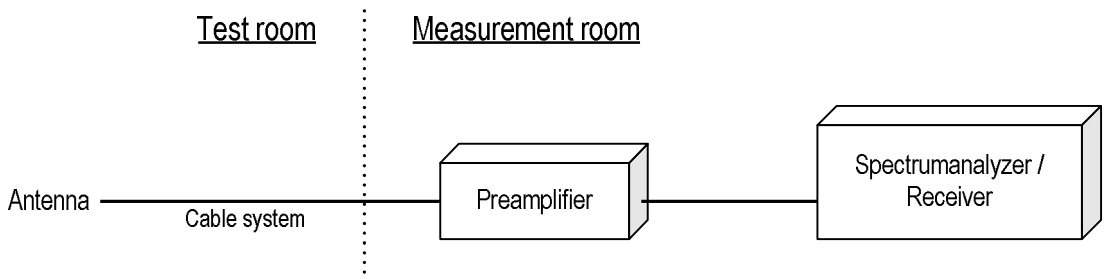
Average Measurement Setting [VBW]

| mode | Duty Cycle (%) | Ton [μs] | Toff [μs] | 1/Ton (kHz) | Determined VBW Setting |
|---|---|---|---|---|---|
| 11b | 97.16 | 0.992 | 0.029 | 1.008 | 3kHz |
| 11g | 97.48 | 1.391 | 0.036 | 0.719 | 1kHz |
| 11n(HT20) | 97.20 | 1.286 | 0.037 | 0.778 | 1kHz |
| 11ac(VHT20) | 97.33 | 1.312 | 0.036 | 0.762 | 1kHz |

Although these tests were performed other than open area test site, adequate comparison measurements were confirmed against 30 m open are test site.
Therefore, sufficient tests were made to demonstrate that the alternative site produces results that correlate with the ones of tests made in an open field based on KDB 937606.

Radiated emission measurements are performed at 3m distance with the broadband antenna (Double ridged guide antenna). The antenna is positioned both the horizontal and vertical planes of polarization and height is varied 1m to 4m and stopped at height producing the maximum emission.
The EUT is Placed on a turntable, which is 0.8m/1.5m above ground plane. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level. The test results represent the worst-case emission for each emission with manipulating the EUT, support equipment, interconnecting cables and varying the mode of operation. Sufficient time for the EUT, support equipment, and test equipment are allowed for them to warm up to their normal operating condition.

- Test configuration



### 4.6.2 Limit

Emission at the boundary of the restricted band provided by 15.205 shall be lower than 15.209 limit.

### 4.6.3 Measurement Result

**[IEEE802.11b、IEEE802.11g、IEEE802.11n (HT20)]**

| Channel | Frequency [MHz] | Results Chart | Result |
|---|---|---|---|
| Low | 2412 | See the Trace Data | Pass |
| High | 2462 | See the Trace Data | Pass |

### 4.6.4 Test data

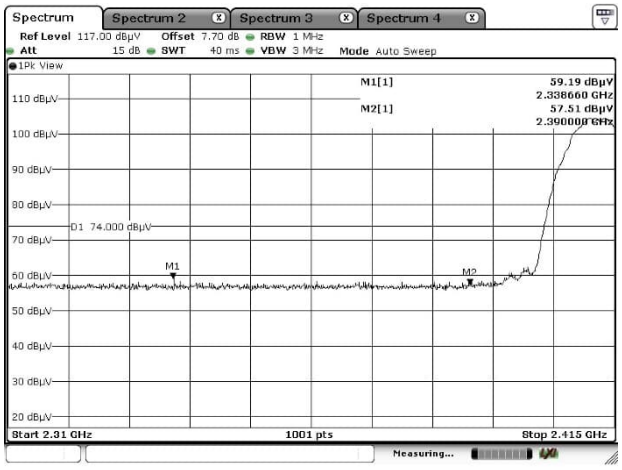
Date : 9-May-2024
Temperature : 22.1 [˚C]
Humidity : 32.1 [%] Test engineer : Chiaki Kanno
Test place : 3m Semi-anechoic chamber

Date : 29-June-2024
Temperature : 20.1 [˚C]
Humidity : 58.3 [%] Test engineer : Taiki Watanabe
Test place : 10m Semi-anechoic chamber

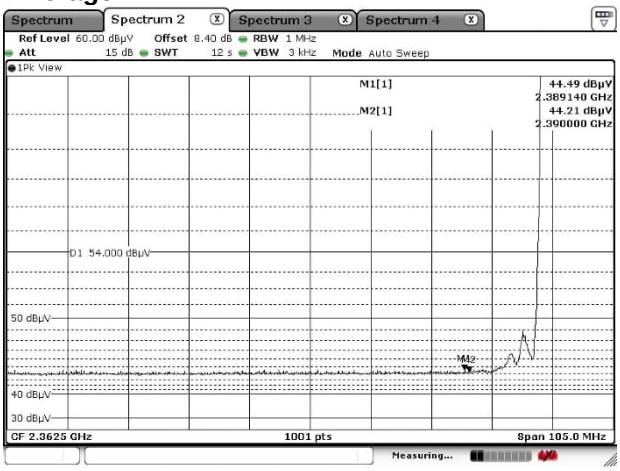
Date : 8-August-2024
Temperature : 21.1 [˚C]
Humidity : 59.4 [%] Test engineer : Tadahiro Seino
Test place : 3m Semi-anechoic chamber

**EB1190EM [IEEE802.11b]**

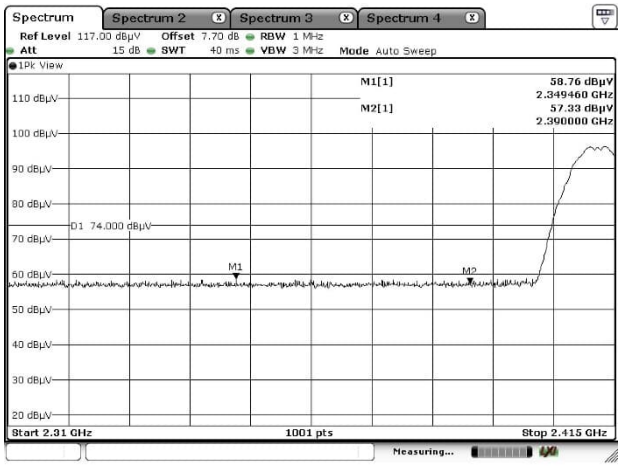
**Channel Low**
**Horizontal**
**Peak**



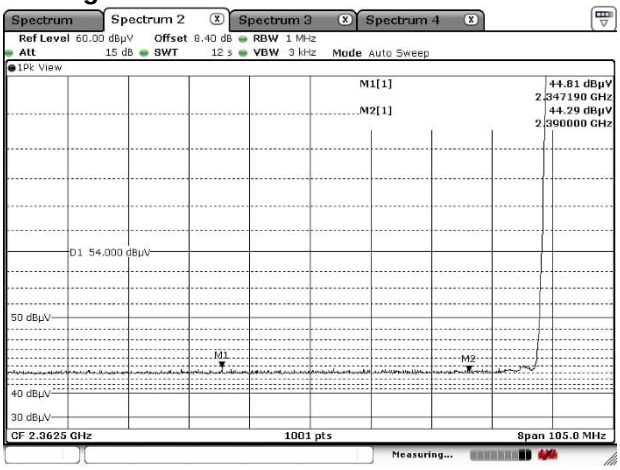

**Average**




**Vertical**
**Peak**

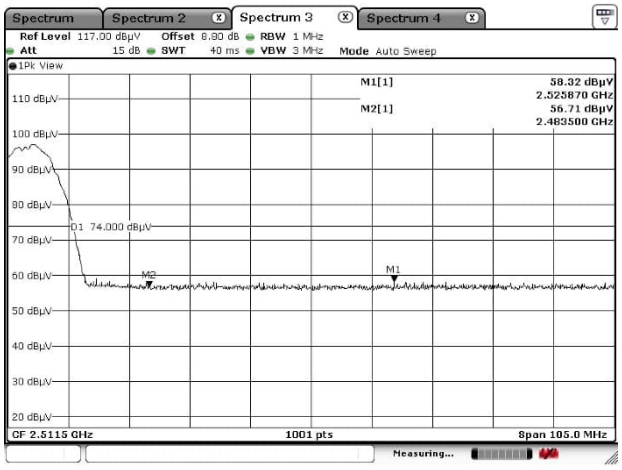



**Average**

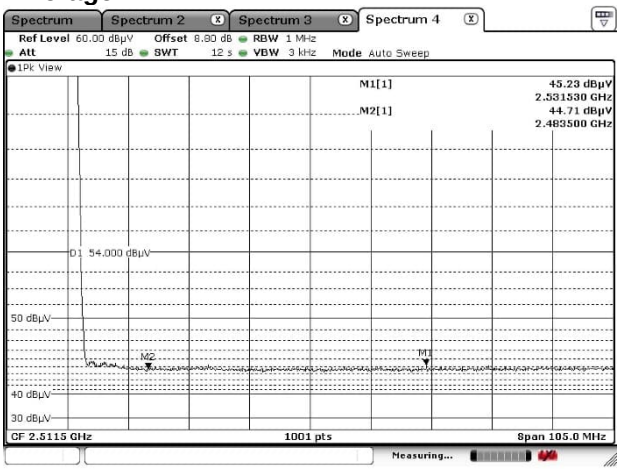


## EB1190EM [IEEE802.11b]

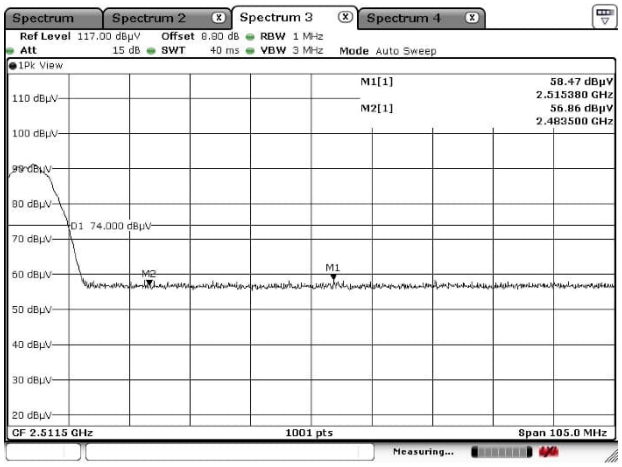
### Channel High
### Horizontal
### Peak



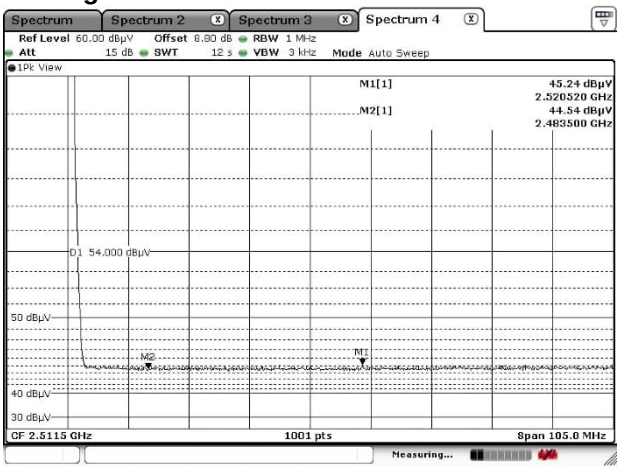

### Average




### Vertical
### Peak

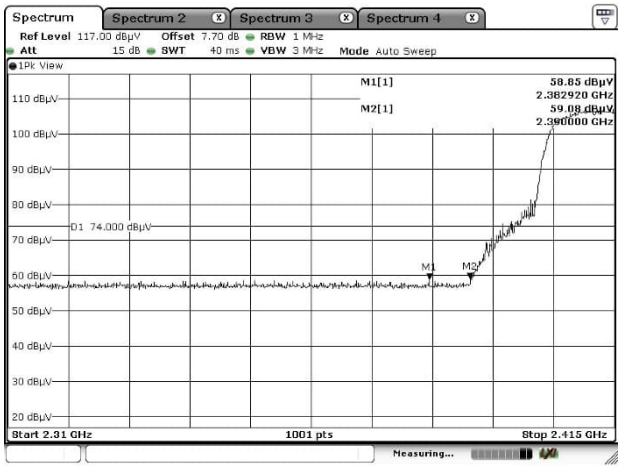



### Average

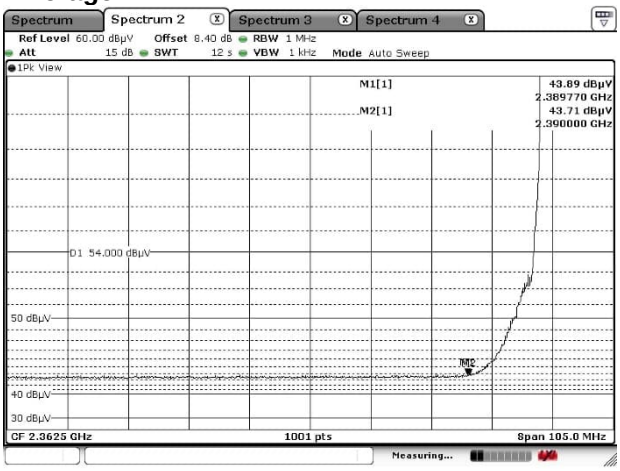


## EB1190EM [IEEE802.11g]

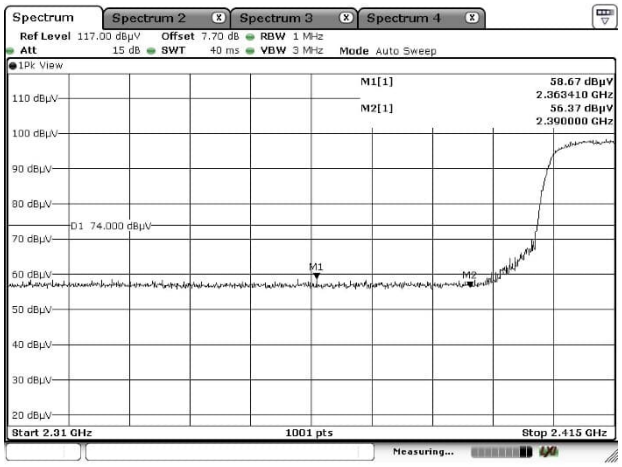
### Channel Low
### Horizontal
### Peak



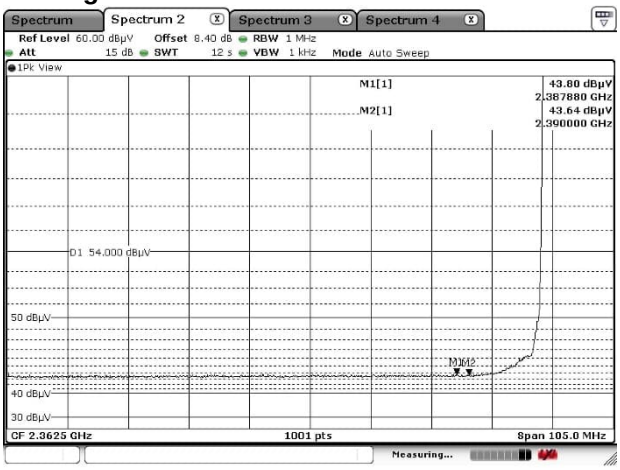

### Average




### Vertical
### Peak

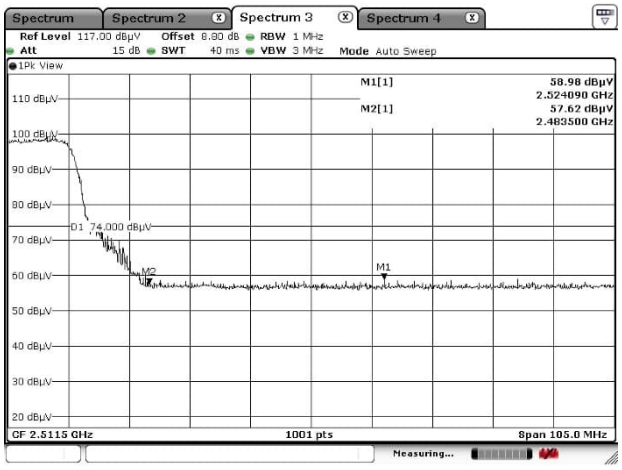



### Average

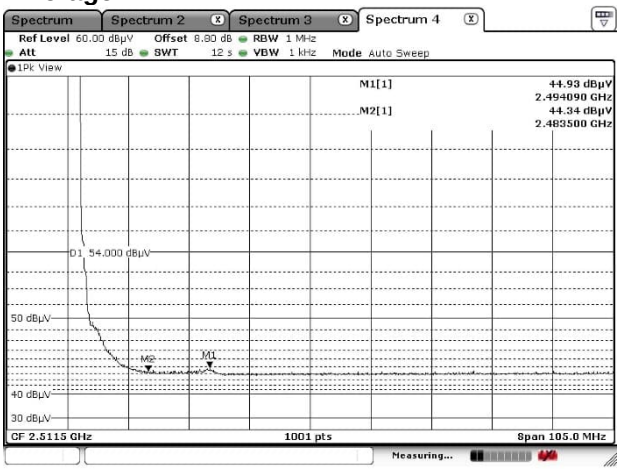


**EB1190EM [IEEE802.11g]**

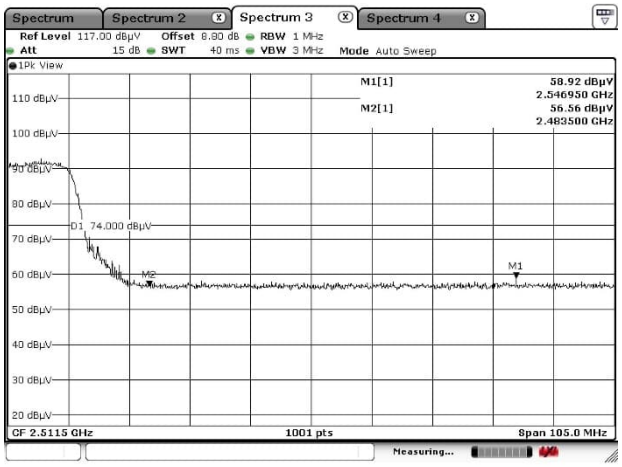
**Channel High**
**Horizontal**
**Peak**



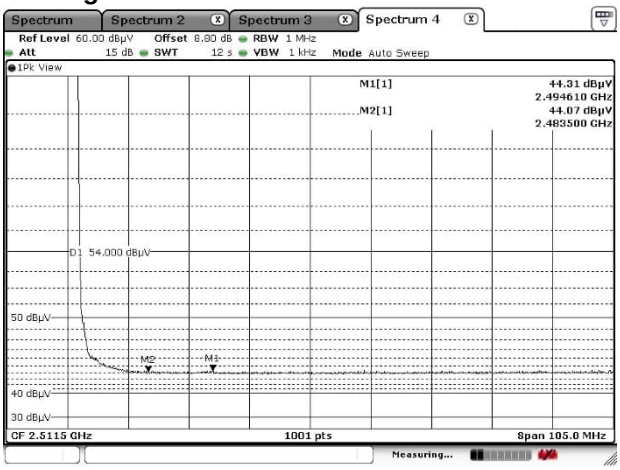

**Average**




**Vertical**
**Peak**

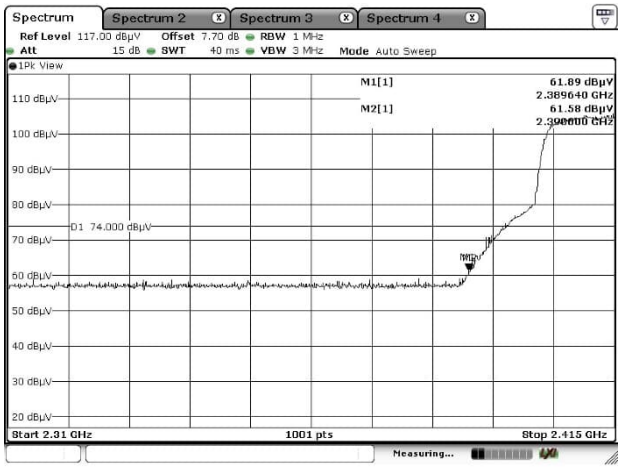



**Average**

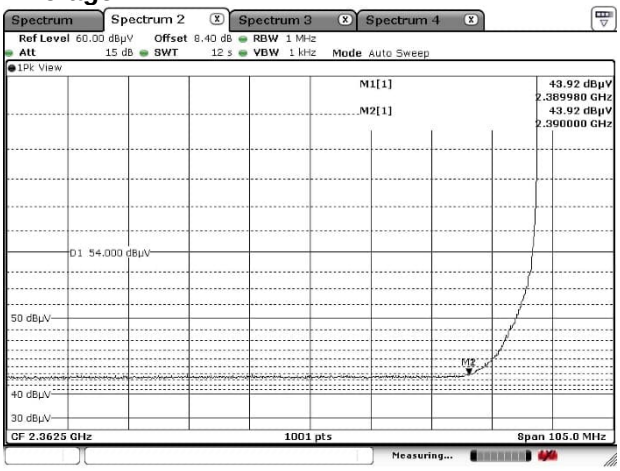


## EB1190EM [IEEE802.11n (HT20)]

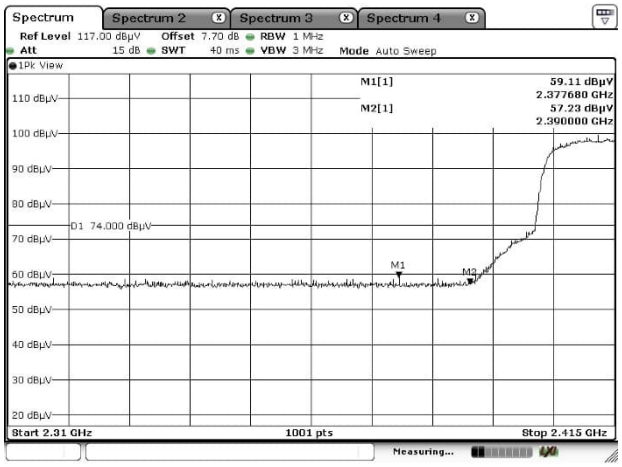
### Channel Low
### Horizontal
### Peak



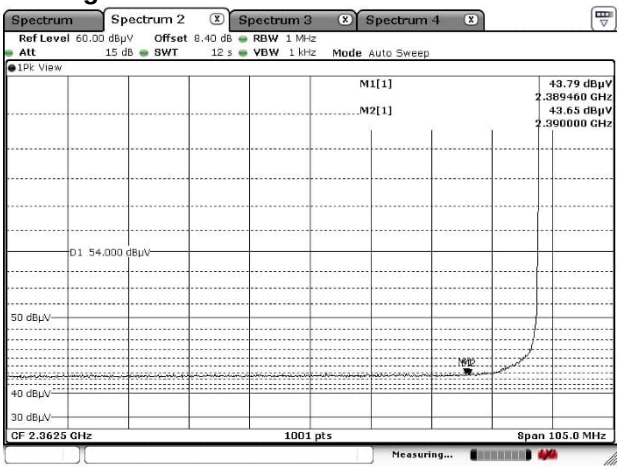

### Average




### Vertical
### Peak

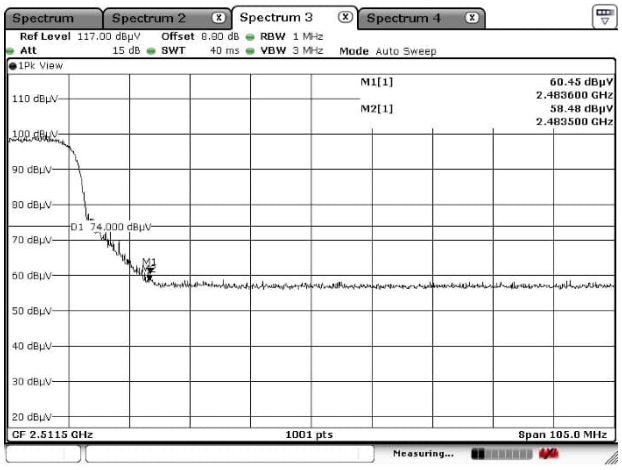



### Average

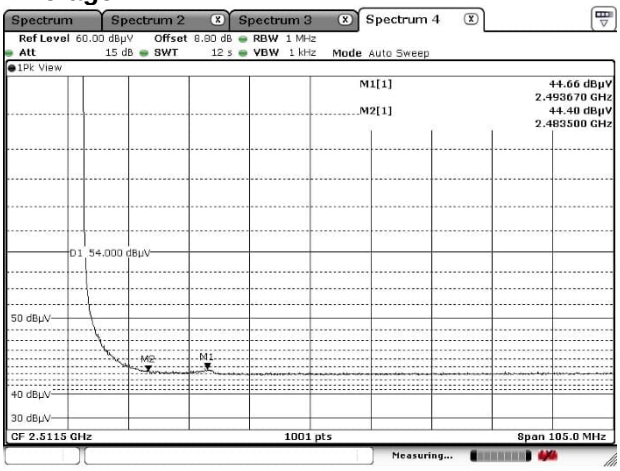


## EB1190EM [IEEE802.11n (HT20)]

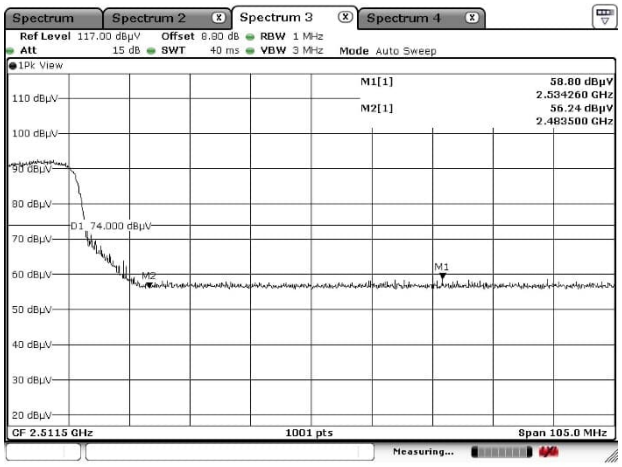
### Channel High
### Horizontal
### Peak

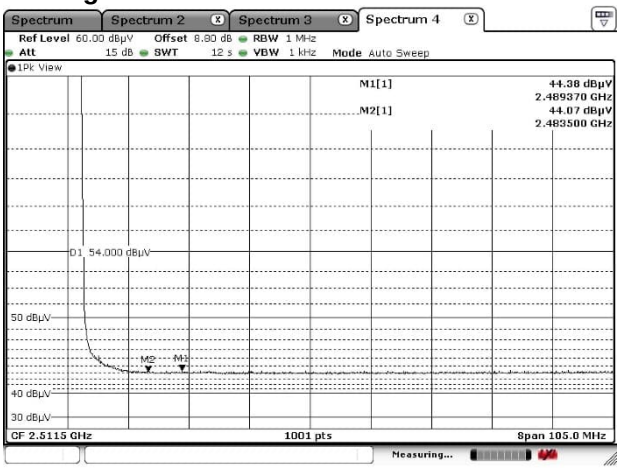



### Average




### Vertical
### Peak




### Average