# 2.4 GHz WLAN Test Report

## FCC ID: R7RDMC2313

**This report concerns (check one) :** ☒ **Original Grant** ☐ **Class II Change**

| | | |
|---|---|---|
| **Issued Date** | : | Dec. 07, 2012 |
| **Project No.** | : | 1211074 |
| **Equipment** | : | WiFi Microscope |
| **Model Name** | : | DMC-2313 |
| **Applicant** | : | VAST TECHNOLOGIES INC. |
| **Address** | : | 7F, NO. 80, SEC. 1, KUANG FU RD.SANCHUNG, TAIPEI, TAIWAN, R.O.C. |

**Tested by:** Neutron Engineering Inc. EMC Laboratory
**Date of Receipt:** Nov. 19, 2012
**Date of Test:** Nov. 19, 2012 ~ Nov. 30, 2012

**Testing Engineer :** Rush Kao
(Rush Kao)

**Technical Manager :** Jeff Yang
(Jeff Yang)

**Authorized Signatory :** Andy Chiu
(Andy Chiu)

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Testing Laboratory
0659

## Declaration

**Neutron** represents to the client that testing is done in accordance with standard procedures as applicable and that test instruments used has been calibrated with the standards traceable to National Measurement Laboratory (**NML**) of **R.O.C**., or National Institute of Standards and Technology (**NIST**) of **U.S.A.**

**Neutron**'s reports apply only to the specific samples tested under conditions. It is manufacture's responsibility to ensure that additional production units of this model are manufactured with the identical electrical and mechanical components. **Neutron** shall have no liability for any declarations, inferences or generalizations drawn by the client or others from **Neutron** issued reports.

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**Neutron**'s laboratory quality assurance procedures are in compliance with the **ISO Guide 17025** requirements, and accredited by the conformity assessment authorities listed in this test report.

## Limitation

For the use of the authority's logo is limited unless the Test Standard(s)/Scope(s)/Item(s) mentioned in this test report is (are) included in the conformity assessment authorities acceptance respective.

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# Table of Contents

## REPORT ISSUED HISTORY

| Revised Version No. | Description | Issued Date |
|---|---|---|
| - | Initial Issue. | Dec. 07, 2012 |

## 1 CERTIFICATION

Equipment : WiFi Microscope
Model Name : DMC-2313
Applicant : VAST TECHNOLOGIES INC.
Date of Test : Nov. 19, 2012 ~ Nov. 30, 2012
Standards : FCC Part 15, Subpart C: 2010
ANSI C63.4: 2009

The above equipment has been tested and found compliance with the requirement of the relative standards by Neutron Engineering Inc. EMC Laboratory.
The test data, data evaluation, and equipment configuration contained in our test report (Ref No. NEI-FCCP-1-1211074) were obtained utilizing the test procedures, test instruments, test sites that has been accredited by the Authority of NVLAP and TAF according to the ISO-17025 quality assessment standard and technical standard(s).

## 2. SUMMARY OF TEST RESULTS

| Standard Clause | Test Item | Result |
|---|---|---|
| 15.207 | Conducted Emission | **N/A** |
| 15.247 (c) | Antenna conducted Spurious Emission | **PASS** |
| 15.247 (a)(2) | 6dB Bandwidth | **PASS** |
| 15.247 (b) | Maximum Peak Conducted Output Power | **PASS** |
| 15.247 (c) | Radiated Spurious Emission | **PASS** |
| 15.247 (d)(e) | Power Spectral Density | **PASS** |
| 15.205 | Restricted Bands | **PASS** |
| 15.203 | Antenna Requirement | **PASS** |
| 1.1307<br>1.1310<br>2.1091<br>2.1093 | RF Exposure Compliance | **PASS** |

NOTE:

1. **N/A**: denotes test is not applicable in this Test Report
2. Portable device; SAR report is required.

## 2.1 TEST FACILITY

The test facilities used to collect the test data in this report:

**Radiated emission Test (Below 1 GHz):**

**CB08:** (FCC RN: 614388; FCC DN: TW1054; IC Assigned Code: 4428C-1)
1F., No. 61, Ln. 77, Sing-ai Rd., Neihu Dist., Taipei City 114, Taiwan (R.O.C.)

**Radiated emission Test (Above 1 GHz):**

**CB08:** (VCCI RN: G-91; FCC RN: 614388; FCC DN: TW1054; IC Assigned Code: 4428C-1)
1F., No. 61, Ln. 77, Sing-ai Rd., Neihu Dist., Taipei City 114, Taiwan (R.O.C.)

## 2.2 MEASUREMENT UNCERTAINTY

**The measurement uncertainty is not specified by FCC rules and for reference only.**

The reported uncertainty of measurement **y** ± **U**，where expended uncertainty **U** is based on a standard uncertainty multiplied by a coverage factor of **k=2**，providing a level of confidence of approximately **95**%.

The measurement instrumentation uncertainty considerations contained in CISPR 16-4-2.

A. Radiated emission test:

| Test Site | Item | Measurement Frequency Range | | Uncertainty | NOTE |
|---|---|---|---|---|---|
| CB08 | Radiated emission at 3m | Horizontal Polarization | 30 - 200MHz | 3.35 dB | |
| | | | 200 - 1000MHz | 3.11 dB | |
| | | | 1 - 18GHz | 3.97 dB | |
| | | | 18 - 40GHz | 4.01 dB | |
| | | Vertical Polarization | 30 - 200MHz | 3.22 dB | |
| | | | 200 - 1000MHz | 3.24 dB | |
| | | | 1 - 18GHz | 4.05 dB | |
| | | | 18 - 40GHz | 4.04 dB | |

Our calculated Measurement Instrumentation Uncertainty is shown in the tables above. These are our $U_{lab}$ values in CISPR 16-4-2 terminology.

Since Table 1 of CISPR 16-4-2 has values of measurement instrumentation uncertainty, called $U_{CISPR}$, as follows:

Conducted Disturbance (mains port) – 150 kHz – 30 MHz : 3.6 dB

Radiated Disturbance (electric field strength on an open area test site or alternative test site) – 30 MHz – 1000 MHz : 5.2 dB

It can be seen that our $U_{lab}$ values are smaller than $U_{CISPR}$.

# 3 GENERAL INFORMATION

## 3.1 GENERAL DESCRIPTION OF EUT

<table>
<tr><td>Equipment</td><td>WiFi Microscope</td></tr>
<tr><td>Model Name</td><td>DMC-2313</td></tr>
<tr><td>OEM Brand/Model Name</td><td>N/A</td></tr>
<tr><td>Model Difference</td><td>N/A</td></tr>
<tr><td>Product Description</td><td>The EUT is a WiFi Microscope.
<table>
<tr><td>Operation Frequency</td><td>2412~2462 MHz</td></tr>
<tr><td>Modulation Type</td><td>802.11b: CCK, QPSK, BPSK<br>802.11g/n: OFDM</td></tr>
<tr><td>Bit Rate of Transmitter</td><td>IEEE 802.11b: 1, 2, 5.5 and 11 Mbps<br>IEEE 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps<br>IEEE 802.11n(20M): MCS0-7, Support up to 72Mbps<br>IEEE 802.11n(40M): MCS0-7, Support up to 150Mbps<br>OFDM, Peak rate 150Mbps, Peak throughput 90Mbps.</td></tr>
<tr><td>Number Of Channel</td><td>Please refer to the Note 2.</td></tr>
<tr><td>Antenna Designation</td><td>Please refer to the Note 3.</td></tr>
<tr><td>Antenna Gain(Peak)</td><td>Please refer to the Note 3.</td></tr>
<tr><td>Maximum Peak Conducted Output Power:</td><td>2412-2462 MHz Band:<br>IEEE 802.11b: 0.71 dBm(Peak)/ -1.93 dBm(Avg)<br>IEEE 802.11g: 13.41 dBm(Peak)/ 2.08 dBm(Avg)<br>IEEE 802.11n(20 MHz): 12.55 dBm(Peak)/ 2.3 dBm(Avg)<br>2422-2452 MHz Band:<br>IEEE 802.11n(40 MHz): 10.17 dBm(Peak)/ -0.17 dBm(Avg)</td></tr>
</table>
Based on the application, features, or specification exhibited in User's Manual, the EUT is considered as an ITE/Computing Device. More details of EUT technical specification, please refer to the User's Manual.</td></tr>
<tr><td>Power Source</td><td>Battery supplied.</td></tr>
<tr><td>Power Rating</td><td>I/P: DC 4.5V</td></tr>
<tr><td>Connecting I/O Port(s)</td><td>Please refer to the User's Manual</td></tr>
<tr><td>Products Covered</td><td>N/A</td></tr>
<tr><td>EUT Modification(s)</td><td>N/A</td></tr>
</table>

NOTE:

1. For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.
2. Channel List:

| 2412-2462 MHz Band (IEEE 802.11b/g/n (20MHz)) | | | | | |
|---|---|---|---|---|---|
| Channel | Frequency (MHz) | Channel | Frequency (MHz) | Channel | Frequency (MHz) |
| 01 | 2412 | 05 | 2432 | 09 | 2452 |
| 02 | 2417 | 06 | 2437 | 10 | 2457 |
| 03 | 2422 | 07 | 2442 | 11 | 2462 |
| 04 | 2427 | 08 | 2447 | | |

| 2422-2452 MHz Band (IEEE 802.11n (40MHz)) | | | | | |
|---|---|---|---|---|---|
| Channel | Frequency (MHz) | Channel | Frequency (MHz) | Channel | Frequency (MHz) |
| 03 | 2422 | 06 | 2437 | 09 | 2452 |
| 04 | 2427 | 07 | 2442 | | |
| 05 | 2432 | 08 | 2447 | | |

3. Table for Filed Antenna

| Ant. | Brand | Model Name | Antenna Type | Connector | Gain (dBi) |
|---|---|---|---|---|---|
| 1 | N/A | N/A | WIRE | Solder | 2.79 |

### 3.2 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

| Test Items | IEEE | Mode | Data Rate | Channel | Note |
|---|---|---|---|---|---|
| Conducted Emission | 802.11b | DSSS | 1 Mbps | 06 | |
| Antenna conducted Spurious Emission | 802.11b | DSSS | 1 Mbps | 01/06/11 | |
| | 802.11g | OFDM | 6 Mbps | 01/06/11 | |
| | 802.11n (20 MHz) | BPSK | MCS8 | 01/06/11 | |
| | 802.11n (40 MHz) | BPSK | MCS8 | 03/06/09 | |
| 6 dB Bandwidth | 802.11b | DSSS | 1 Mbps | 01/06/11 | |
| | 802.11g | OFDM | 6 Mbps | 01/06/11 | |
| | 802.11n (20 MHz) | BPSK | MCS8 | 01/06/11 | |
| | 802.11n (40 MHz) | BPSK | MCS8 | 03/06/09 | |
| Maximum Peak Conducted Output Power | 802.11b | DSSS | 1 Mbps | 01/06/11 | |
| | 802.11g | OFDM | 6 Mbps | 01/06/11 | |
| | 802.11n (20 MHz) | BPSK | MCS8 | 01/06/11 | |
| | 802.11n (40 MHz) | BPSK | MCS8 | 03/06/09 | |
| Radiated Spurious Emission (30 MHz to 1 GHz) | 802.11n (20 MHz) | OFDM | MCS8 | 06 | |
| Radiated Spurious Emission (above 1 GHz) | 802.11b | DSSS | 1 Mbps | 01/06/11 | |
| | 802.11g | OFDM | 6 Mbps | 01/06/11 | |
| | 802.11n (20 MHz) | BPSK | MCS8 | 01/06/11 | |
| | 802.11n (40 MHz) | BPSK | MCS8 | 03/06/09 | |
| Restricted Bands | 802.11b | DSSS | 1 Mbps | 01/06/11 | |
| | 802.11g | OFDM | 6 Mbps | 01/06/11 | |
| | 802.11n (20 MHz) | BPSK | MCS8 | 01/06/11 | |
| | 802.11n (40 MHz) | BPSK | MCS8 | 03/06/09 | |
| Antenna Requirement | --- | | --- | --- | |
| RF Exposure Compliance | --- | | --- | --- | |

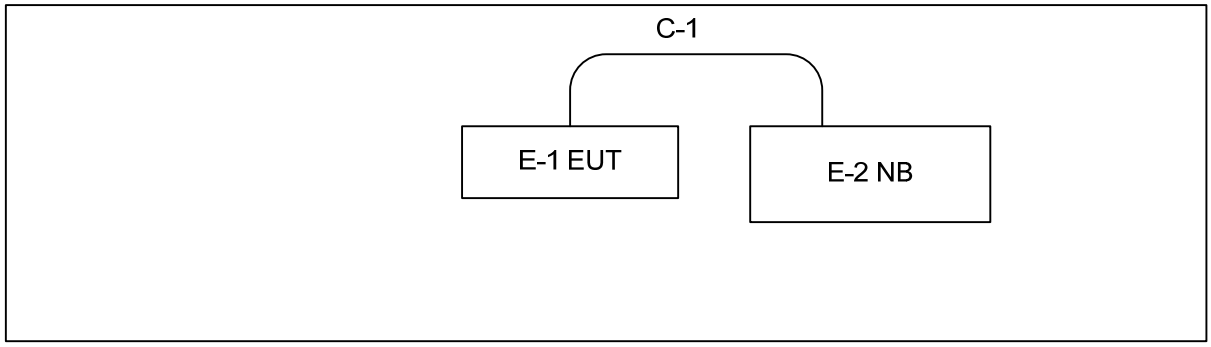
### 3.3 TABLE OF PARAMETERS OF TEXT SOFTWARE SETTING

During testing channel & power controlling software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product.

| IEEE | 802.11b | | | 802.11g | | |
|---|---|---|---|---|---|---|
| Test software Version | QA_RT3x7x_V1.5.6.6 | | | | | |
| Frequency | 2412 MHz | 2437 MHz | 2462 MHz | 2412 MHz | 2437 MHz | 2462 MHz |
| Parameter | 1 | 1 | 1 | 10 | 3 | 3 |

| | 2412-2462 MHz Band | | | 2422-2452 MHz Band | | |
|---|---|---|---|---|---|---|
| IEEE | 802.11n (20 MHz) | | | 802.11n (40 MHz) | | |
| Test software Version | QA_RT3x7x_V1.5.6.6 | | | | | |
| Frequency | 2412 MHz | 2437 MHz | 2462 MHz | 2422 MHz | 2437 MHz | 2452 MHz |
| Parameter | 10 | 10 | 3 | 10 | 10 | 3 |

### 3.4 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED



### 3.5 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

| Item | Equipment | Mfr/Brand | Model/Type No. | FCC ID | Series No. | Note |
|---|---|---|---|---|---|---|
| E-1 | WiFi Microscope | N/A | DMC-2313 | R7RDMC2313 | N/A | EUT |

| Item | Shielded Type | Ferrite Core | Length | Note |
|---|---|---|---|---|
| C-1 | YES | NO | 45cm | USB |

NOTE: The support equipment was authorized by Declaration of Conformity (DOC).

# 4 ANTENNA CONDUCTED SPURIOUS EMISSION

## 4.1 LIMIT

| Test Item | Frequency Range (MHz) | Limit |
|---|---|---|
| Antenna conducted Spurious Emission | 30-25000 | 20 dB less than the peak value of fundamental frequency |

## 4.2 MEASUREMENT INSTRUMENTS LIST

| Item | Kind of Equipment | Manufacturer | Type No. | Serial No. | Calibrated until |
|---|---|---|---|---|---|
| 1 | Spectrum Analyzer | R&S | FSP-40 | 100129 | Oct. 01, 2013 |

NOTE: **N/A**: denotes No Model Name, No Serial No. or No Calibration specified.

## 4.3 TEST PROCEDURES

a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
b. Spectrum Setting: RBW= 100KHz, VBW=100KHz, Sweep time = Auto.

## 4.4 TEST SETUP LAYOUT


## 4.5 DEVIATION FROM TEST STANDARD

No deviation

## 4.6 EUT OPERATING CONDITIONS

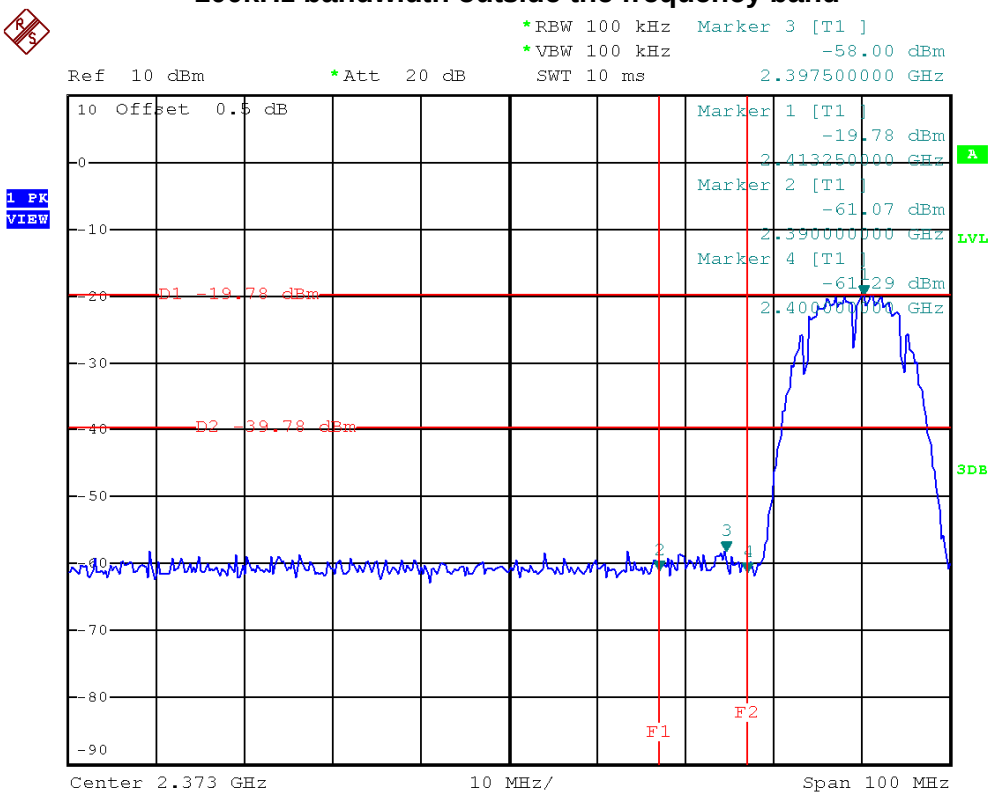
The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

## 4.7 TEST RESULTS - 2400-2483.5 MHZ

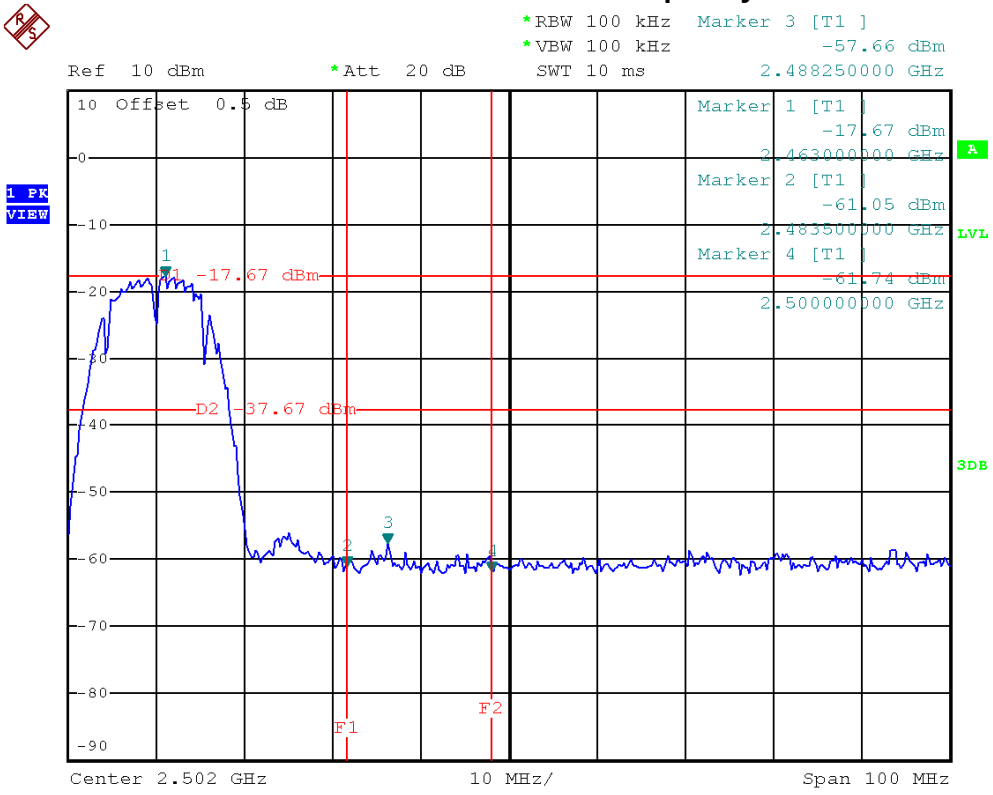
| | | | |
|---|---|---|---|
| E.U.T | WiFi Microscope | Model Name | DMC-2313 |
| Temperature | 26°C | Relative Humidity | 46% |
| Test Voltage | DC 4.5V | | |
| Test Mode | IEEE 802.11b | | |

| Channel of Worst Data | | | |
|---|---|---|---|
| The max. radio frequency power in any 100kHz bandwidth outside the frequency band | | The max. radio frequency power in any 100 kHz bandwidth within the frequency band. | |
| FREQUENCY(MHz) | POWER(dBm) | FREQUENCY(MHz) | POWER(dBm) |
| 2397.50 | -58.00 | 2488.25 | -57.66 |
| Result | | | |
| In any 100kHz bandwidth outside the frequency band, the radio frequency power is at least 20dB below that in the 100kHz bandwidth within the band that contains the highest lever of the desired power. | | | |

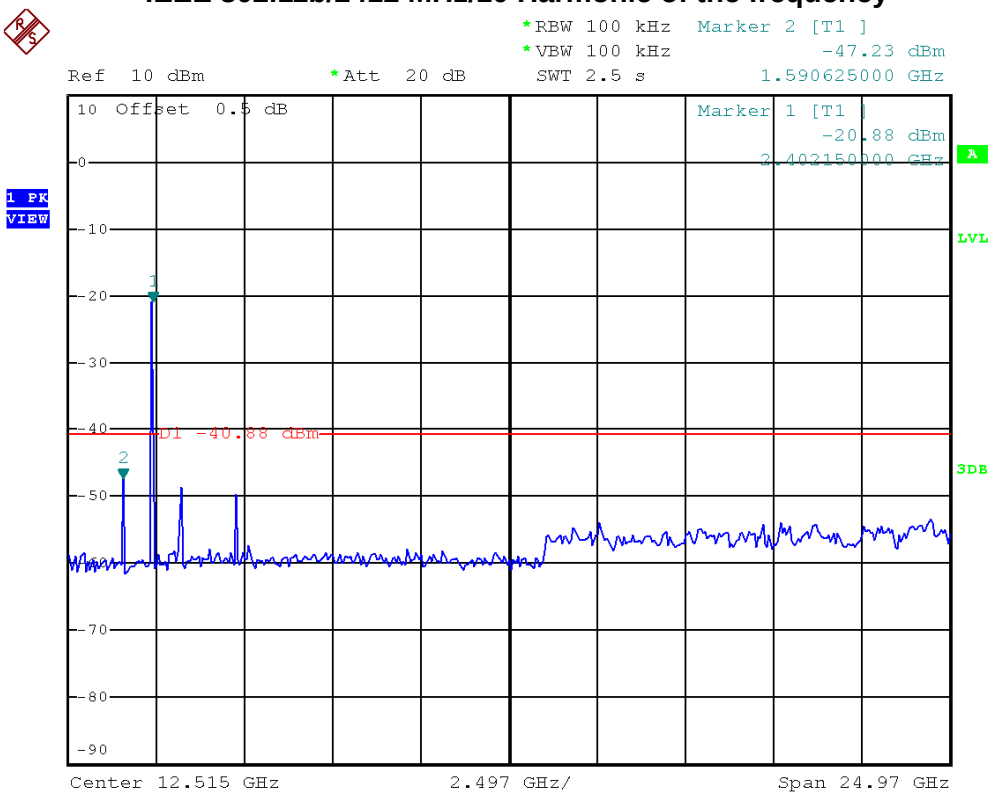
## IEEE 802.11b/The max. radio frequency power in any 100kHz bandwidth outside the frequency band



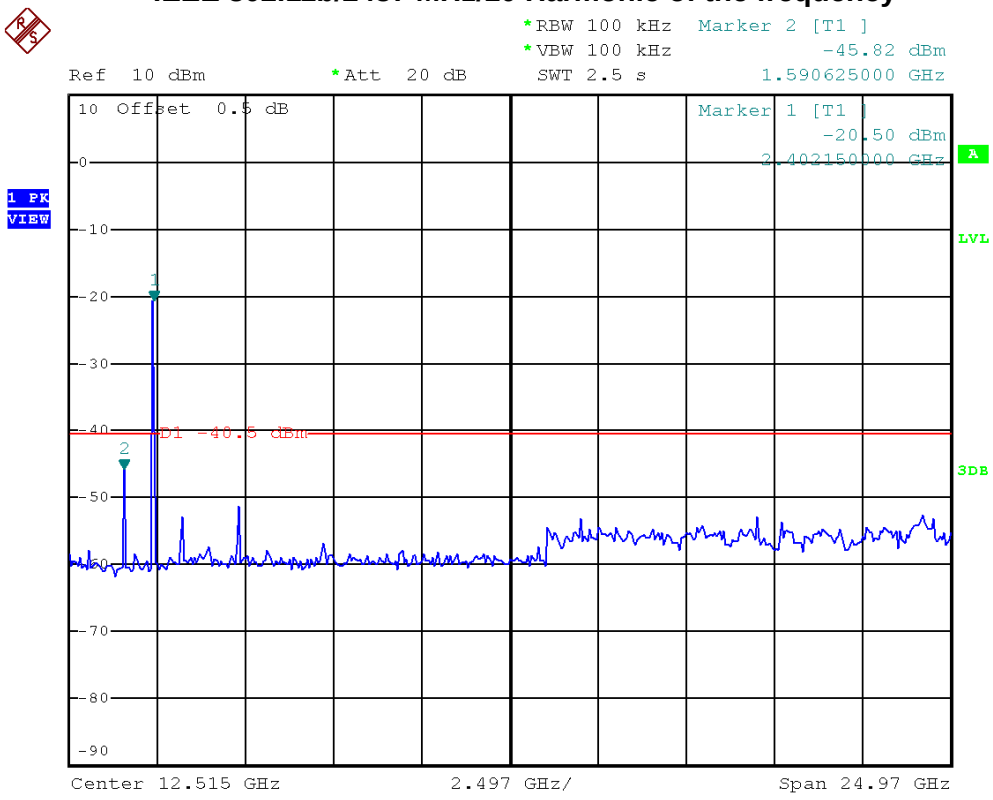

## IEEE 802.11b/The max. radio frequency power in any 100 kHz bandwidth within the frequency band



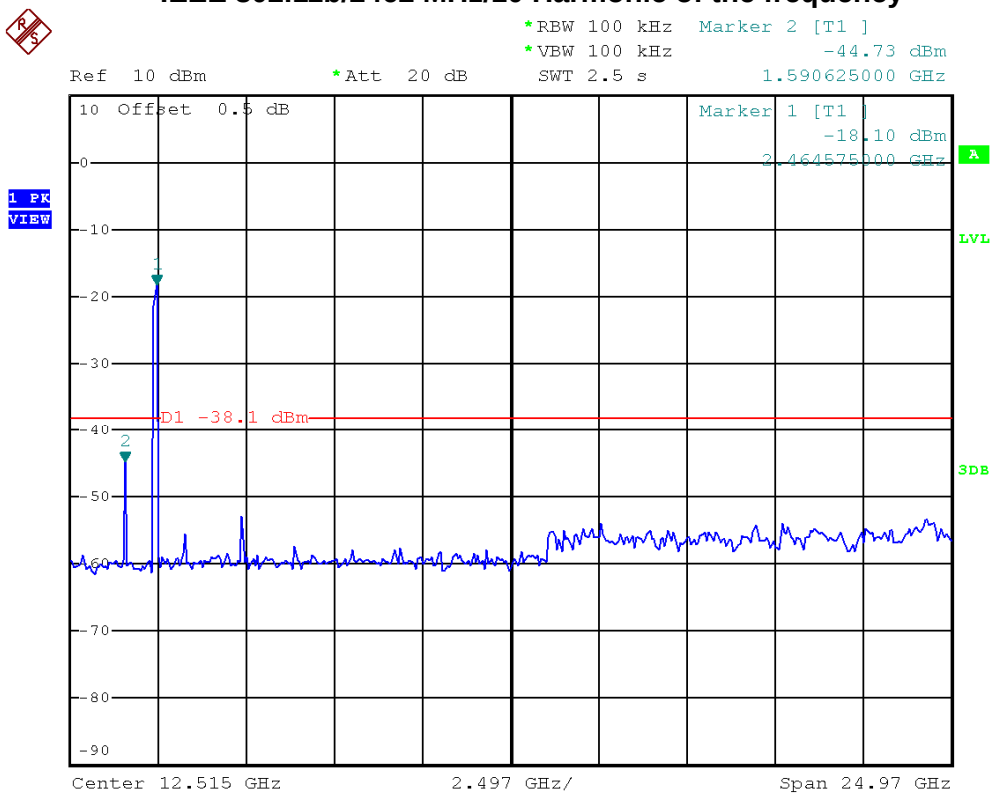
## IEEE 802.11b/2412 MHz/10 Harmonic of the frequency




## IEEE 802.11b/2437 MHz/10 Harmonic of the frequency



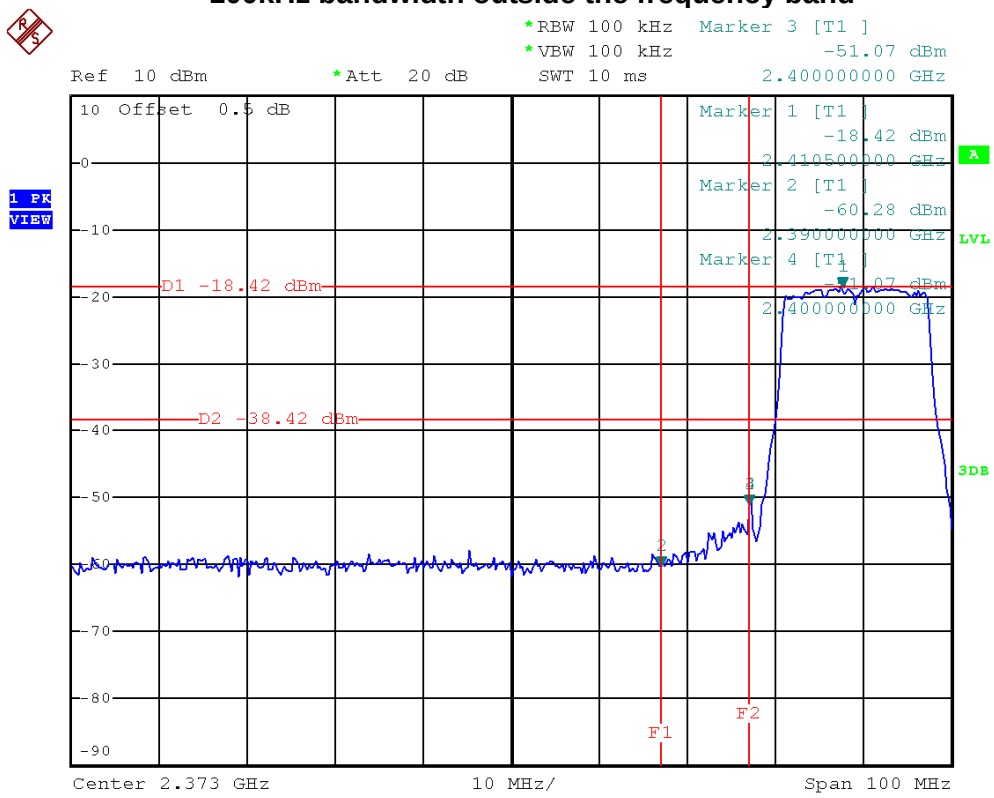
## IEEE 802.11b/2462 MHz/10 Harmonic of the frequency



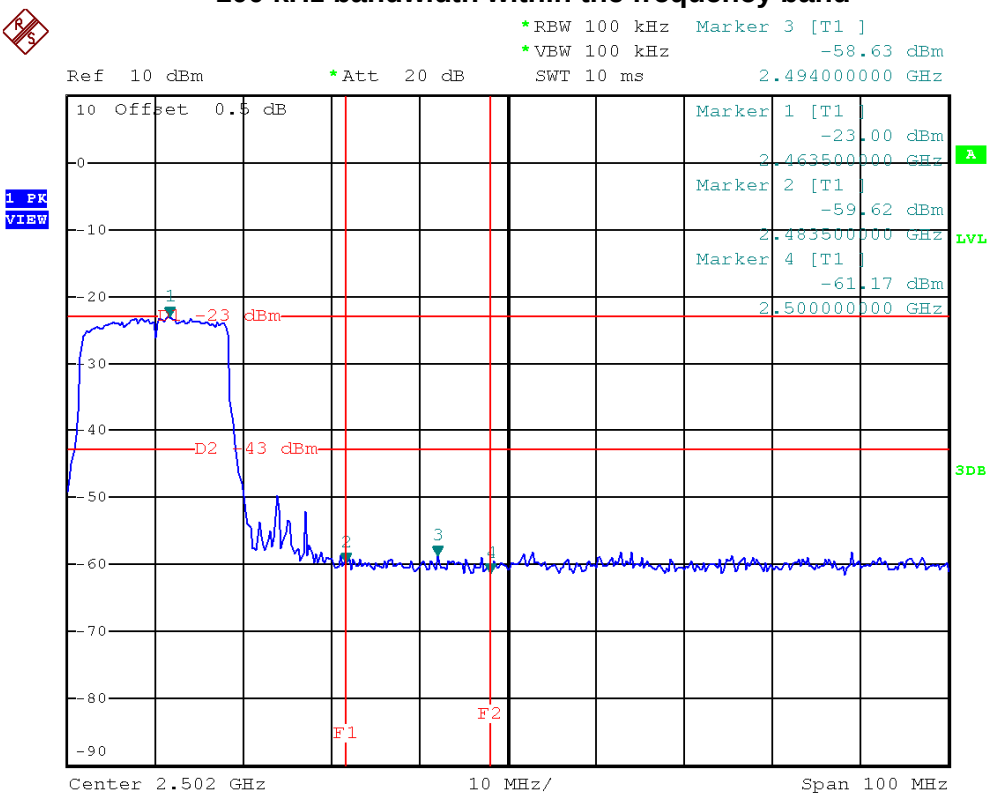
| E.U.T | WiFi Microscope | Model Name | DMC-2313 |
|---|---|---|---|
| Temperature | 26°C | Relative Humidity | 46% |
| Test Voltage | DC 4.5V | | |
| Test Mode | IEEE 802.11g | | |

| Channel of Worst Data | | | |
|---|---|---|---|
| The max. radio frequency power in any 100kHz bandwidth outside the frequency band | | The max. radio frequency power in any 100 kHz bandwidth within the frequency band. | |
| FREQUENCY(MHz) | POWER(dBm) | FREQUENCY(MHz) | POWER(dBm) |
| 2400.00 | -51.07 | 2494.00 | -58.63 |
| Result | | | |
| In any 100kHz bandwidth outside the frequency band, the radio frequency power is at least 20dB below that in the 100kHz bandwidth within the band that contains the highest lever of the desired power. | | | |

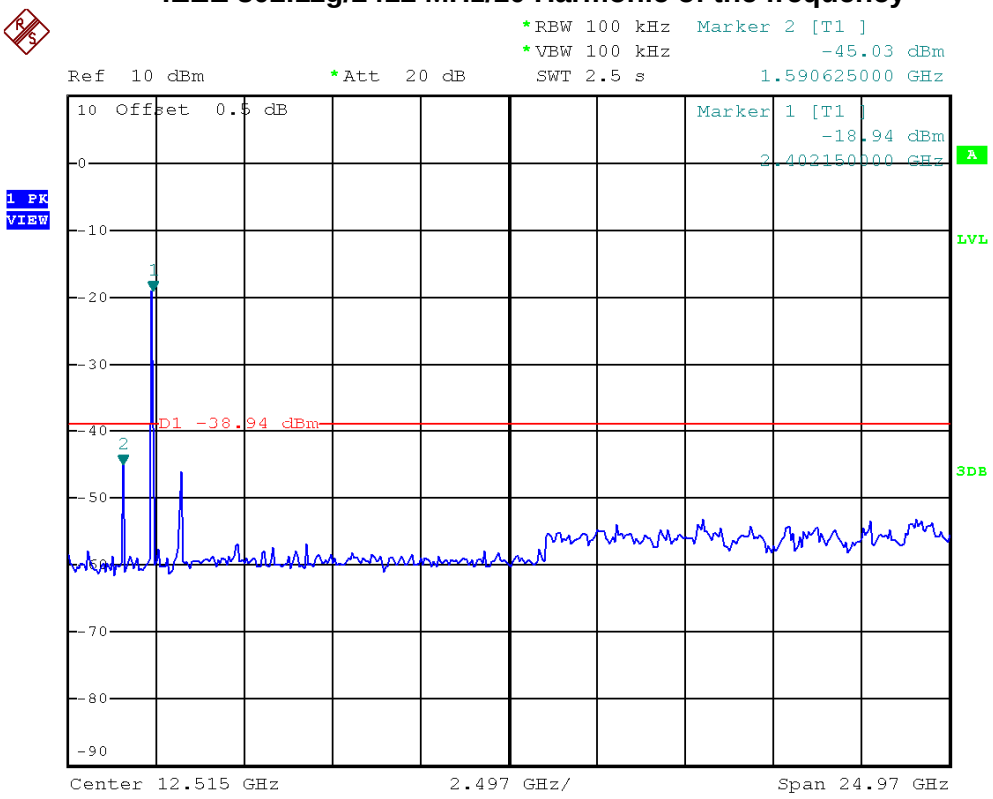
## IEEE 802.11g/The max. radio frequency power in any 100kHz bandwidth outside the frequency band



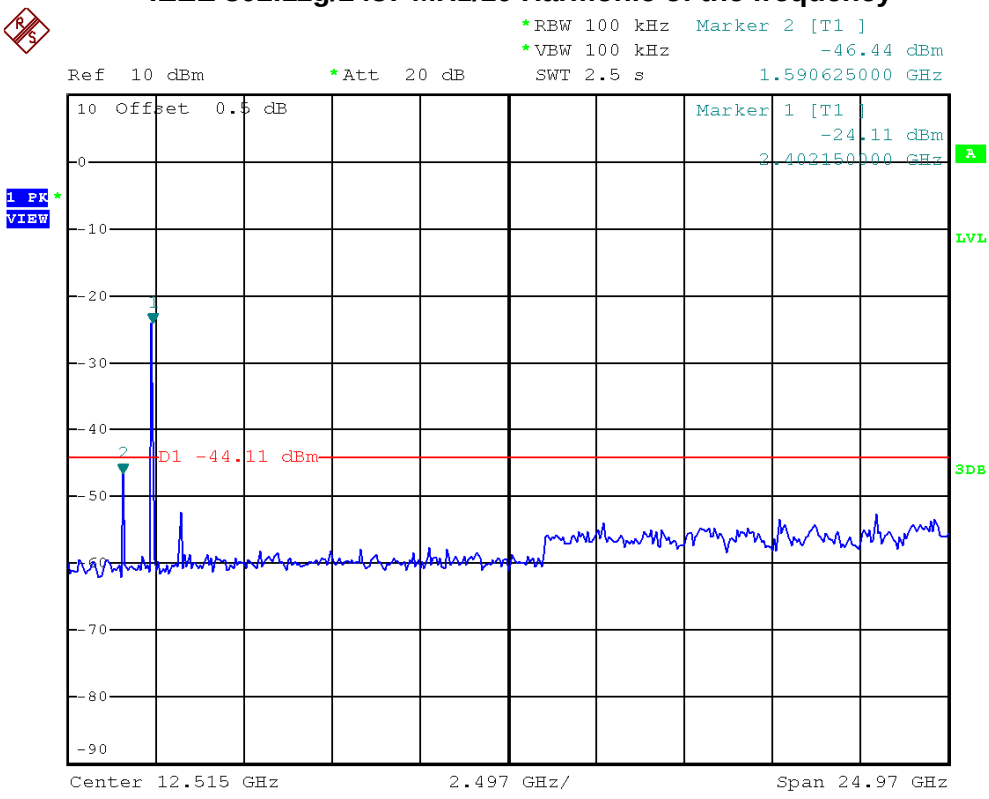

## IEEE 802.11g/The max. radio frequency power in any 100 kHz bandwidth within the frequency band



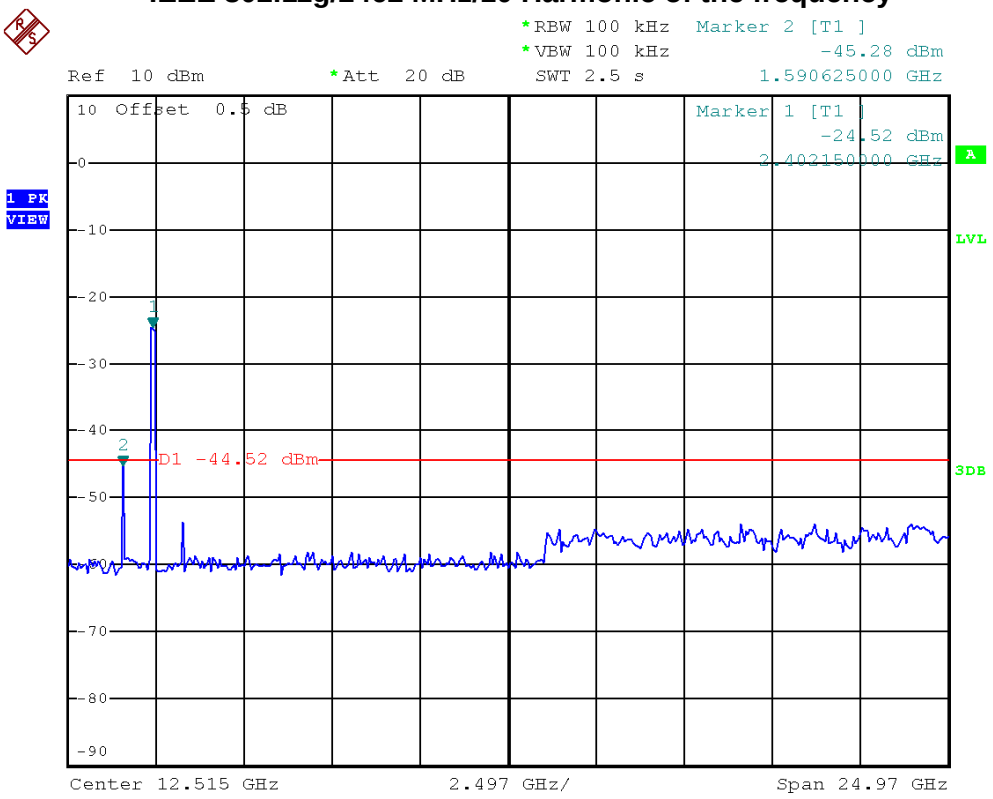
## IEEE 802.11g/2412 MHz/10 Harmonic of the frequency




## IEEE 802.11g/2437 MHz/10 Harmonic of the frequency



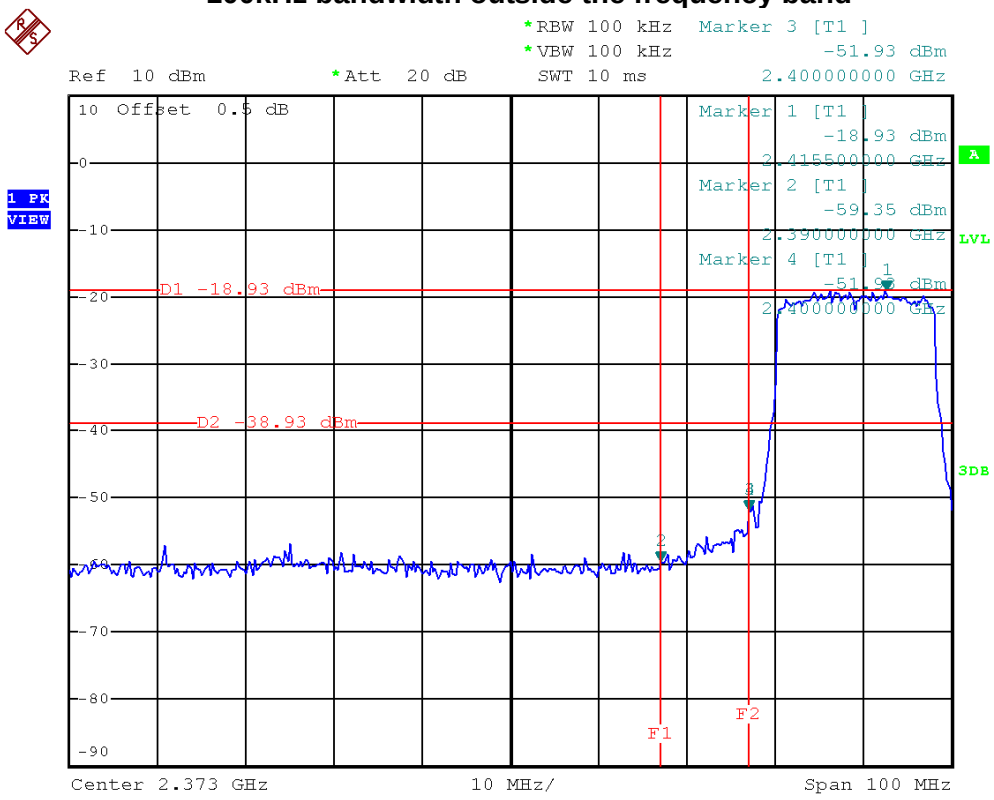
## IEEE 802.11g/2462 MHz/10 Harmonic of the frequency



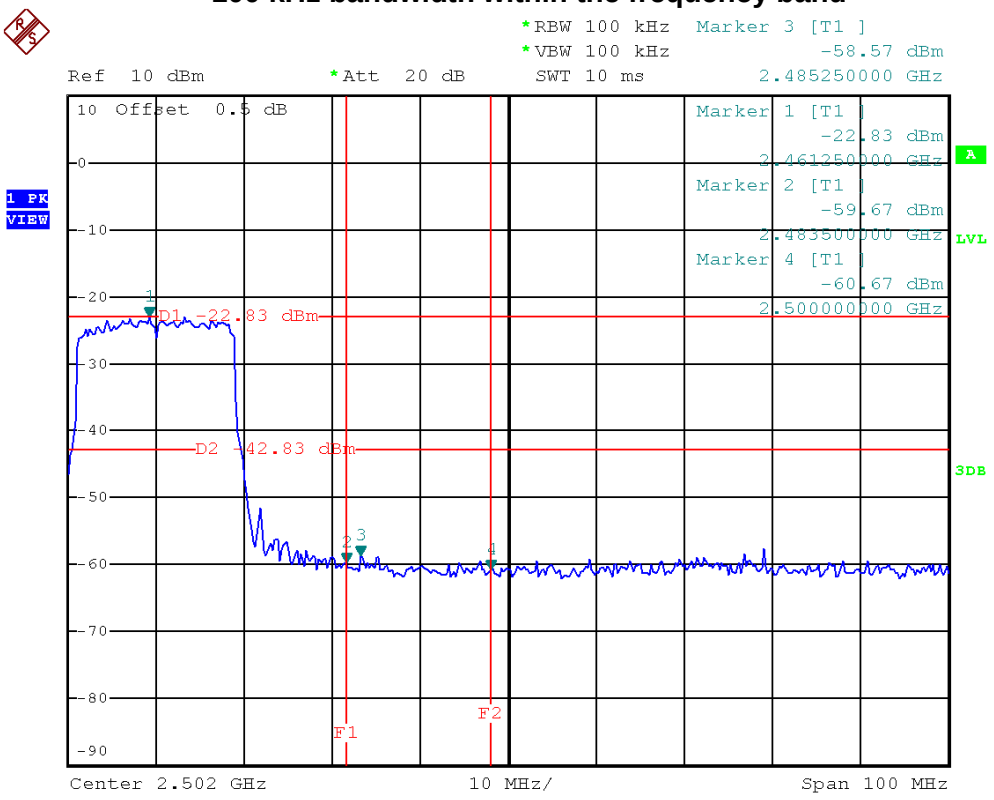
| E.U.T | WiFi Microscope | Model Name | DMC-2313 |
|---|---|---|---|
| Temperature | 26°C | Relative Humidity | 46% |
| Test Voltage | DC 4.5V | | |
| Test Mode | IEEE 802.11n (20 MHz) | | |

| Channel of Worst Data | | | |
|---|---|---|---|
| The max. radio frequency power in any 100kHz bandwidth outside the frequency band | | The max. radio frequency power in any 100 kHz bandwidth within the frequency band. | |
| FREQUENCY(MHz) | POWER(dBm) | FREQUENCY(MHz) | POWER(dBm) |
| 2400.00 | -51.93 | 2485.25 | -58.57 |
| Result | | | |
| In any 100kHz bandwidth outside the frequency band, the radio frequency power is at least 20dB below that in the 100kHz bandwidth within the band that contains the highest lever of the desired power. | | | |

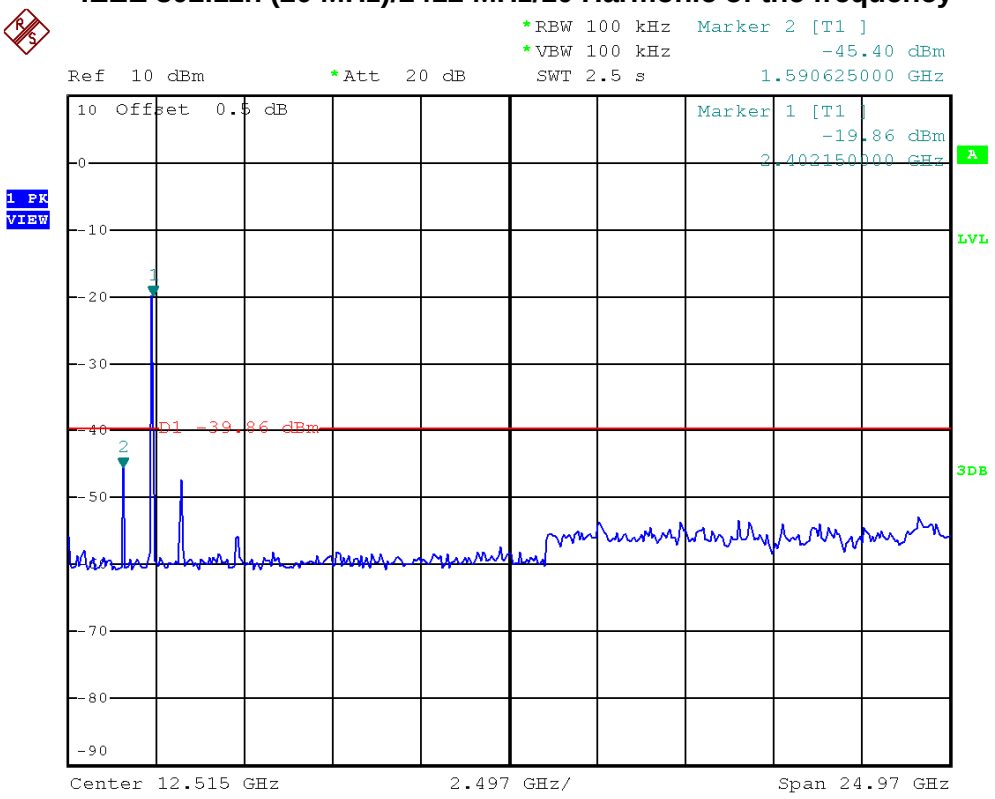
## IEEE 802.11n (20 MHz)/The max. radio frequency power in any 100kHz bandwidth outside the frequency band



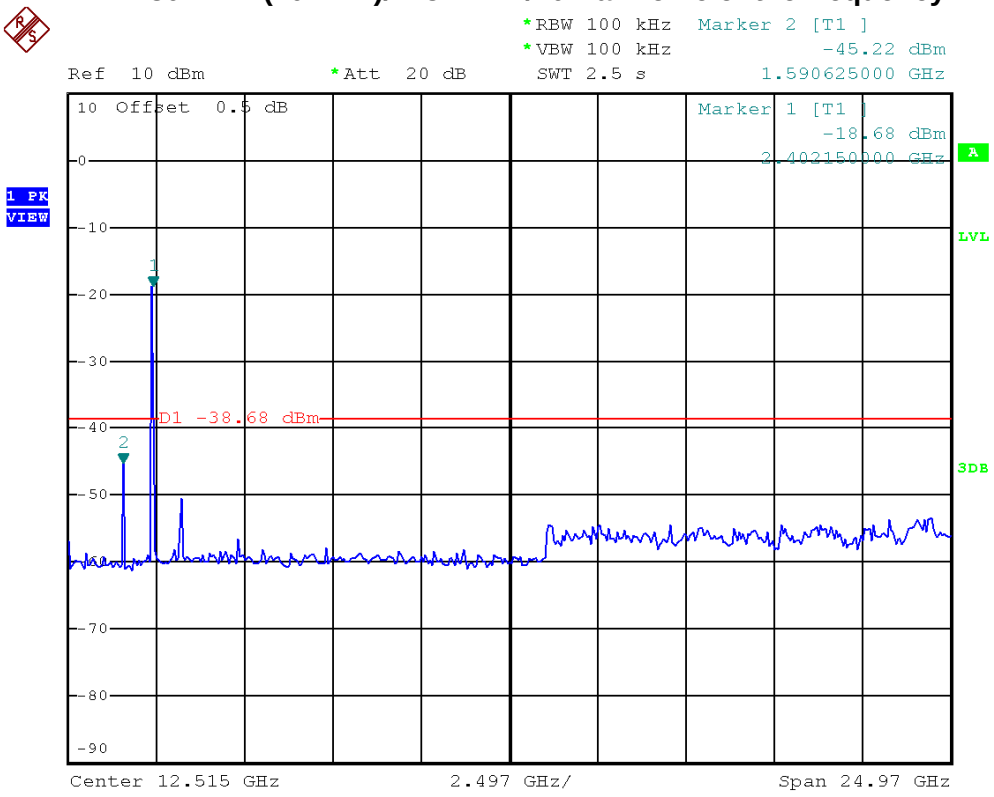

## IEEE 802.11n (20 MHz)/The max. radio frequency power in any 100 kHz bandwidth within the frequency band



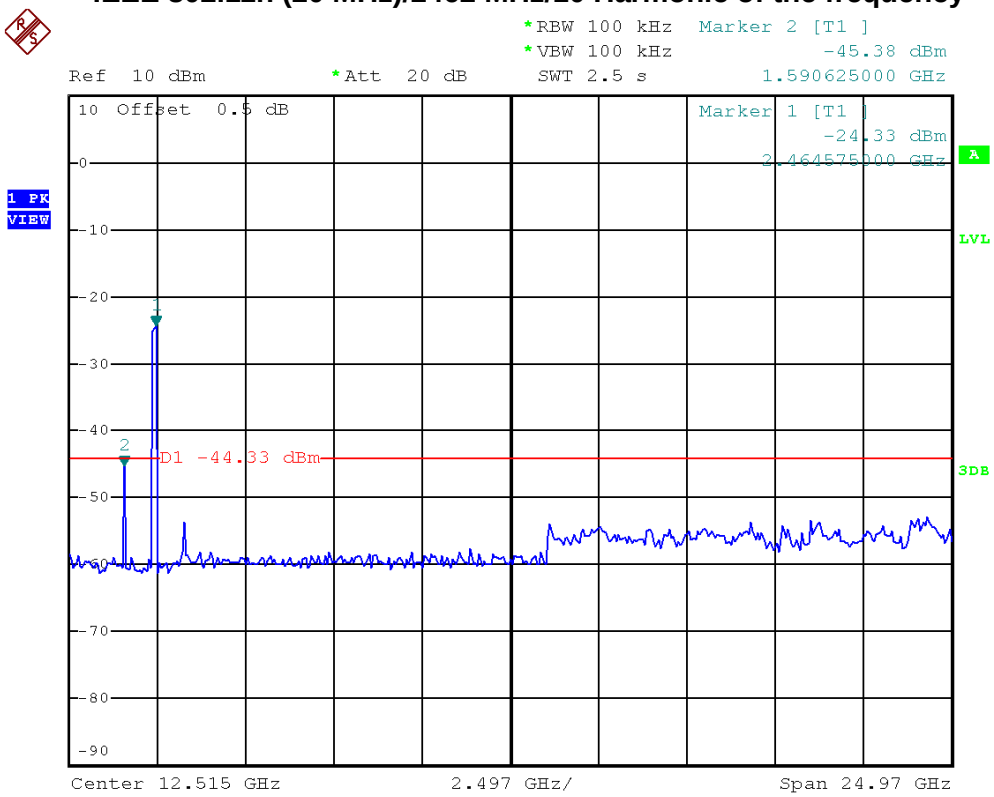
## IEEE 802.11n (20 MHz)/2412 MHz/10 Harmonic of the frequency




## IEEE 802.11n (20 MHz)/2437 MHz/10 Harmonic of the frequency



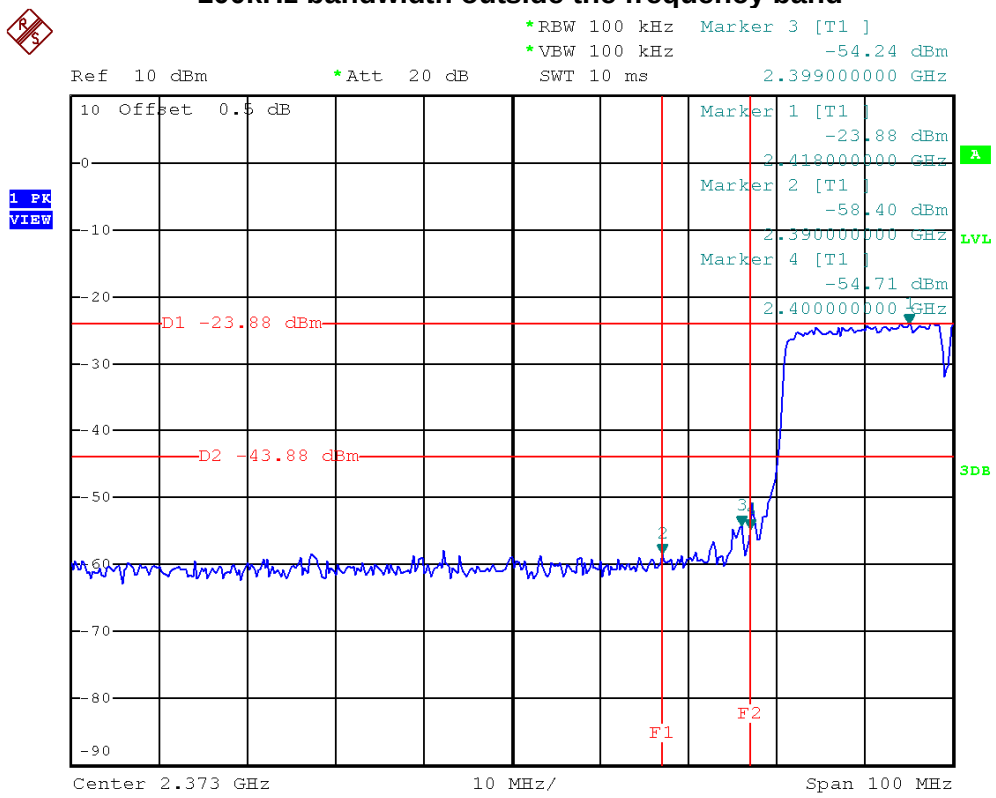
## IEEE 802.11n (20 MHz)/2462 MHz/10 Harmonic of the frequency



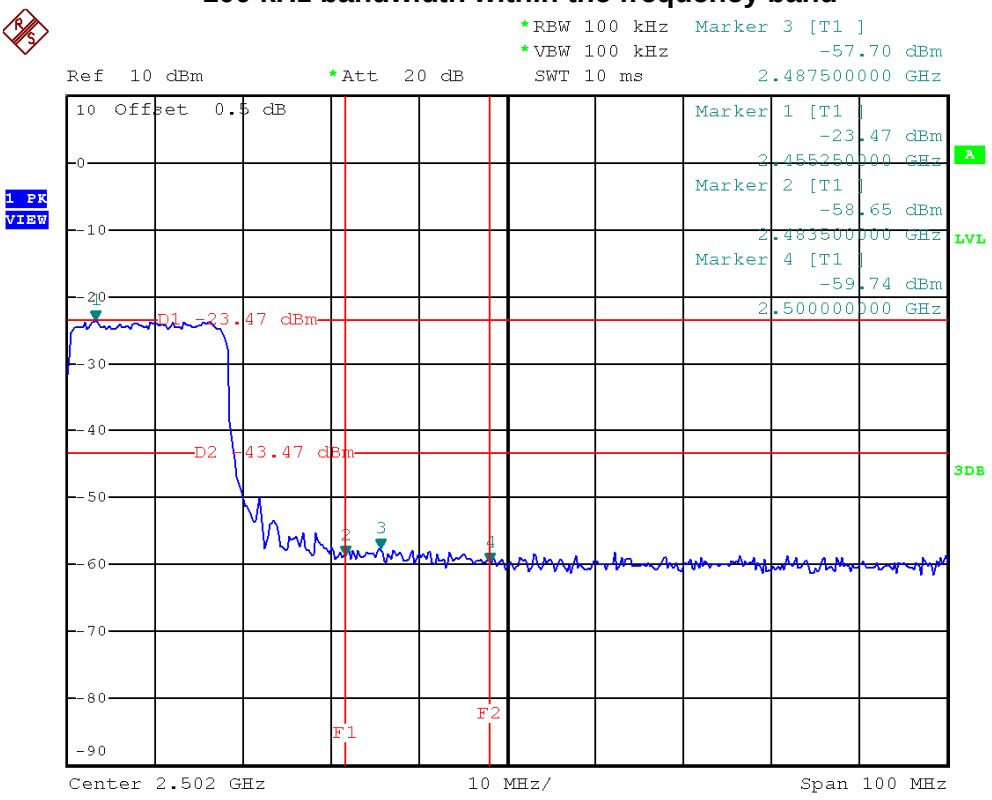
| | | | |
|---|---|---|---|
| E.U.T | WiFi Microscope | Model Name | DMC-2313 |
| Temperature | 26°C | Relative Humidity | 46% |
| Test Voltage | DC 4.5V | | |
| Test Mode | IEEE 802.11n (40 MHz) | | |

| Channel of Worst Data | | | |
|---|---|---|---|
| The max. radio frequency power in any 100kHz bandwidth outside the frequency band | | The max. radio frequency power in any 100 kHz bandwidth within the frequency band. | |
| FREQUENCY(MHz) | POWER(dBm) | FREQUENCY(MHz) | POWER(dBm) |
| 2399.00 | -54.24 | 2487.50 | -57.70 |
| Result | | | |
| In any 100kHz bandwidth outside the frequency band, the radio frequency power is at least 20dB below that in the 100kHz bandwidth within the band that contains the highest lever of the desired power. | | | |

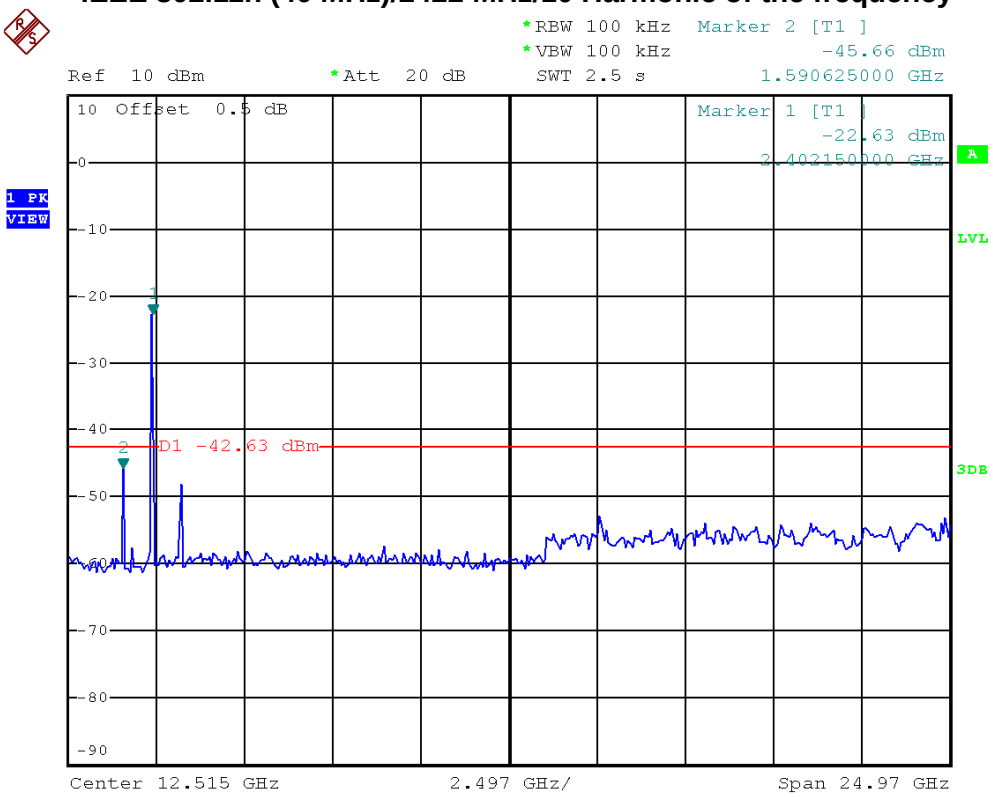
## IEEE 802.11n (40 MHz)/The max. radio frequency power in any 100kHz bandwidth outside the frequency band



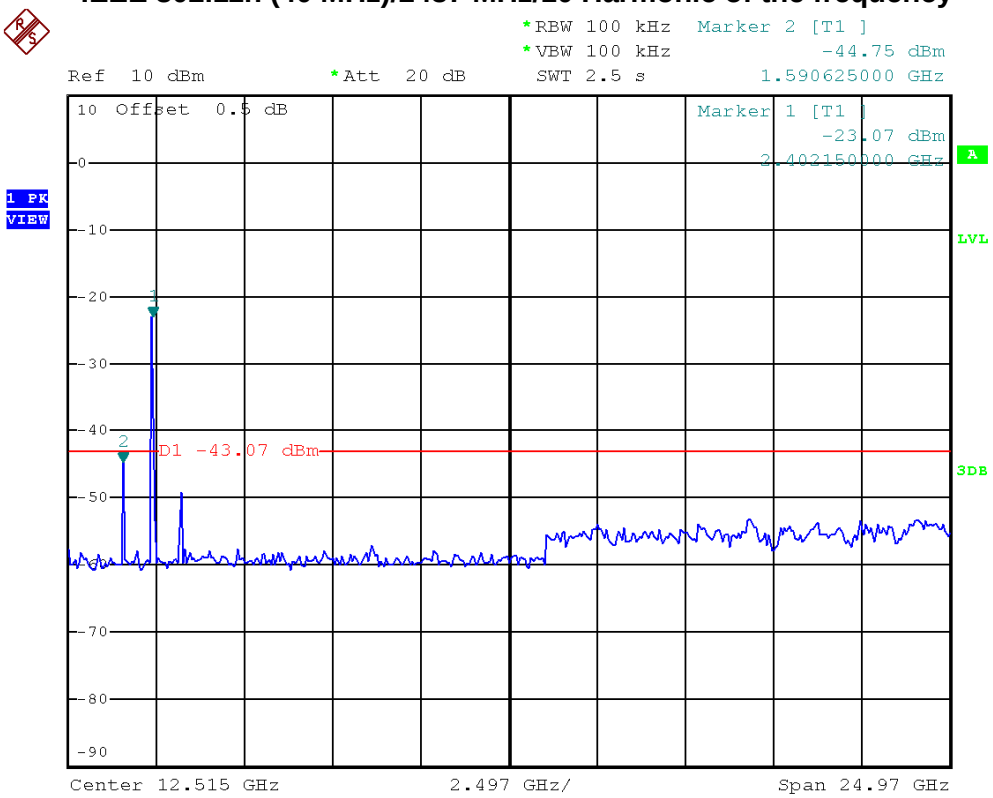

## IEEE 802.11n (40 MHz)/The max. radio frequency power in any 100 kHz bandwidth within the frequency band



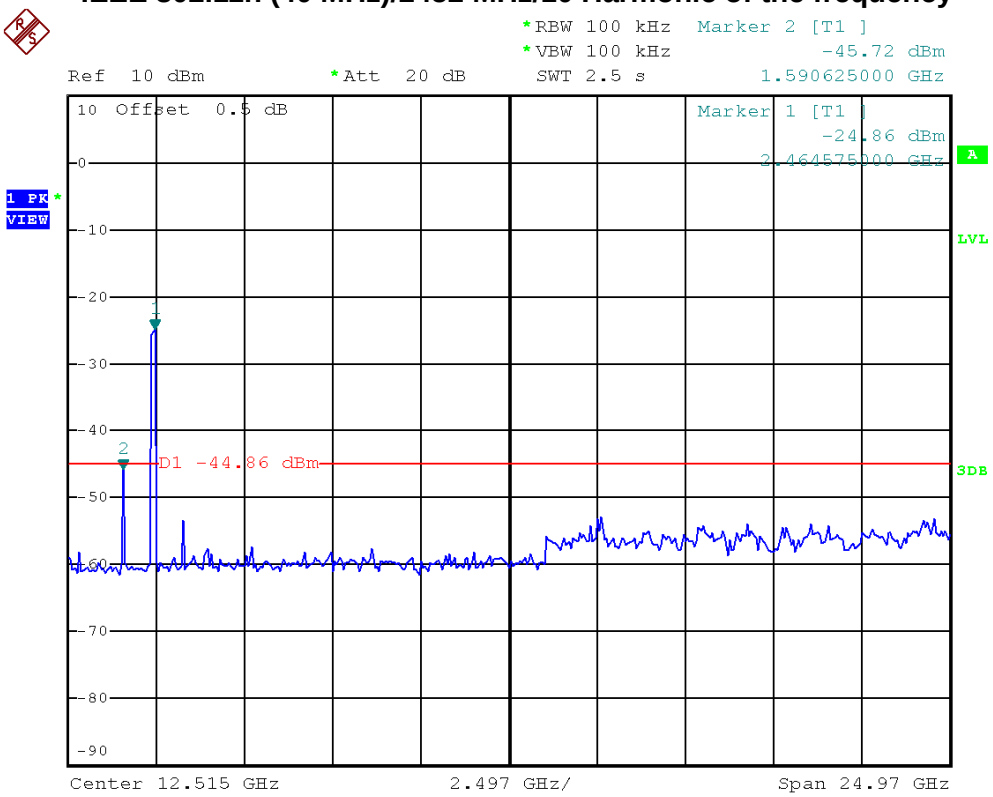
## IEEE 802.11n (40 MHz)/2422 MHz/10 Harmonic of the frequency




## IEEE 802.11n (40 MHz)/2437 MHz/10 Harmonic of the frequency



## IEEE 802.11n (40 MHz)/2452 MHz/10 Harmonic of the frequency



# 5 6 DB BANDWIDTH

## 5.1 LIMIT

| Test Item | Frequency Range (MHz) | Limit |
|---|---|---|
| Bandwidth | 2400-2483.5 | >= 500KHz<br>(6 dB bandwidth) |

## 5.2 MEASUREMENT INSTRUMENTS LIST

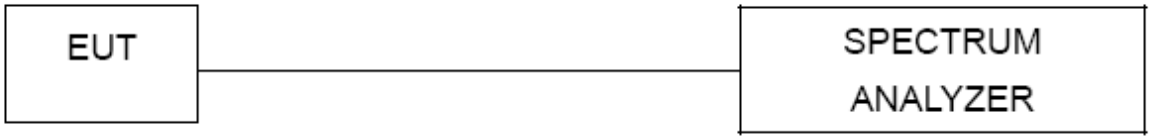
| Item | Kind of Equipment | Manufacturer | Type No. | Serial No. | Calibrated until |
|---|---|---|---|---|---|
| 1 | Spectrum Analyzer | R&S | FSP-40 | 100129 | Oct. 01, 2013 |

NOTE: **N/A**: denotes No Model Name, No Serial No. or No Calibration specified.

## 5.3 TEST PROCEDURES

a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.
b. Spectrum Setting: RBW= 100KHz, VBW=100KHz, Sweep time = Auto.

## 5.4 TEST SETUP LAYOUT




## 5.5 DEVIATION FROM TEST STANDARD

No deviation

## 5.6 EUT OPERATING CONDITIONS

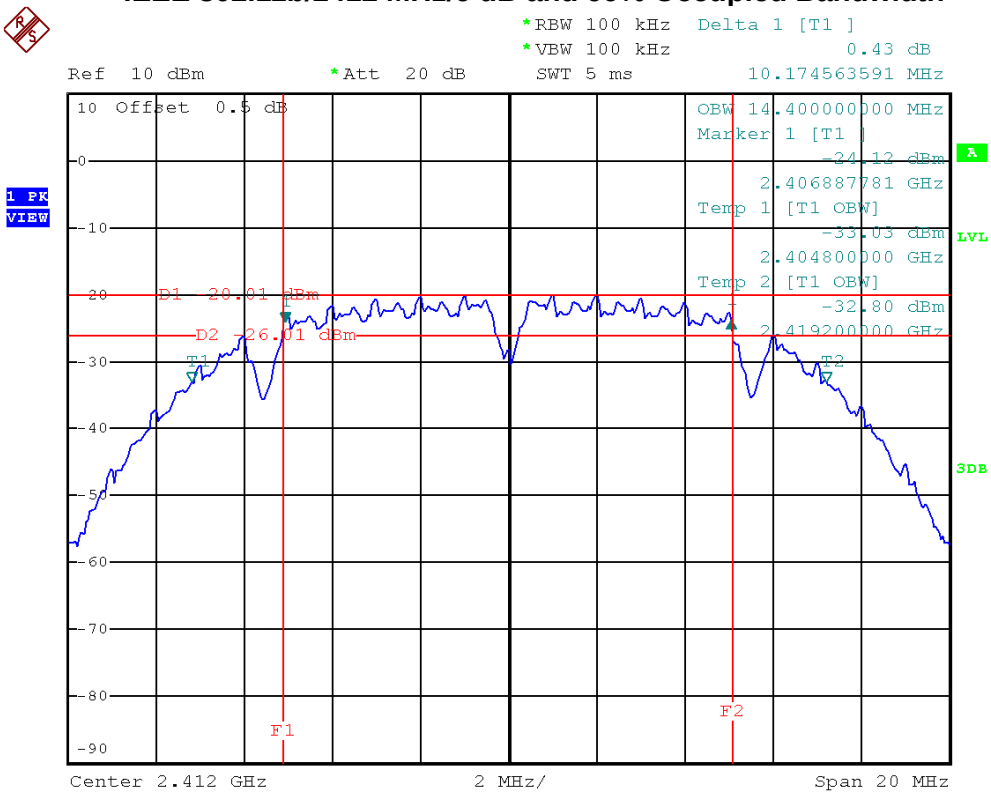
The EUT tested system was configured as the statements of 4.6 Unless otherwise a special operating condition is specified in the follows during the testing.

## 5.7 TEST RESULTS - 2400-2483.5 MHZ

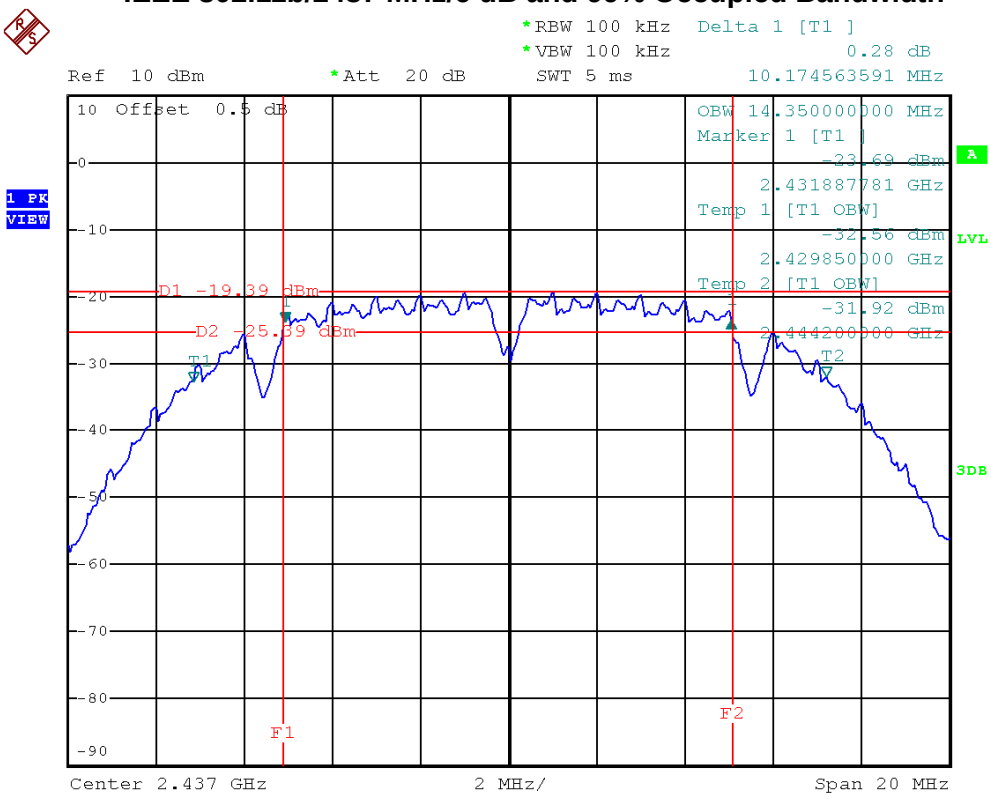
| E.U.T | WiFi Microscope | Model Name | DMC-2313 |
|---|---|---|---|
| Temperature | 26°C | Relative Humidity | 46% |
| Test Voltage | DC 4.5V | | |
| Test Mode | IEEE 802.11b/2412 MHz, 2437 MHz, 2462 MHz | | |

| Frequency | 6 dB Bandwidth (MHz) | 99% Occupied Bandwidth (MHz) | Limit | Result |
|---|---|---|---|---|
| 2412 MHz | 10.17 | 14.40 | >=500 kHz | PASS |
| 2437 MHz | 10.17 | 14.35 | >=500 kHz | PASS |
| 2462 MHz | 10.17 | 14.35 | >=500 kHz | PASS |

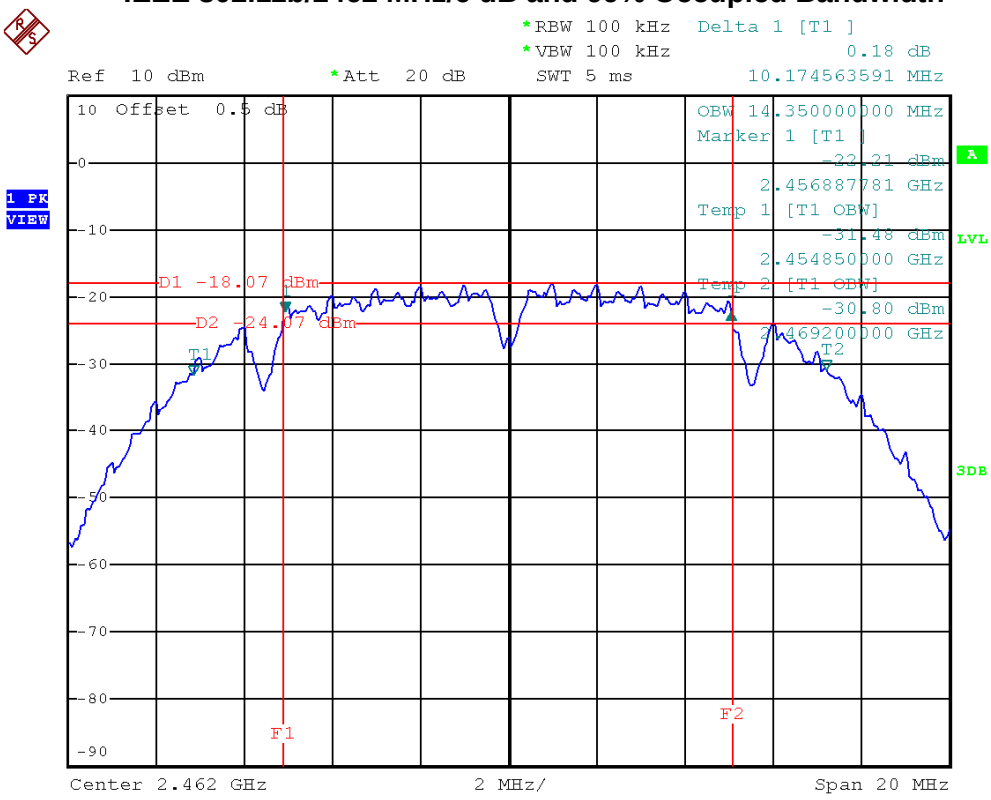
**IEEE 802.11b/2412 MHz/6 dB and 99% Occupied Bandwidth**



## IEEE 802.11b/2437 MHz/6 dB and 99% Occupied Bandwidth



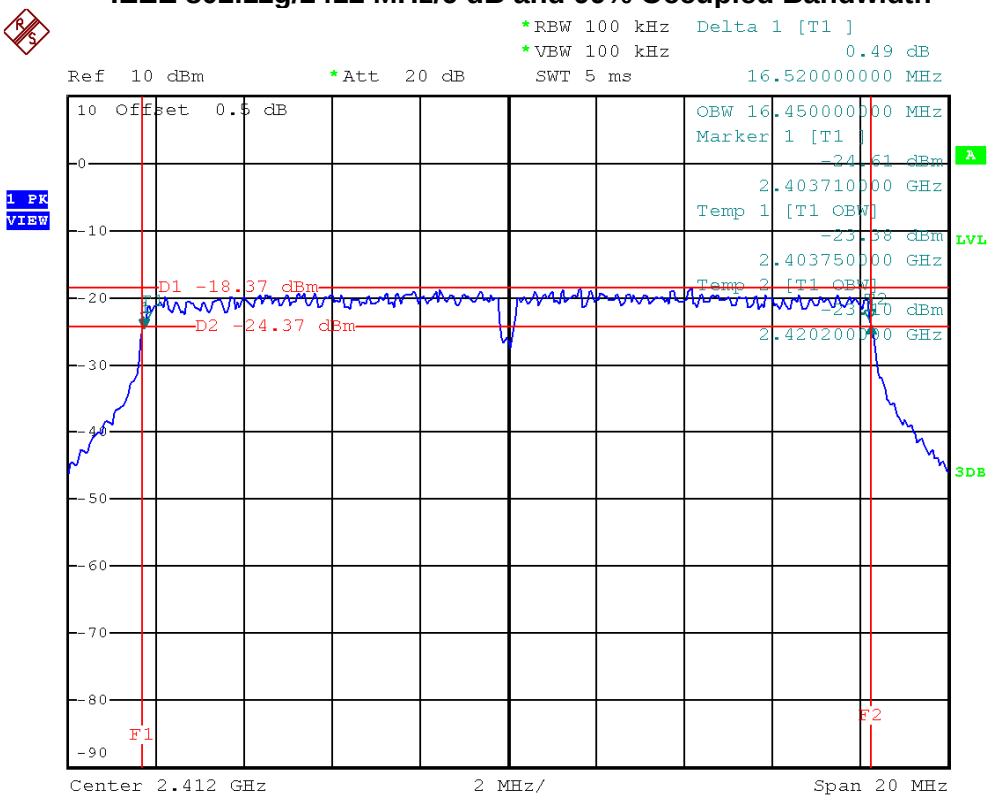

## IEEE 802.11b/2462 MHz/6 dB and 99% Occupied Bandwidth



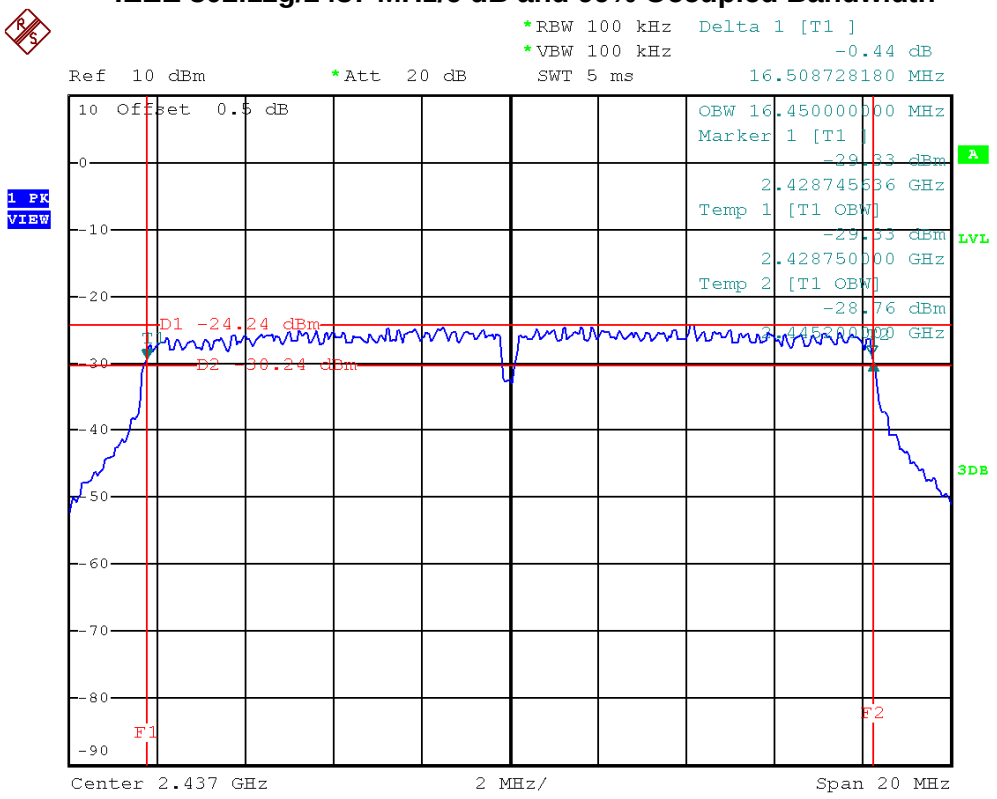
| E.U.T | WiFi Microscope | Model Name | DMC-2313 |
|---|---|---|---|
| Temperature | 26°C | Relative Humidity | 46% |
| Test Voltage | DC 4.5V | | |
| Test Mode | IEEE 802.11g/2412 MHz, 2437 MHz, 2462 MHz | | |

| Frequency | 6 dB Bandwidth (MHz) | 99% Occupied Bandwidth (MHz) | Limit | Result |
|---|---|---|---|---|
| 2412 MHz | 16.52 | 16.45 | >=500 kHz | PASS |
| 2437 MHz | 16.51 | 16.45 | >=500 kHz | PASS |
| 2462 MHz | 16.51 | 16.45 | >=500 kHz | PASS |

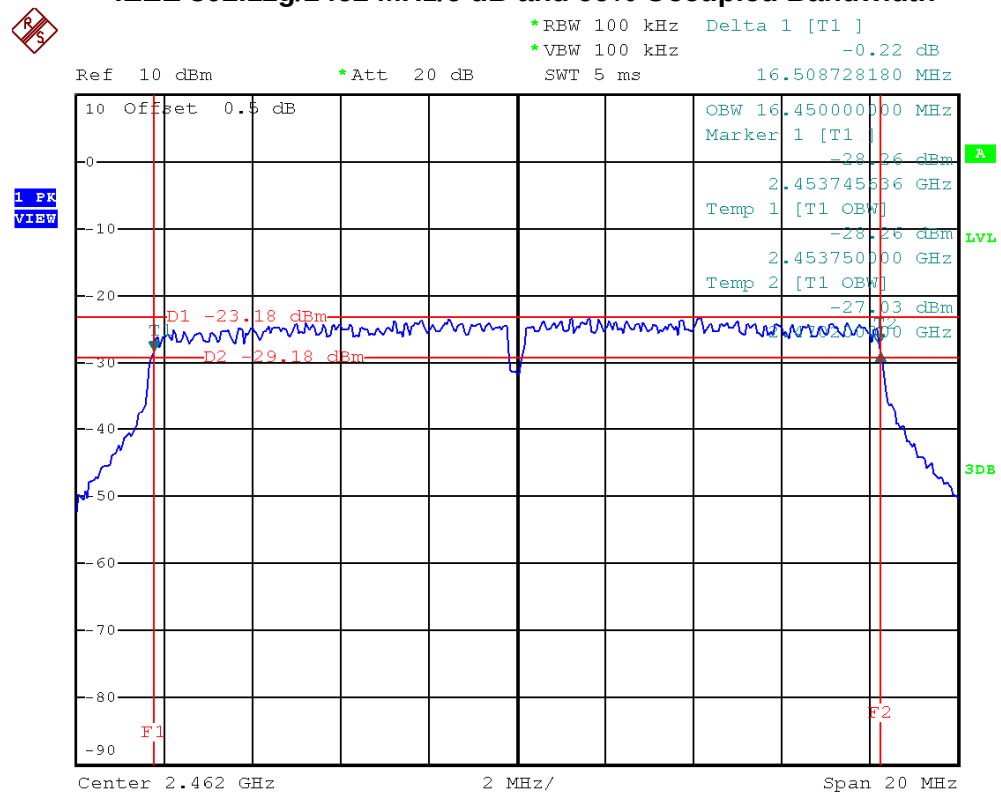
**IEEE 802.11g/2412 MHz/6 dB and 99% Occupied Bandwidth**



## IEEE 802.11g/2437 MHz/6 dB and 99% Occupied Bandwidth



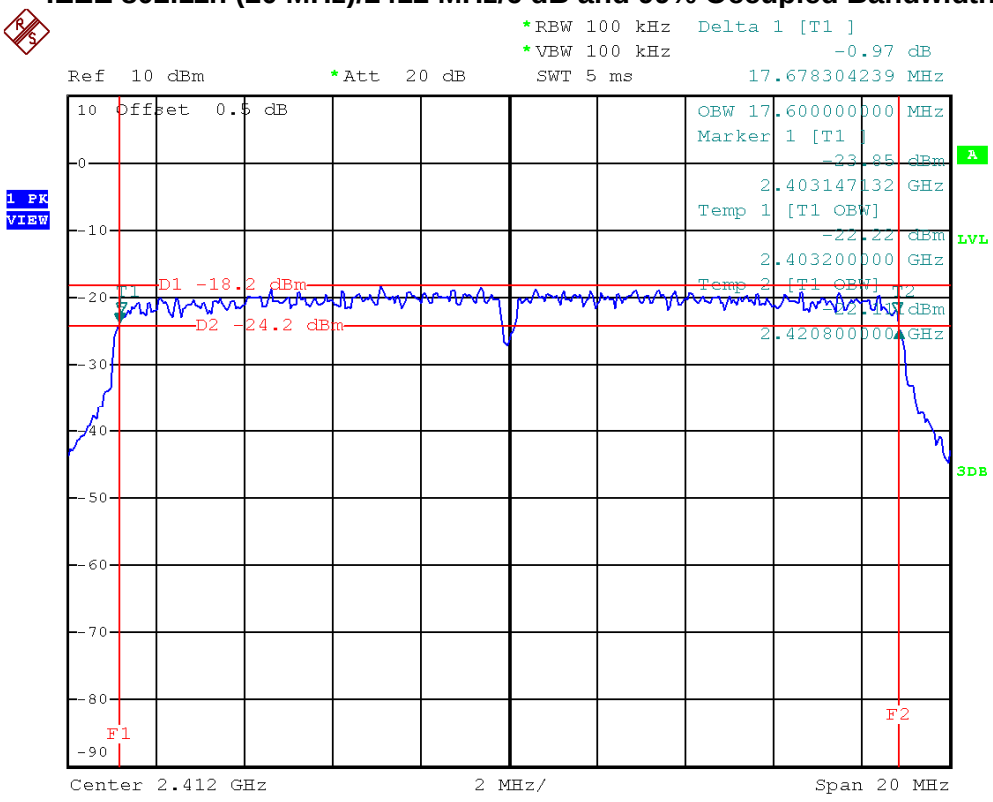

## IEEE 802.11g/2462 MHz/6 dB and 99% Occupied Bandwidth



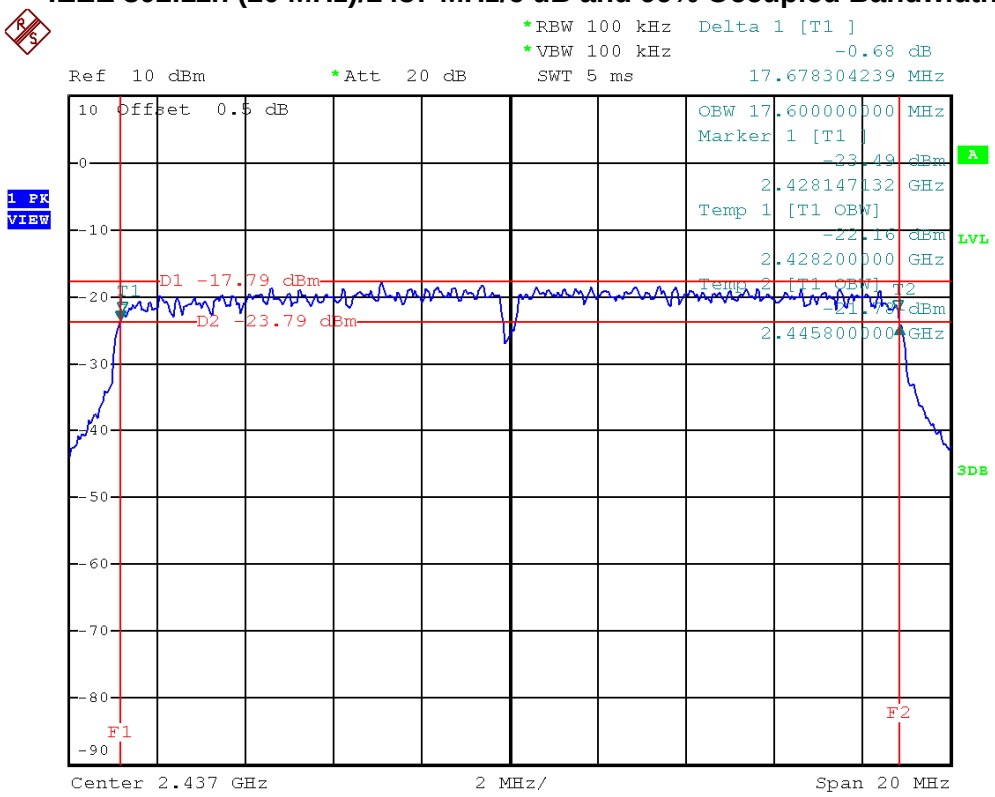
| E.U.T | WiFi Microscope | Model Name | DMC-2313 |
|---|---|---|---|
| Temperature | 26°C | Relative Humidity | 46% |
| Test Voltage | DC 4.5V | | |
| Test Mode | IEEE 802.11n (20 MHz)/2412 MHz, 2437 MHz, 2462 MHz | | |

| Frequency | 6 dB Bandwidth (MHz) | 99% Occupied Bandwidth (MHz) | Limit | Result |
|---|---|---|---|---|
| 2412 MHz | 17.68 | 17.60 | >=500 kHz | PASS |
| 2437 MHz | 17.68 | 17.60 | >=500 kHz | PASS |
| 2462 MHz | 17.56 | 17.60 | >=500 kHz | PASS |

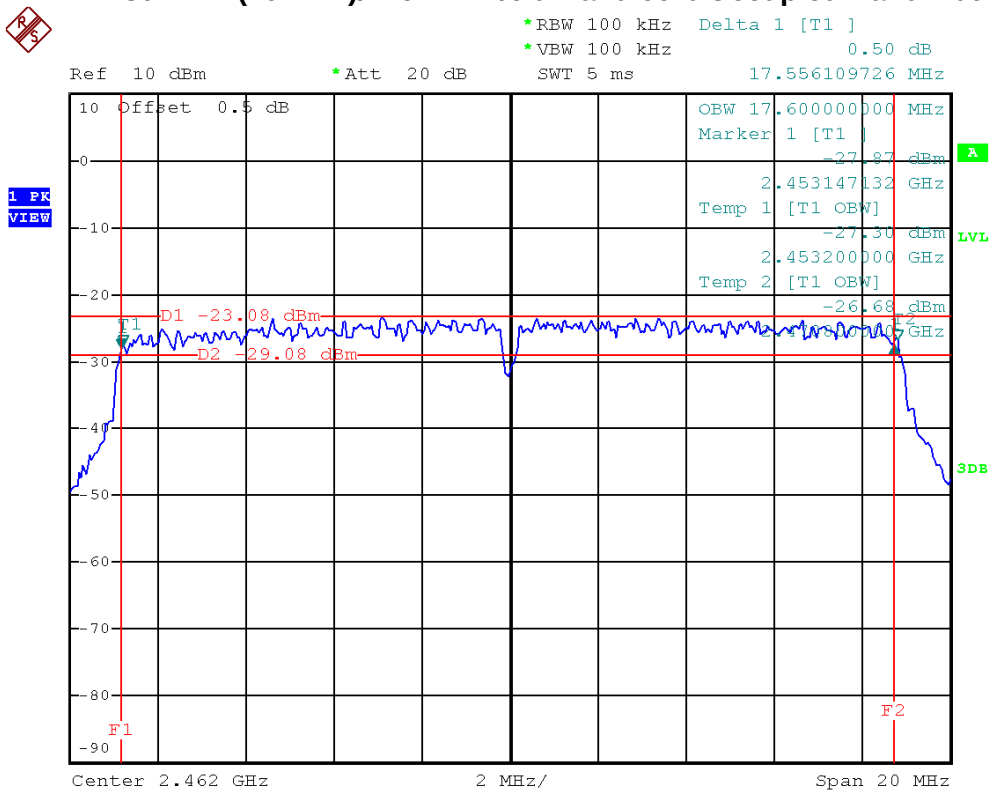
**IEEE 802.11n (20 MHz)/2412 MHz/6 dB and 99% Occupied Bandwidth**



## IEEE 802.11n (20 MHz)/2437 MHz/6 dB and 99% Occupied Bandwidth



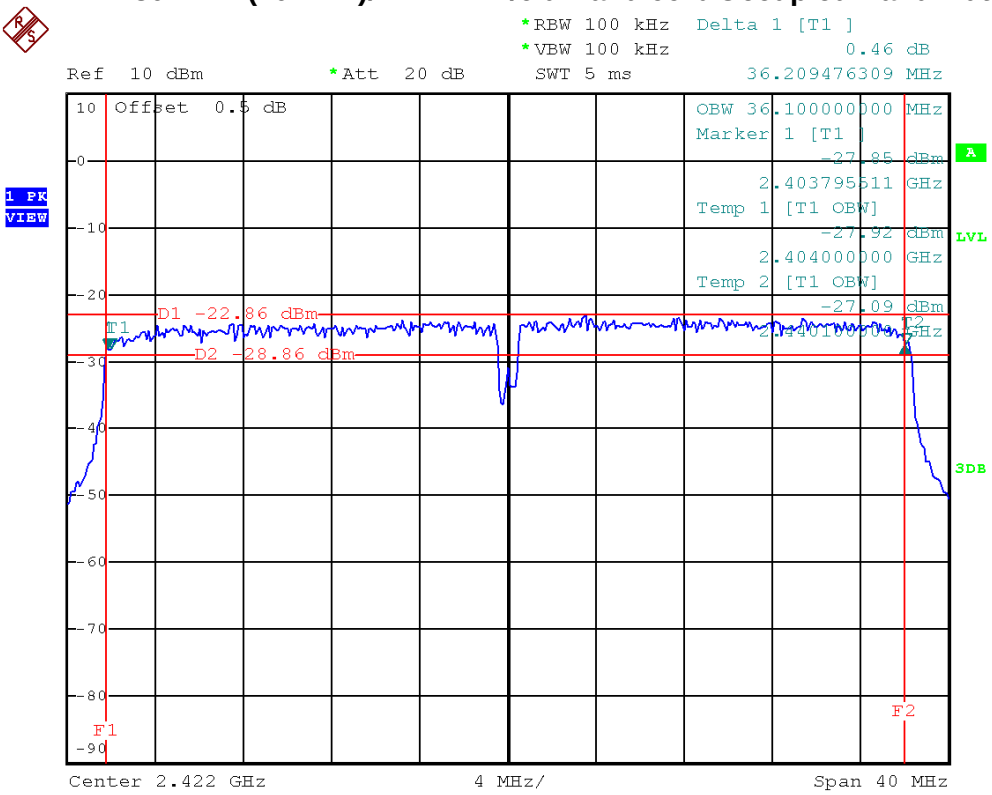

## IEEE 802.11n (20 MHz)/2462 MHz/6 dB and 99% Occupied Bandwidth



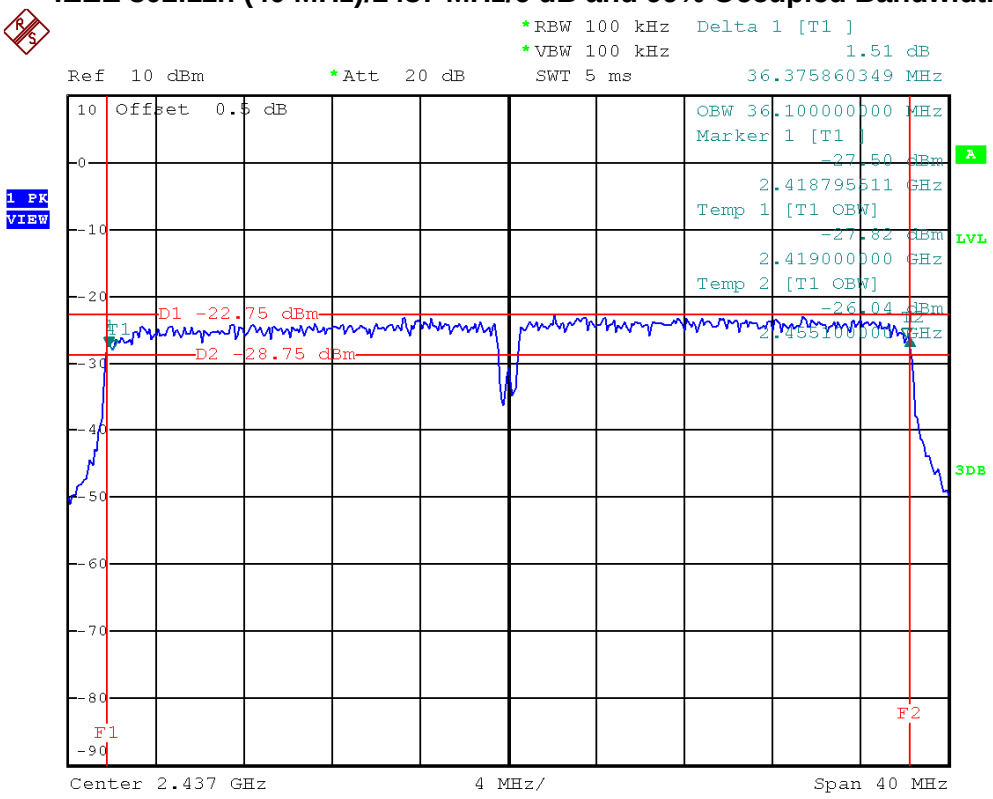
| E.U.T | WiFi Microscope | Model Name | DMC-2313 |
|---|---|---|---|
| Temperature | 26°C | Relative Humidity | 46% |
| Test Voltage | DC 4.5V | | |
| Test Mode | IEEE 802.11n (40 MHz)/2422 MHz, 2437 MHz, 2452 MHz | | |

| Frequency | 6 dB Bandwidth (MHz) | 99% Occupied Bandwidth (MHz) | Limit | Result |
|---|---|---|---|---|
| 2422 MHz | 32.21 | 36.10 | >=500 kHz | PASS |
| 2437 MHz | 36.38 | 36.10 | >=500 kHz | PASS |
| 2452 MHz | 36.40 | 36.10 | >=500 kHz | PASS |

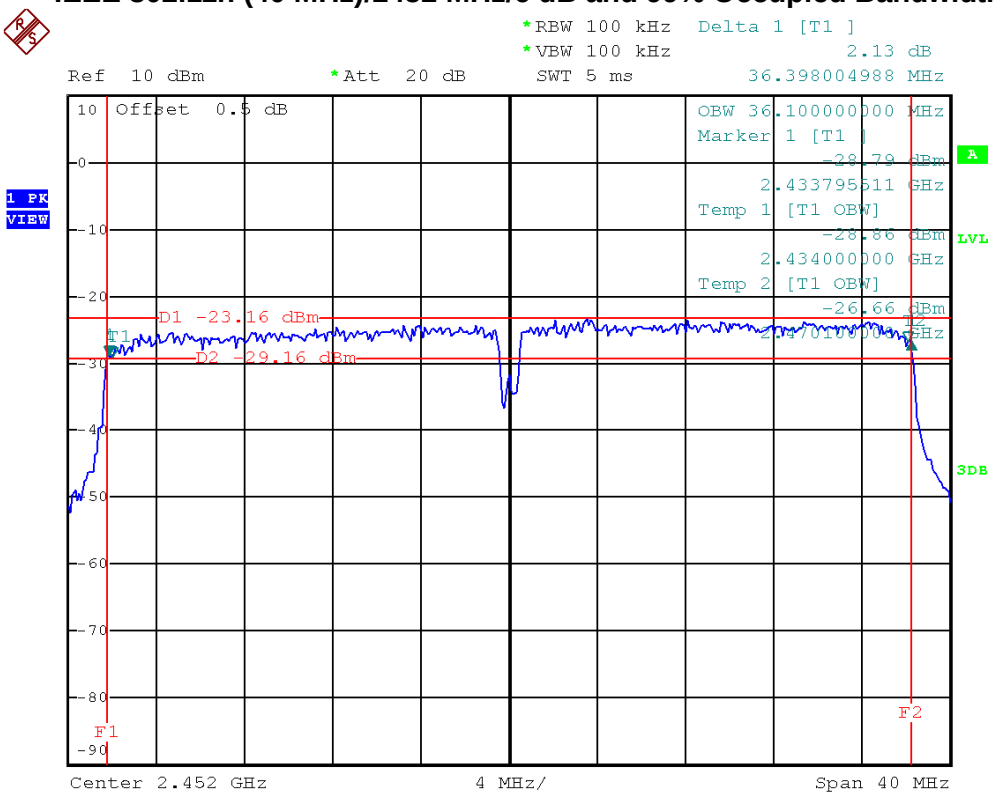
**IEEE 802.11n (40 MHz)/2422 MHz/6 dB and 99% Occupied Bandwidth**



## IEEE 802.11n (40 MHz)/2437 MHz/6 dB and 99% Occupied Bandwidth




## IEEE 802.11n (40 MHz)/2452 MHz/6 dB and 99% Occupied Bandwidth



# 6 MAXIMUM PEAK CONDUCTED OUTPUT POWER

## 6.1 LIMIT

| Test Item | Frequency Range (MHz) | Limit |
|---|---|---|
| Maximum Peak Conducted Output Power | 2400-2483.5 | 1 watt or 30 dBm |

## 6.2 MEASUREMENT INSTRUMENTS LIST

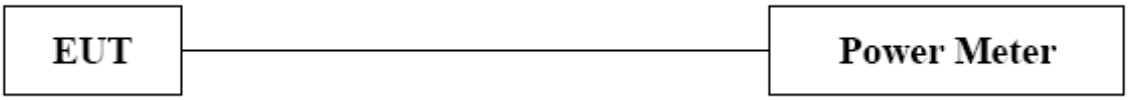
| Item | Kind of Equipment | Manufacturer | Type No. | Serial No. | Calibrated until |
|---|---|---|---|---|---|
| 1 | Power Meter | Anritsu | ML2495A | 1128008 | Feb,20,2013 |
| 2 | Power Meter Sensor | Anritsu | MA2411B | 1126001 | Feb,20,2013 |

NOTE: **N/A**: denotes No Model Name, No Serial No. or No Calibration specified.

## 6.3 TEST PROCEDURES

The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.

## 6.4 TEST SETUP LAYOUT




## 6.5 DEVIATION FROM TEST STANDARD

No deviation

## 6.6 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 4.6 Unless otherwise a special operating condition is specified in the follows during the testing.

## 6.7 TEST RESULTS - 2400-2483.5 MHZ

| | | | |
|---|---|---|---|
| E.U.T | WiFi Microscope | Model Name | DMC-2313 |
| Temperature | 26°C | Relative Humidity | 46% |
| Test Voltage | DC 4.5V | | |
| Test Mode | IEEE 802.11b/2412 MHz, 2437 MHz, 2462 MHz | | |

| Frequency | Peak Output Power (dBm) | Avg Output Power (dBm) | Peak Output Power LIMIT (dBm) | Result |
|---|---|---|---|---|
| 2412 MHz | 0.50 | -2.22 | 30 | PASS |
| 2437 MHz | 0.71 | -1.93 | 30 | PASS |
| 2462 MHz | 0.36 | -2.21 | 30 | PASS |

| E.U.T | WiFi Microscope | Model Name | DMC-2313 |
|---|---|---|---|
| Temperature | 26°C | Relative Humidity | 46% |
| Test Voltage | DC 4.5V | | |
| Test Mode | IEEE 802.11g/2412 MHz, 2437 MHz, 2462 MHz | | |

| Frequency | Peak Output Power (dBm) | Avg Output Power (dBm) | Peak Output Power LIMIT (dBm) | Result |
|---|---|---|---|---|
| 2412 MHz | 13.41 | 2.08 | 30 | PASS |
| 2437 MHz | 6.22 | -4.45 | 30 | PASS |
| 2462 MHz | 6.00 | -4.67 | 30 | PASS |

| E.U.T | WiFi Microscope | Model Name | DMC-2313 |
|---|---|---|---|
| Temperature | 26°C | Relative Humidity | 46% |
| Test Voltage | DC 4.5V | | |
| Test Mode | IEEE 802.11n (20 MHz)/2412 MHz, 2437 MHz, 2462 MHz | | |

| Frequency | Peak Output Power (dBm) | Avg Output Power (dBm) | Peak Output Power LIMIT (dBm) | Result |
|---|---|---|---|---|
| 2412 MHz | 12.34 | 2.15 | 30 | PASS |
| 2437 MHz | 12.55 | 2.3 | 30 | PASS |
| 2462 MHz | 4.63 | -4.8 | 30 | PASS |

| E.U.T | WiFi Microscope | Model Name | DMC-2313 |
|---|---|---|---|
| Temperature | 26°C | Relative Humidity | 46% |
| Test Voltage | DC 4.5V | | |
| Test Mode | IEEE 802.11n (40 MHz)/2422 MHz, 2437 MHz, 2452 MHz | | |

| Frequency | Peak Output Power (dBm) | Avg Output Power (dBm) | Peak Output Power LIMIT (dBm) | Result |
|---|---|---|---|---|
| 2422 MHz | 9.91 | -0.23 | 30 | PASS |
| 2437 MHz | 10.17 | -0.17 | 30 | PASS |
| 2452 MHz | 2.41 | -6.89 | 30 | PASS |

# 7 RADIATED SPURIOUS EMISSION (9 KHZ TO 1 GHZ)

## 7.1 LIMIT

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

| Frequency Range: 9 kHz to 1 GHz | | |
|---|---|---|
| FREQUENCY (MHz) | Field Strength (micorvolts/meter) | Measurement Distance (meters) |
| 0.009~0.490 | 2400/F(kHz) | 300 |
| 0.490~1.705 | 24000/F(kHz) | 30 |
| 1.705~30.0 | 30 | 30 |
| 30~88 | 100 | 3 |
| 88~216 | 150 | 3 |
| 216~960 | 200 | 3 |
| Above 960 | 500 | 3 |

| Frequency Range: above 1 GHz | | | | |
|---|---|---|---|---|
| FREQUENCY (MHz) | Class A (dBuV/m) (at 3m) | | Class B (dBuV/m) (at 3m) | |
| | PEAK | AVERAGE | PEAK | AVERAGE |
| above 1 GHz | 80 | 60 | 74 | 54 |

NOTE:

(1) The limit for radiated test was performed according to FCC PART 15B.
(2) The tighter limit applies at the band edges.
(3) Emission level (dBuV/m)=20log Emission level (uV/m).
(4) The test result calculated as following:
Measurement Value = Reading Level + Correct Factor
Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain(if use)
Margin Level = Measurement Value – Limit Value

## 7.2 MEASUREMENT INSTRUMENTS LIST

| Item | Kind of Equipment | Manufacturer | Type No. | Serial No. | Calibrated until |
|---|---|---|---|---|---|
| 1 | Spectrum Analyzer | R&S | FSP-40 | 100129 | Oct. 01, 2013 |
| 2 | Horn Antenna | Schwarzbeck | BBHA 9120 | D-325 | Apr. 16, 2013 |
| 3 | Microwave Pre_amplifier | Agilent | 8449B | 3008A01714 | Apr. 17, 2013 |
| 4 | Microflex Cable | N/A | N/A | 1m | Apr. 14, 2013 |
| 5 | Microflex Cable | AISI | S104-SMAP-1 | 10m | Apr. 14, 2013 |
| 6 | Microflex Cable | N/A | N/A | 3m | Apr. 14, 2013 |
| 7 | Test Cable | N/A | LMR-400 | 966_12m | May. 15, 2013 |
| 8 | Test Cable | N/A | LMR-400 | 966_3m | May. 15, 2013 |
| 9 | Pre-Amplifier | EMC | EMC-330 | 980001 | Jun. 07, 2013 |
| 10 | Log-Bicon Antenna | Schwarzbeck | VULB9168-352 | 9168-352 | Jun. 12, 2013 |
| 11 | Horn Antenna | Schwarzbeck | BBHA 9170 | 187 | Dec. 18, 2012 |

Remark: “N/A” denotes No Model Name, No Serial No. or No Calibration specified.

## 7.3 MEASURING INSTRUMENTS SETTING

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

## 7.4 TEST PROCEDURES

a. The measuring distance of at 3 m shall be used for measurements at frequency up to 1 GHz. For frequencies above 1 GHz, any suitable measuring distance may be used.
b. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3m Semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
c. The height of the equipment or of the substitution antenna shall be 0.8 m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
d. The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
e. If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
f. For the actual test configuration, please refer to the related Item –EUT Test Photos.
g. The testing follows the guidelines in ANSI C63.4 and FCC Public Notice DA 00-705 Measurement Guidelines. In case the emission is fail due to the used RBW/VBW is too wide, marker-delta method of FCC Public Notice DA 00-705 will be followed.

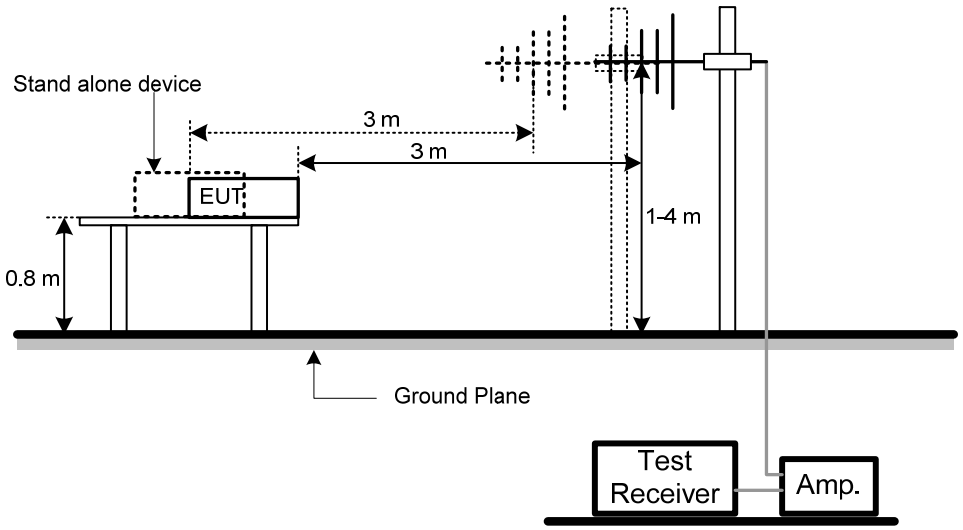
**NOTE:**

a. Reading in which marked as QP or Peak means measurements by using are Quasi-Peak Mode with Detector BW=120 kHz; SPA setting in RBW=100 kHz, VBW =100 kHz, Swp. Time = 0.3 sec./ MHz.
b. All readings are Peak unless otherwise stated QP in column of Note. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn‘t perform.

## 7.5 DEVIATION FROM TEST STANDARD

No deviation

## 7.6 TEST SETUP LAYOUT



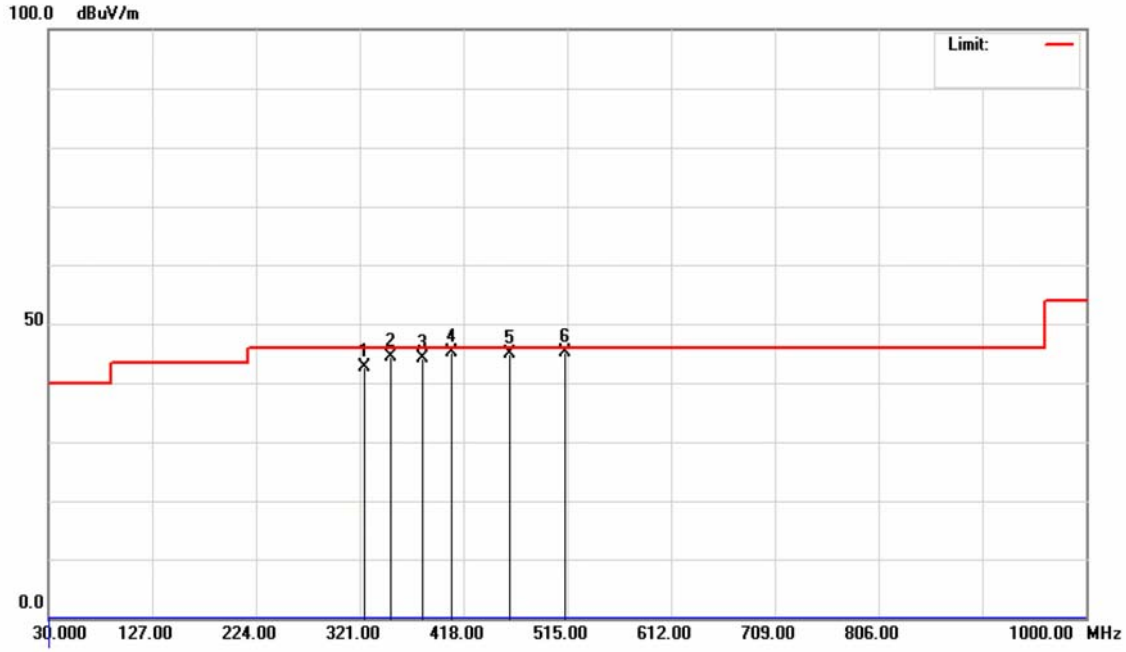
## 7.7 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 4.6 Unless otherwise a special operating condition is specified in the follows during the testing.

## 7.8 TEST RESULTS - 2400-2483.5 MHZ

| | | | |
|---|---|---|---|
| E.U.T | WiFi Microscope | Model Name | DMC-2313 |
| Temperature | 26°C | Relative Humidity | 60% |
| Test Voltage | DC 4.5V | | |
| Test Mode | IEEE 802.11b/2437 MHz | | |

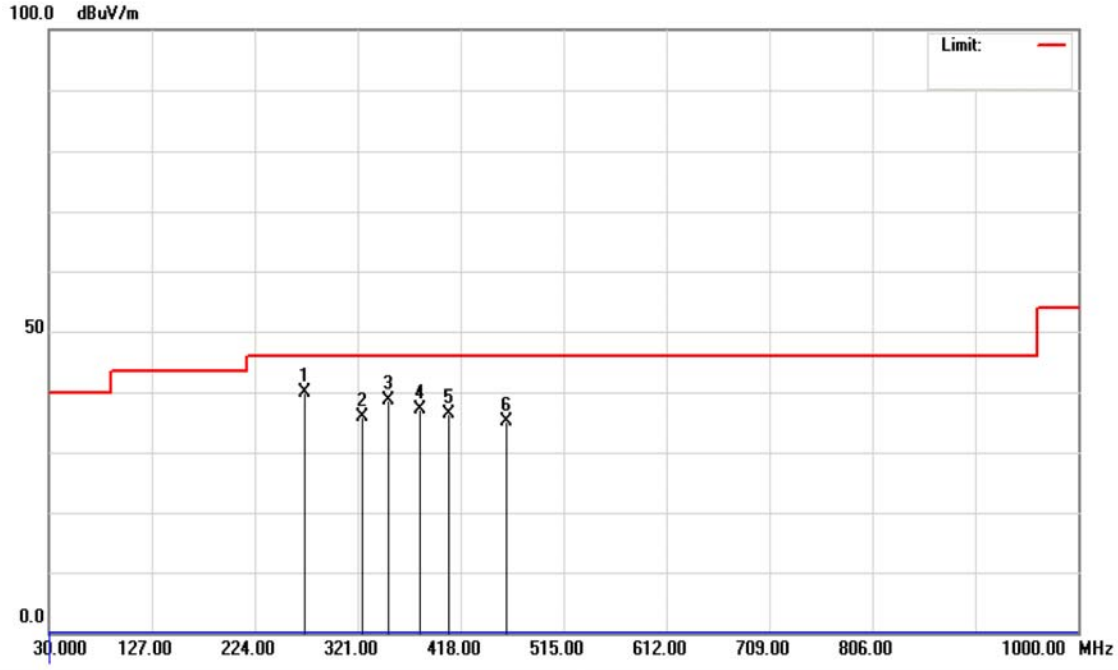
**Polarization: Vertical**




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | | 324.8800 | 60.05 | -17.49 | 42.56 | 46.00 | -3.44 | peak | |
| 2 | | 350.1000 | 61.43 | -17.02 | 44.41 | 46.00 | -1.59 | QP | |
| 3 | | 379.2000 | 60.30 | -16.13 | 44.17 | 46.00 | -1.83 | QP | |
| 4 | * | 406.3599 | 60.56 | -15.34 | 45.22 | 46.00 | -0.78 | QP | |
| 5 | | 460.6800 | 58.97 | -14.04 | 44.93 | 46.00 | -1.07 | QP | |
| 6 | | 513.0600 | 58.22 | -13.13 | 45.09 | 46.00 | -0.91 | QP | |

| E.U.T | WiFi Microscope | Model Name | DMC-2313 |
|---|---|---|---|
| Temperature | 26°C | Relative Humidity | 60% |
| Test Voltage | DC 4.5V | | |
| Test Mode | IEEE 802.11b/2437 MHz | | |

**Polarization: Horizontal**




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | * | 270.5600 | 59.00 | -19.02 | 39.98 | 46.00 | -6.02 | peak | |
| 2 | | 324.8800 | 53.45 | -17.49 | 35.96 | 46.00 | -10.04 | peak | |
| 3 | | 350.1000 | 55.64 | -17.02 | 38.62 | 46.00 | -7.38 | peak | |
| 4 | | 379.2000 | 53.14 | -16.13 | 37.01 | 46.00 | -8.99 | peak | |
| 5 | | 406.3599 | 51.77 | -15.34 | 36.43 | 46.00 | -9.57 | peak | |
| 6 | | 460.6800 | 49.17 | -14.04 | 35.13 | 46.00 | -10.87 | peak | |

# 8 RADIATED SPURIOUS EMISSION (ABOVE 1 GHZ)

## 8.1 LIMIT

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

| Frequency Range: 9 kHz to 1 GHz | | |
|---|---|---|
| FREQUENCY (MHz) | Field Strength (micorvolts/meter) | Measurement Distance (meters) |
| 0.009~0.490 | 2400/F(kHz) | 300 |
| 0.490~1.705 | 24000/F(kHz) | 30 |
| 1.705~30.0 | 30 | 30 |
| 30~88 | 100 | 3 |
| 88~216 | 150 | 3 |
| 216~960 | 200 | 3 |
| Above 960 | 500 | 3 |

| Frequency Range: above 1 GHz | | | | |
|---|---|---|---|---|
| FREQUENCY (MHz) | Class A (dBuV/m) (at 3m) | | Class B (dBuV/m) (at 3m) | |
| | PEAK | AVERAGE | PEAK | AVERAGE |
| above 1 GHz | 80 | 60 | 74 | 54 |

NOTE:

(1) The limit for radiated test was performed according to FCC PART 15B.
(2) The tighter limit applies at the band edges.
(3) Emission level (dBuV/m)=20log Emission level (uV/m).
(4) The test result calculated as following:
Measurement Value = Reading Level + Correct Factor
Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain(if use)
Margin Level = Measurement Value – Limit Value

## 8.2 MEASUREMENT INSTRUMENTS LIST

| Item | Kind of Equipment | Manufacturer | Type No. | Serial No. | Calibrated until |
|---|---|---|---|---|---|
| 1 | Spectrum Analyzer | R&S | FSP-40 | 100129 | Oct. 01, 2013 |
| 2 | Horn Antenna | Schwarzbeck | BBHA 9120 | D-325 | Apr. 16, 2013 |
| 3 | Microwave Pre_amplifier | Agilent | 8449B | 3008A01714 | Apr. 17, 2013 |
| 4 | Microflex Cable | N/A | N/A | 1m | Apr. 14, 2013 |
| 5 | Microflex Cable | AISI | S104-SMAP-1 | 10m | Apr. 14, 2013 |
| 6 | Microflex Cable | N/A | N/A | 3m | Apr. 14, 2013 |
| 7 | Test Cable | N/A | LMR-400 | 966_12m | May. 15, 2013 |
| 8 | Test Cable | N/A | LMR-400 | 966_3m | May. 15, 2013 |
| 9 | Pre-Amplifier | EMC | EMC-330 | 980001 | Jun. 07, 2013 |
| 10 | Log-Bicon Antenna | Schwarzbeck | VULB9168-352 | 9168-352 | Jun. 12, 2013 |
| 11 | Horn Antenna | Schwarzbeck | BBHA 9170 | 187 | Dec. 18, 2012 |

Remark: “N/A” denotes No Model Name, No Serial No. or No Calibration specified.

## 8.3 MEASURING INSTRUMENTS SETTING

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

## 8.4 TEST PROCEDURES

a. The measuring distance of at 3 m shall be used for measurements at frequency up to 1 GHz. For frequencies above 1 GHz, any suitable measuring distance may be used.
b. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3m Semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
c. The height of the equipment or of the substitution antenna shall be 0.8 m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
d. The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
e. If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
f. For the actual test configuration, please refer to the related Item –EUT Test Photos.
g. The testing follows the guidelines in ANSI C63.4 and FCC Public Notice DA 00-705 Measurement Guidelines. In case the emission is fail due to the used RBW/VBW is too wide, marker-delta method of FCC Public Notice DA 00-705 will be followed.

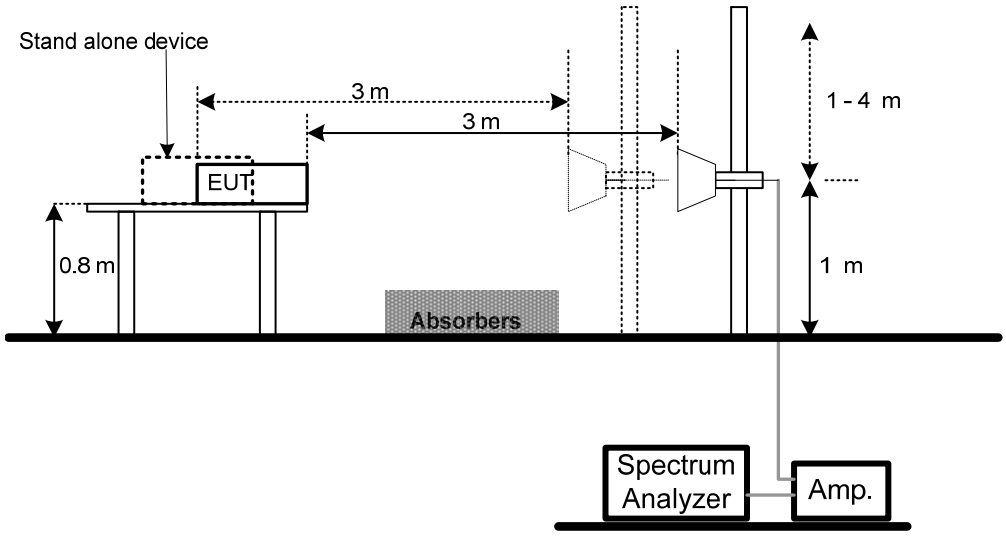
**NOTE:**

a. Reading in which marked as Peak means measurements by using are Peak Mode with instrument setting in RBW= 1 MHz, VBW= 1 MHz, Swp. Time = Auto.
Reading in which marked as AV means measurements by using are Average Mode with instrument setting in RBW= 1 MHz, VBW= 10 Hz, Swp. Time = Auto.
b. All readings are Peak Mode value unless otherwise stated AVG in column of Note. If the Peak Mode Measured value compliance with the Peak Limits and lower than AVG Limits, the EUT shall be deemed to meet both Peak & AVG Limits and then only Peak Mode was measured, but AVG Mode didn't perform.

## 8.5 DEVIATION FROM TEST STANDARD

No deviation

## 8.6 TEST SETUP LAYOUT



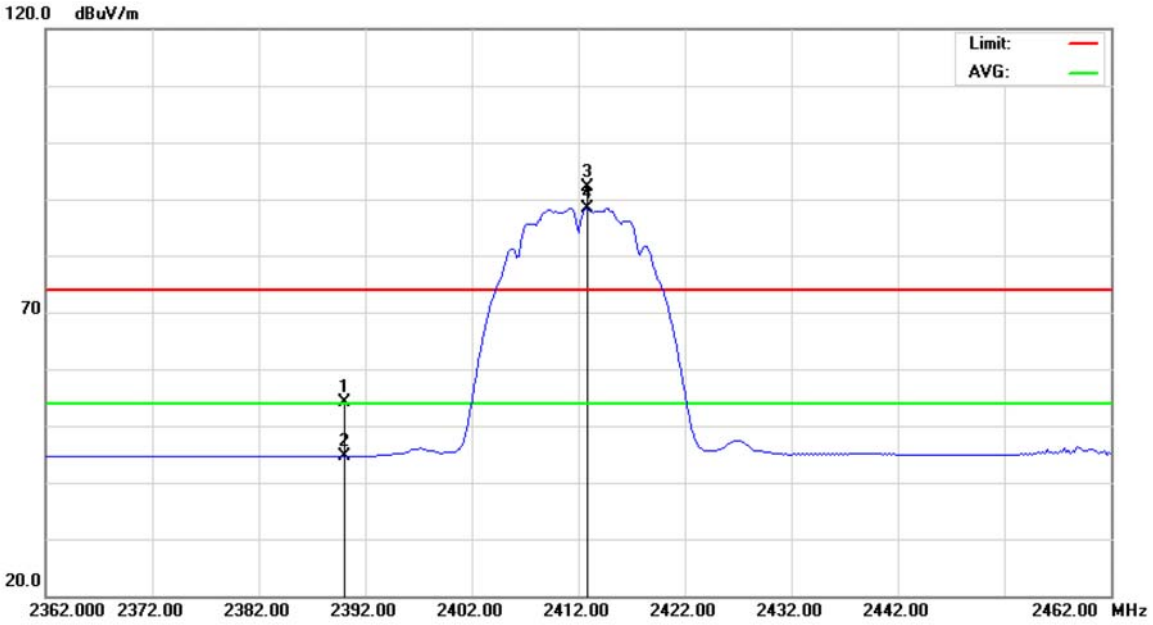
## 8.7 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 4.6 Unless otherwise a special operating condition is specified in the follows during the testing.

## 8.8 TEST RESULTS - 2400-2483.5 MHZ

| | | | |
|---|---|---|---|
| E.U.T | WiFi Microscope | Model Name | DMC-2313 |
| Temperature | 26°C | Relative Humidity | 60% |
| Test Voltage | DC 4.5V | | |
| Test Mode | IEEE 802.11b/2412 MHz | | |

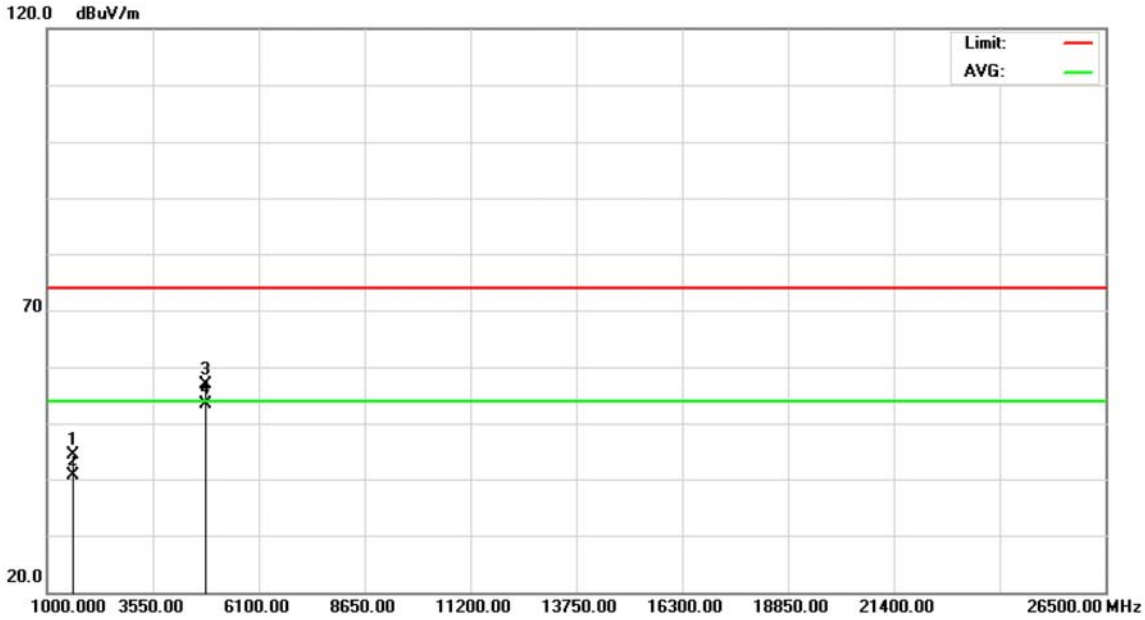
**Polarization: Vertical**




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | | 2390.000 | 20.98 | 33.23 | 54.21 | 74.00 | -19.79 | peak | |
| 2 | | 2390.000 | 11.37 | 33.23 | 44.60 | 54.00 | -9.40 | AVG | |
| 3 | X | 2412.800 | 58.69 | 33.33 | 92.02 | 74.00 | 18.02 | peak | |
| 4 | * | 2412.800 | 55.10 | 33.33 | 88.43 | 54.00 | 34.43 | AVG | |

| E.U.T | WiFi Microscope | Model Name | DMC-2313 |
|---|---|---|---|
| Temperature | 26°C | Relative Humidity | 60% |
| Test Voltage | DC 4.5V | | |
| Test Mode | IEEE 802.11b/2412 MHz | | |

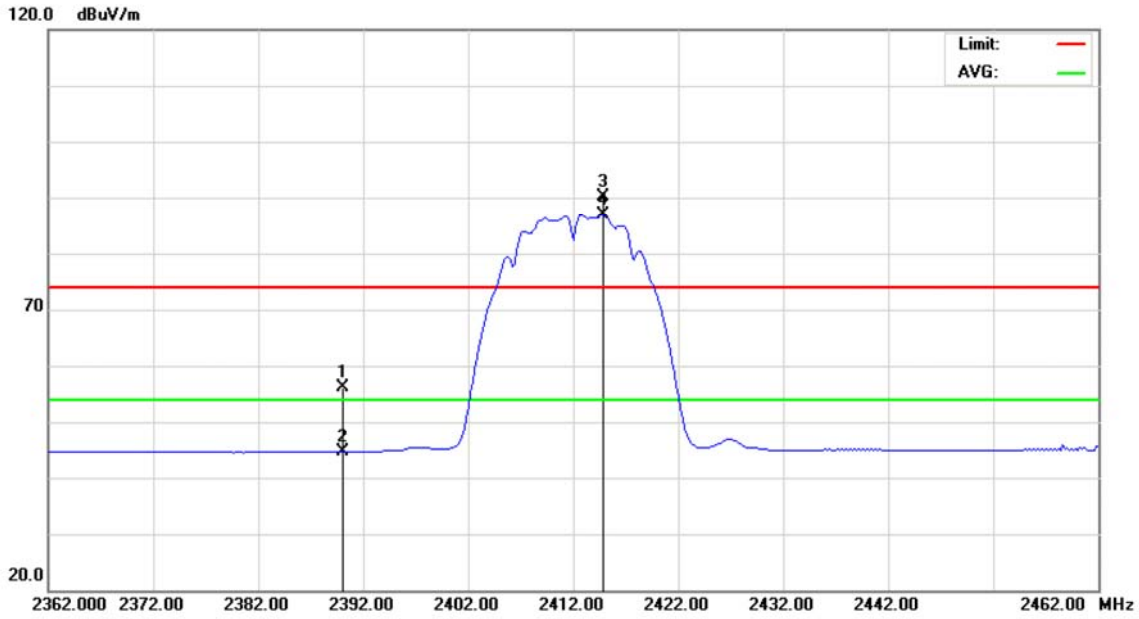
**Polarization: Vertical**




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | | 1608.040 | 47.71 | -3.33 | 44.38 | 74.00 | -29.62 | peak | |
| 2 | | 1608.040 | 44.00 | -3.33 | 40.67 | 54.00 | -13.33 | AVG | |
| 3 | | 4823.960 | 49.31 | 7.55 | 56.86 | 74.00 | -17.14 | peak | |
| 4 | * | 4823.960 | 45.82 | 7.55 | 53.37 | 54.00 | -0.63 | AVG | |

| E.U.T | WiFi Microscope | Model Name | DMC-2313 |
|---|---|---|---|
| Temperature | 26°C | Relative Humidity | 60% |
| Test Voltage | DC 4.5V | | |
| Test Mode | IEEE 802.11b/2412 MHz | | |

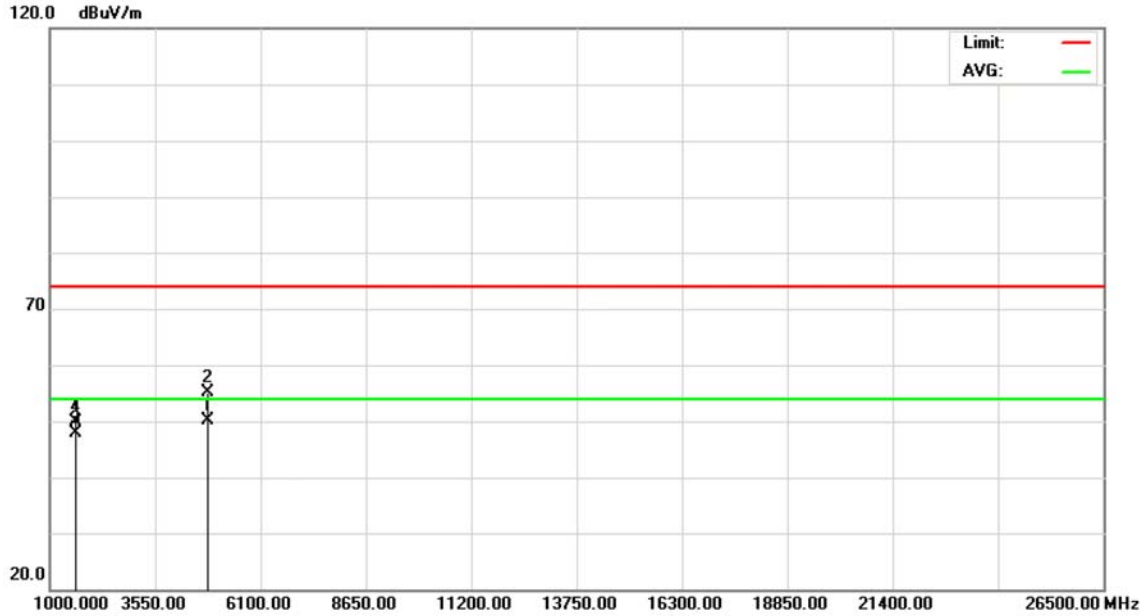
**Polarization: Horizontal**




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | | 2390.000 | 22.81 | 33.23 | 56.04 | 74.00 | -17.96 | peak | |
| 2 | | 2390.000 | 11.35 | 33.23 | 44.58 | 54.00 | -9.42 | AVG | |
| 3 | X | 2414.800 | 56.81 | 33.34 | 90.15 | 74.00 | 16.15 | peak | |
| 4 | * | 2414.800 | 53.62 | 33.34 | 86.96 | 54.00 | 32.96 | AVG | |

| E.U.T | WiFi Microscope | Model Name | DMC-2313 |
|---|---|---|---|
| Temperature | 26°C | Relative Humidity | 60% |
| Test Voltage | DC 4.5V | | |
| Test Mode | IEEE 802.11b/2412 MHz | | |

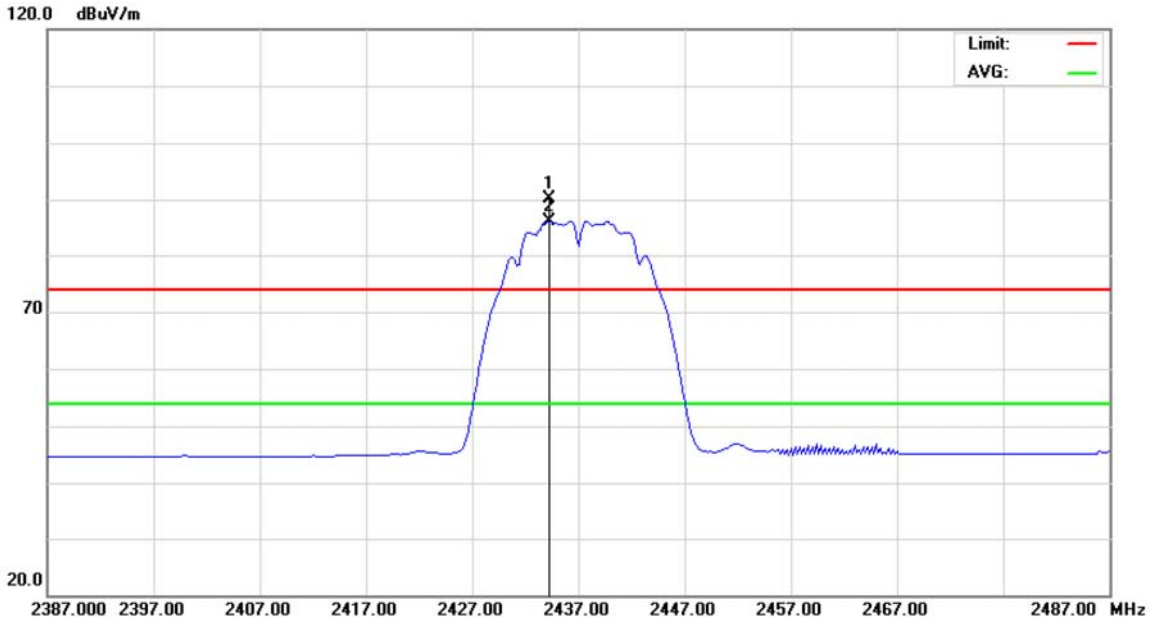
**Polarization: Horizontal**




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | * | 4823.960 | 42.70 | 7.55 | 50.25 | 54.00 | -3.75 | AVG | |
| 2 | | 4823.960 | 47.55 | 7.55 | 55.10 | 74.00 | -18.90 | peak | |
| 3 | | 1607.980 | 51.14 | -3.33 | 47.81 | 54.00 | -6.19 | AVG | |
| 4 | | 1607.980 | 53.26 | -3.33 | 49.93 | 74.00 | -24.07 | peak | |

| E.U.T | WiFi Microscope | Model Name | DMC-2313 |
|---|---|---|---|
| Temperature | 26°C | Relative Humidity | 60% |
| Test Voltage | DC 4.5V | | |
| Test Mode | IEEE 802.11b/2437 MHz | | |

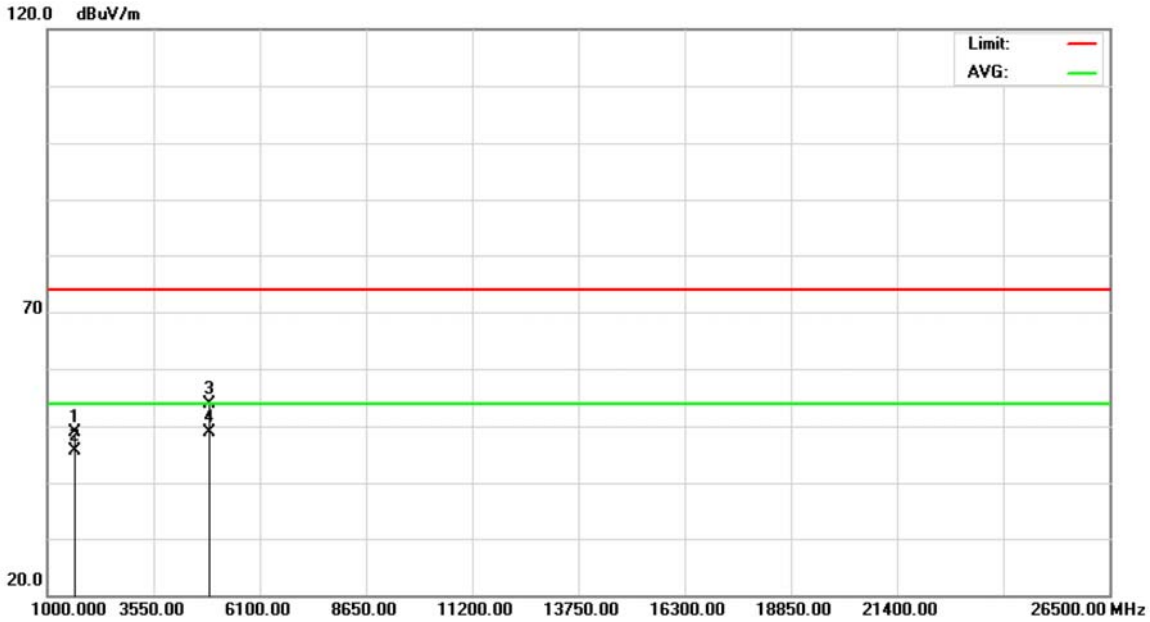
**Polarization: Vertical**




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | X | 2434.200 | 56.61 | 33.42 | 90.03 | 74.00 | 16.03 | peak | |
| 2 | * | 2434.200 | 52.78 | 33.42 | 86.20 | 54.00 | 32.20 | AVG | |

| E.U.T | WiFi Microscope | Model Name | DMC-2313 |
|---|---|---|---|
| Temperature | 26°C | Relative Humidity | 60% |
| Test Voltage | DC 4.5V | | |
| Test Mode | IEEE 802.11b/2437 MHz | | |

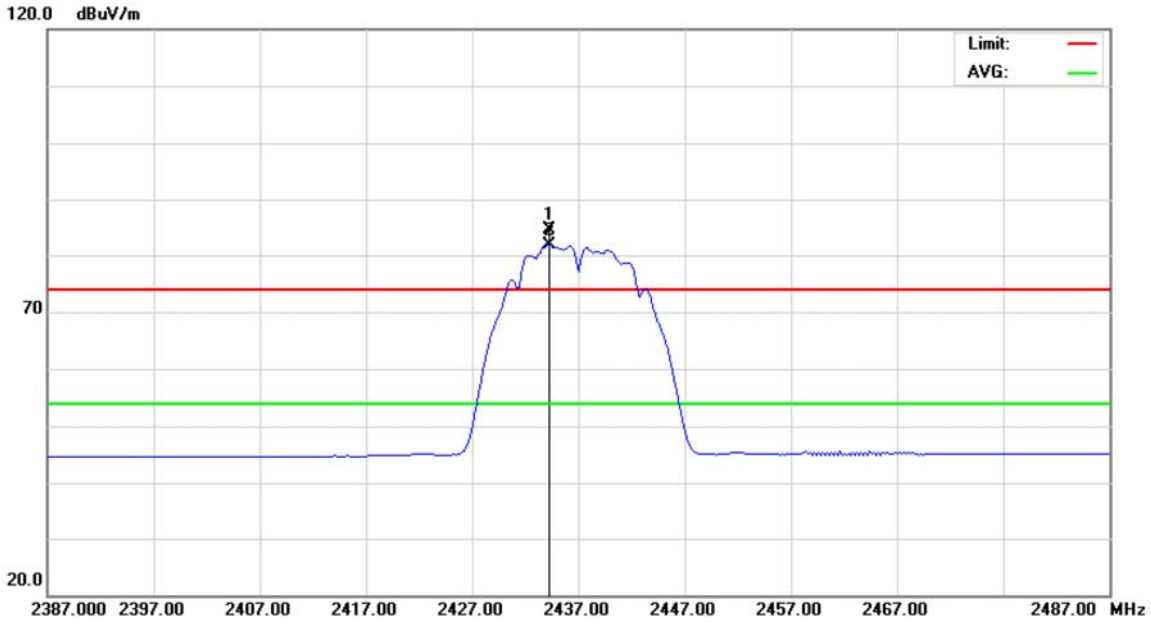
**Polarization: Vertical**




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | | 1624.680 | 52.12 | -3.29 | 48.83 | 74.00 | -25.17 | peak | |
| 2 | | 1624.680 | 49.01 | -3.29 | 45.72 | 54.00 | -8.28 | AVG | |
| 3 | | 4874.000 | 46.23 | 7.74 | 53.97 | 74.00 | -20.03 | peak | |
| 4 | * | 4874.000 | 41.14 | 7.74 | 48.88 | 54.00 | -5.12 | AVG | |

| E.U.T | WiFi Microscope | Model Name | DMC-2313 |
|---|---|---|---|
| Temperature | 26°C | Relative Humidity | 60% |
| Test Voltage | DC 4.5V | | |
| Test Mode | IEEE 802.11b/2437 MHz | | |

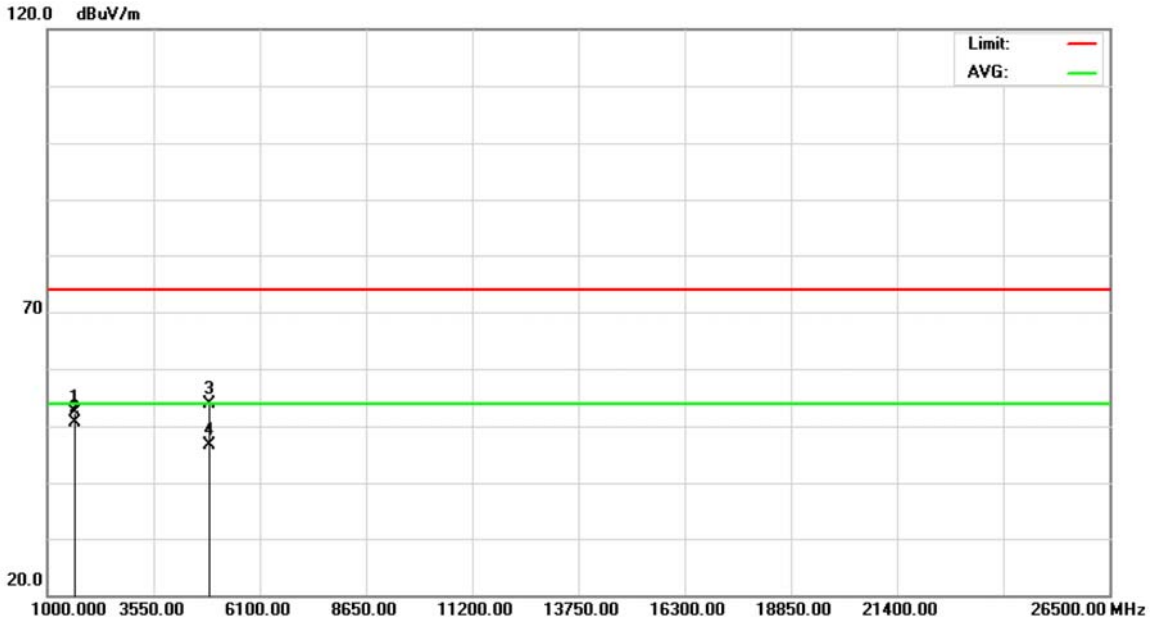
**Polarization: Horizontal**




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | X | 2434.200 | 51.26 | 33.42 | 84.68 | 74.00 | 10.68 | peak | |
| 2 | * | 2434.200 | 48.42 | 33.42 | 81.84 | 54.00 | 27.84 | AVG | |

| E.U.T | WiFi Microscope | Model Name | DMC-2313 |
|---|---|---|---|
| Temperature | 26°C | Relative Humidity | 60% |
| Test Voltage | DC 4.5V | | |
| Test Mode | IEEE 802.11b/2437 MHz | | |

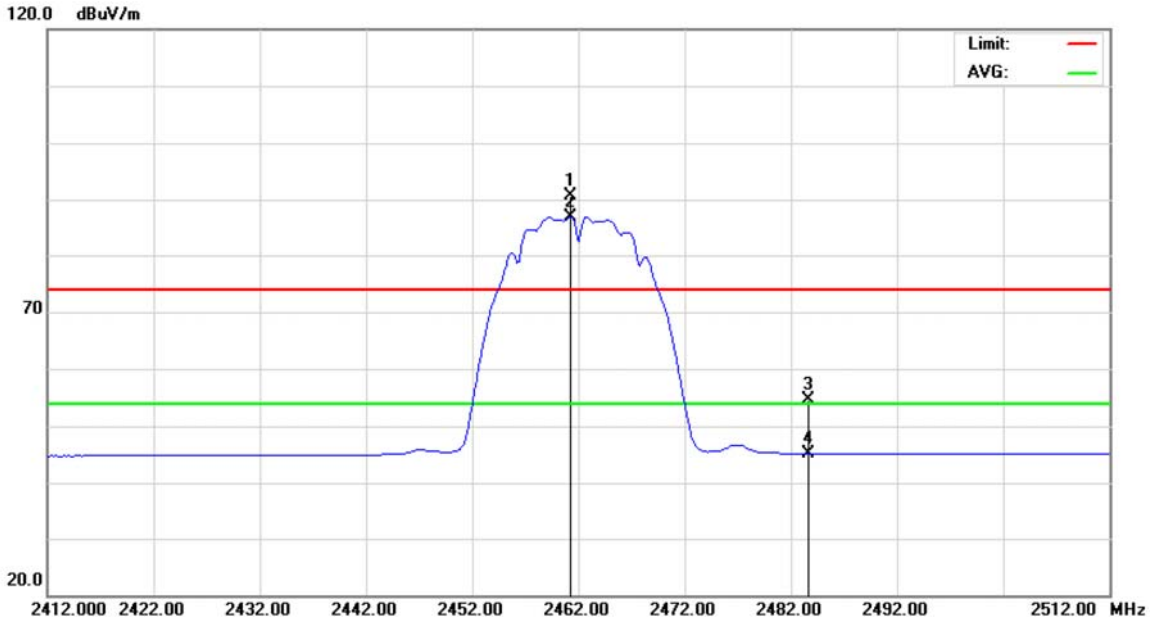
**Polarization: Horizontal**




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | | 1624.680 | 55.60 | -3.29 | 52.31 | 74.00 | -21.69 | peak | |
| 2 | * | 1624.680 | 53.94 | -3.29 | 50.65 | 54.00 | -3.35 | AVG | |
| 3 | | 4874.000 | 46.06 | 7.74 | 53.80 | 74.00 | -20.20 | peak | |
| 4 | | 4874.000 | 39.01 | 7.74 | 46.75 | 54.00 | -7.25 | AVG | |

| E.U.T | WiFi Microscope | Model Name | DMC-2313 |
|---|---|---|---|
| Temperature | 26°C | Relative Humidity | 60% |
| Test Voltage | DC 4.5V | | |
| Test Mode | IEEE 802.11b/2462 MHz | | |

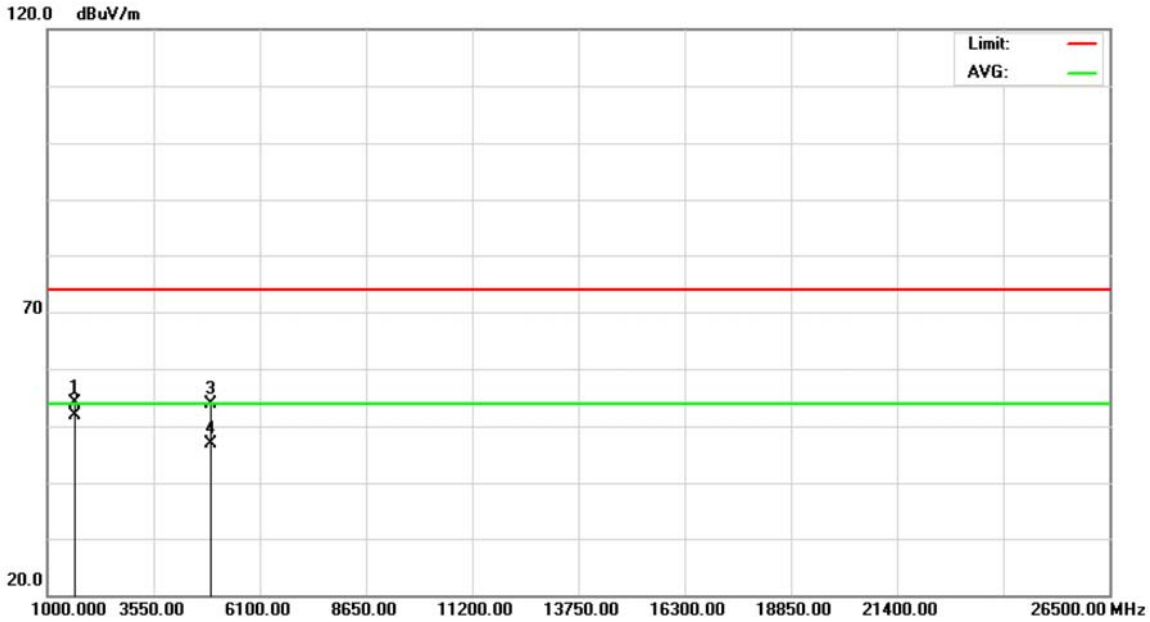
**Polarization: Vertical**




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | X | 2461.200 | 57.13 | 33.54 | 90.67 | 74.00 | 16.67 | peak | |
| 2 | * | 2461.200 | 53.34 | 33.54 | 86.88 | 54.00 | 32.88 | AVG | |
| 3 | | 2483.500 | 20.91 | 33.64 | 54.55 | 74.00 | -19.45 | peak | |
| 4 | | 2483.500 | 11.45 | 33.64 | 45.09 | 54.00 | -8.91 | AVG | |

| E.U.T | WiFi Microscope | Model Name | DMC-2313 |
|---|---|---|---|
| Temperature | 26°C | Relative Humidity | 60% |
| Test Voltage | DC 4.5V | | |
| Test Mode | IEEE 802.11b/2462 MHz | | |

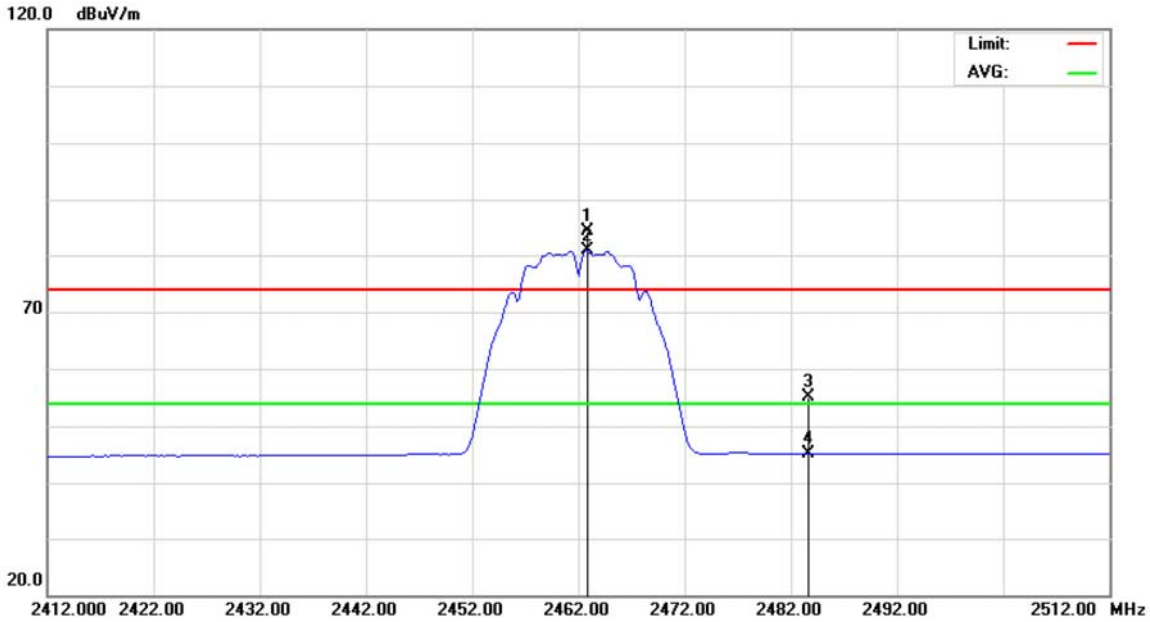
**Polarization: Vertical**




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | | 1641.320 | 57.33 | -3.24 | 54.09 | 74.00 | -19.91 | peak | |
| 2 | * | 1641.320 | 55.08 | -3.24 | 51.84 | 54.00 | -2.16 | AVG | |
| 3 | | 4923.920 | 45.83 | 7.93 | 53.76 | 74.00 | -20.24 | peak | |
| 4 | | 4923.920 | 38.97 | 7.93 | 46.90 | 54.00 | -7.10 | AVG | |

| E.U.T | WiFi Microscope | Model Name | DMC-2313 |
|---|---|---|---|
| Temperature | 26°C | Relative Humidity | 60% |
| Test Voltage | DC 4.5V | | |
| Test Mode | IEEE 802.11b/2462 MHz | | |

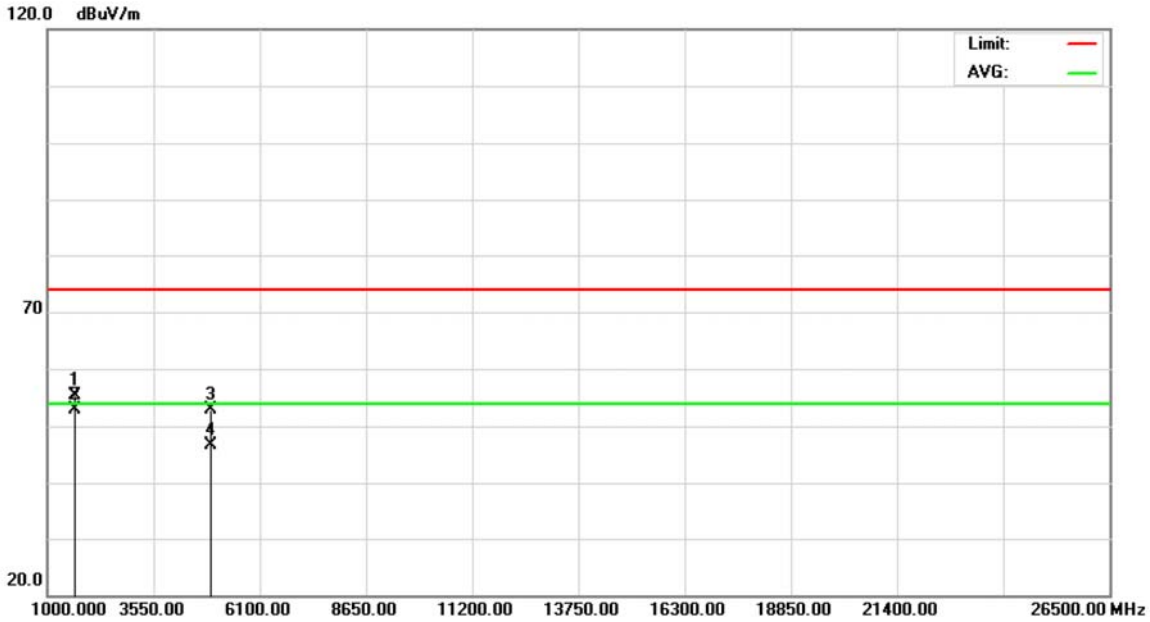
**Polarization: Horizontal**




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | X | 2462.800 | 50.81 | 33.55 | 84.36 | 74.00 | 10.36 | peak | |
| 2 | * | 2462.800 | 47.22 | 33.55 | 80.77 | 54.00 | 26.77 | AVG | |
| 3 | | 2483.500 | 21.58 | 33.64 | 55.22 | 74.00 | -18.78 | peak | |
| 4 | | 2483.500 | 11.38 | 33.64 | 45.02 | 54.00 | -8.98 | AVG | |

| E.U.T | WiFi Microscope | Model Name | DMC-2313 |
|---|---|---|---|
| Temperature | 26°C | Relative Humidity | 60% |
| Test Voltage | DC 4.5V | | |
| Test Mode | IEEE 802.11b/2462 MHz | | |

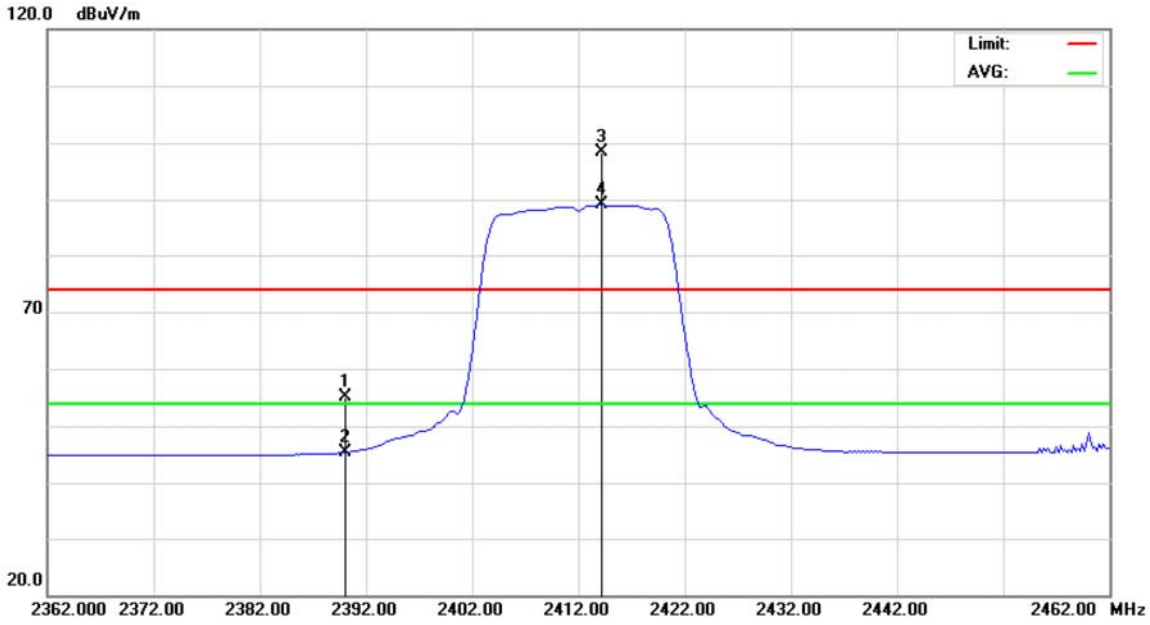
**Polarization: Horizontal**




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | | 1641.320 | 58.54 | -3.24 | 55.30 | 74.00 | -18.70 | peak | |
| 2 | * | 1641.320 | 56.13 | -3.24 | 52.89 | 54.00 | -1.11 | AVG | |
| 3 | | 4924.040 | 45.06 | 7.93 | 52.99 | 74.00 | -21.01 | peak | |
| 4 | | 4924.040 | 38.81 | 7.93 | 46.74 | 54.00 | -7.26 | AVG | |

| E.U.T | WiFi Microscope | Model Name | DMC-2313 |
|---|---|---|---|
| Temperature | 26°C | Relative Humidity | 60% |
| Test Voltage | DC 4.5V | | |
| Test Mode | IEEE 802.11g/2412 MHz | | |

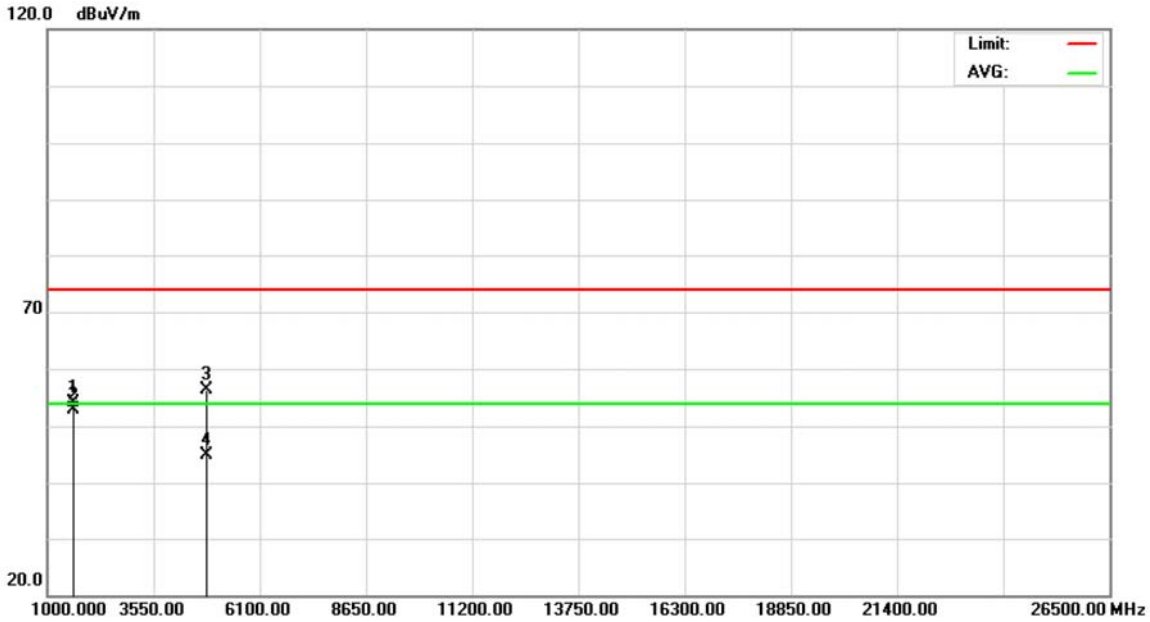
**Polarization: Vertical**




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | | 2390.000 | 21.63 | 33.42 | 55.05 | 74.00 | -18.95 | peak | |
| 2 | | 2390.000 | 11.93 | 33.42 | 45.35 | 54.00 | -8.65 | AVG | |
| 3 | X | 2414.200 | 64.83 | 33.55 | 98.38 | 74.00 | 24.38 | peak | |
| 4 | * | 2414.200 | 55.50 | 33.55 | 89.05 | 54.00 | 35.05 | AVG | |

| E.U.T | WiFi Microscope | Model Name | DMC-2313 |
|---|---|---|---|
| Temperature | 26°C | Relative Humidity | 60% |
| Test Voltage | DC 4.5V | | |
| Test Mode | IEEE 802.11g/2412 MHz | | |

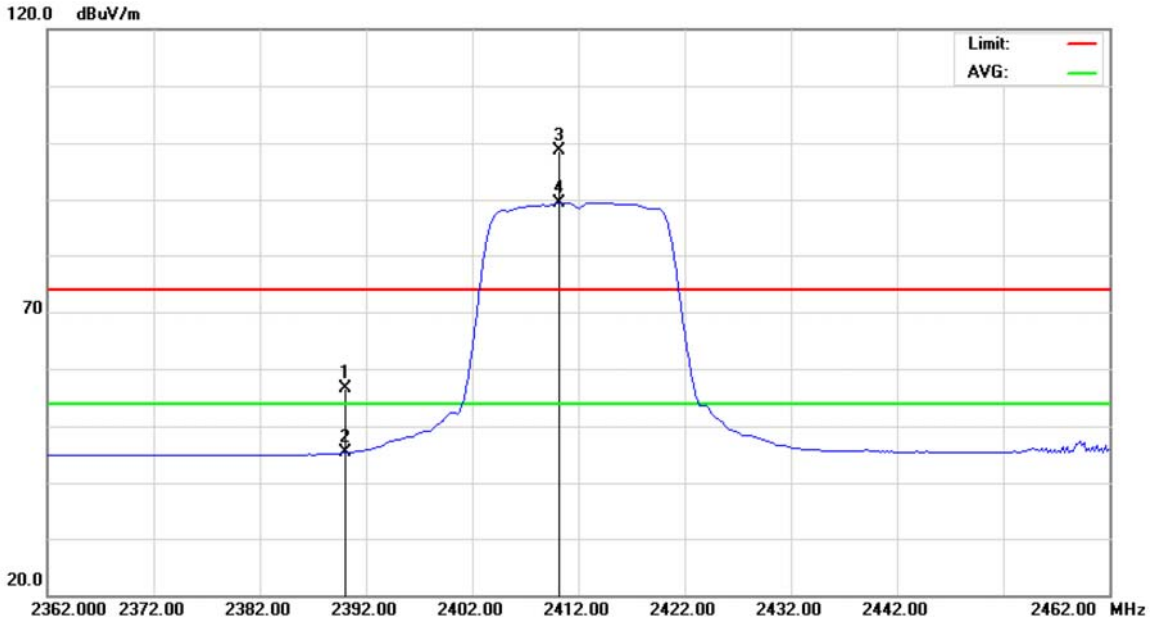
**Polarization: Vertical**




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | | 1607.980 | 57.69 | -3.61 | 54.08 | 74.00 | -19.92 | peak | |
| 2 | * | 1607.980 | 56.44 | -3.61 | 52.83 | 54.00 | -1.17 | AVG | |
| 3 | | 4823.860 | 48.83 | 7.49 | 56.32 | 74.00 | -17.68 | peak | |
| 4 | | 4823.860 | 37.31 | 7.49 | 44.80 | 54.00 | -9.20 | AVG | |

| E.U.T | WiFi Microscope | Model Name | DMC-2313 |
|---|---|---|---|
| Temperature | 26°C | Relative Humidity | 60% |
| Test Voltage | DC 4.5V | | |
| Test Mode | IEEE 802.11g/2412 MHz | | |

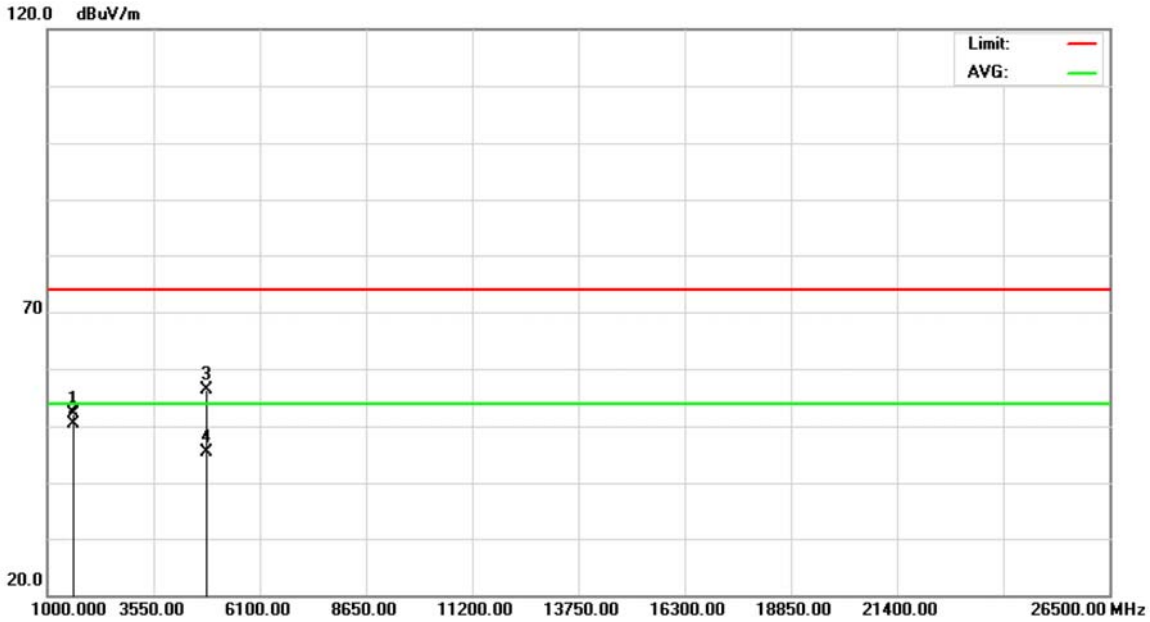
**Polarization: Horizontal**




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | | 2390.000 | 23.24 | 33.42 | 56.66 | 74.00 | -17.34 | peak | |
| 2 | | 2390.000 | 11.86 | 33.42 | 45.28 | 54.00 | -8.72 | AVG | |
| 3 | X | 2410.200 | 65.03 | 33.53 | 98.56 | 74.00 | 24.56 | peak | |
| 4 | * | 2410.200 | 55.91 | 33.53 | 89.44 | 54.00 | 35.44 | AVG | |

| E.U.T | WiFi Microscope | Model Name | DMC-2313 |
|---|---|---|---|
| Temperature | 26°C | Relative Humidity | 60% |
| Test Voltage | DC 4.5V | | |
| Test Mode | IEEE 802.11g/2412 MHz | | |

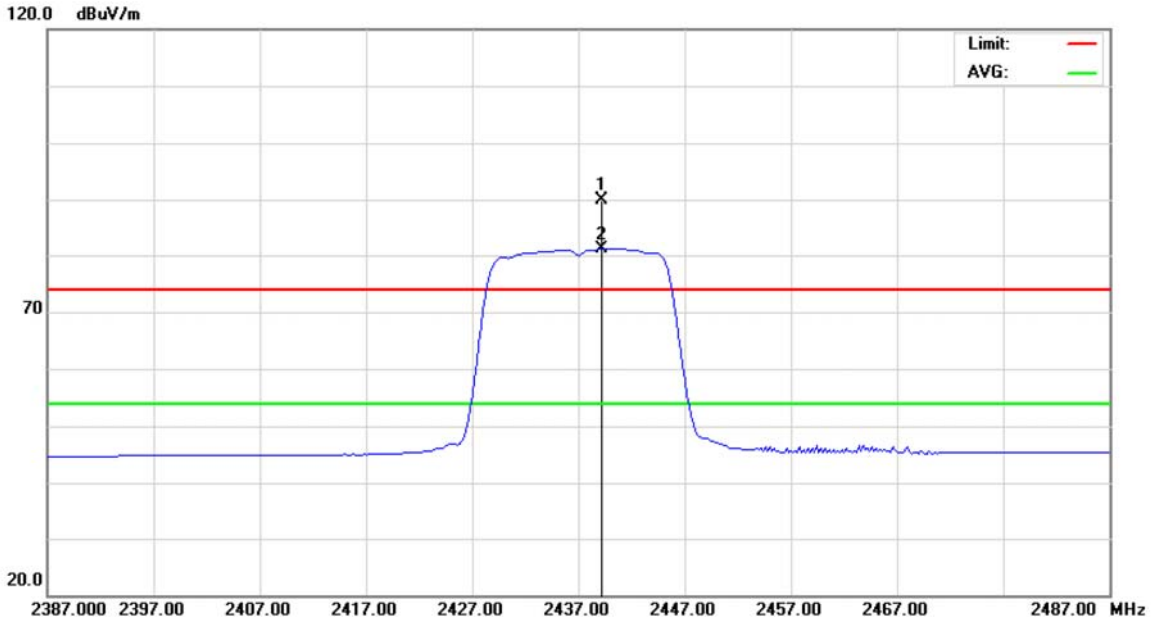
**Polarization: Horizontal**




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | | 1607.990 | 55.78 | -3.61 | 52.17 | 74.00 | -21.83 | peak | |
| 2 | * | 1607.990 | 53.94 | -3.61 | 50.33 | 54.00 | -3.67 | AVG | |
| 3 | | 4823.760 | 48.83 | 7.49 | 56.32 | 74.00 | -17.68 | peak | |
| 4 | | 4823.760 | 37.88 | 7.49 | 45.37 | 54.00 | -8.63 | AVG | |

| E.U.T | WiFi Microscope | Model Name | DMC-2313 |
|---|---|---|---|
| Temperature | 26°C | Relative Humidity | 60% |
| Test Voltage | DC 4.5V | | |
| Test Mode | IEEE 802.11g/2437 MHz | | |

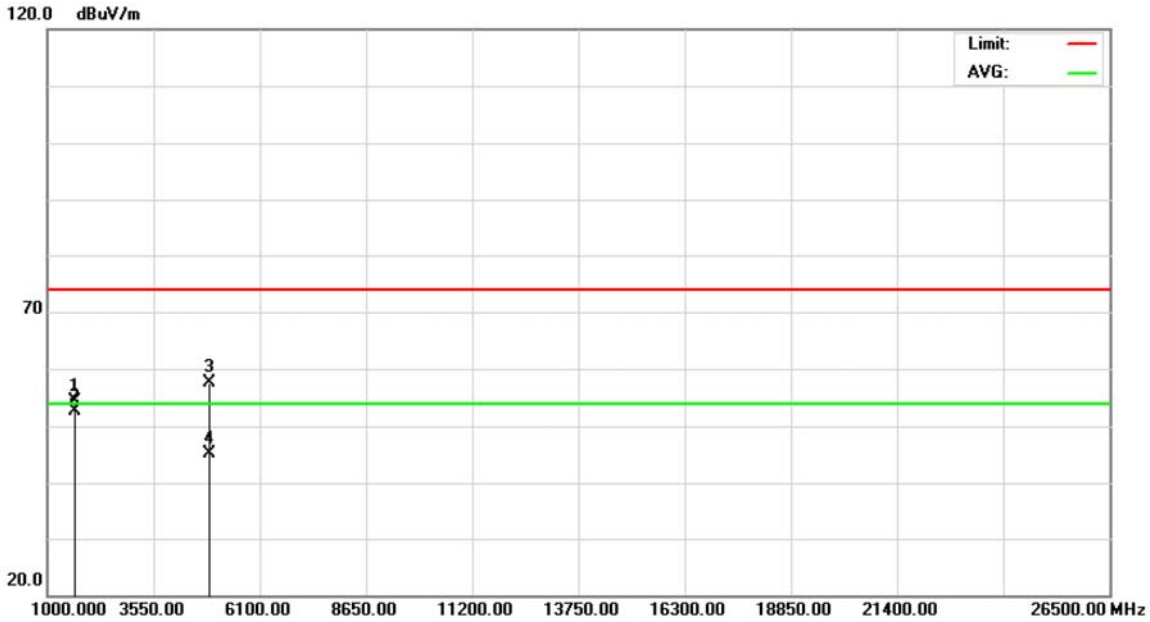
**Polarization: Vertical**




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | X | 2439.200 | 56.26 | 33.69 | 89.95 | 74.00 | 15.95 | peak | |
| 2 | * | 2439.200 | 47.41 | 33.69 | 81.10 | 54.00 | 27.10 | AVG | |

| E.U.T | WiFi Microscope | Model Name | DMC-2313 |
|---|---|---|---|
| Temperature | 26°C | Relative Humidity | 60% |
| Test Voltage | DC 4.5V | | |
| Test Mode | IEEE 802.11g/2437 MHz | | |

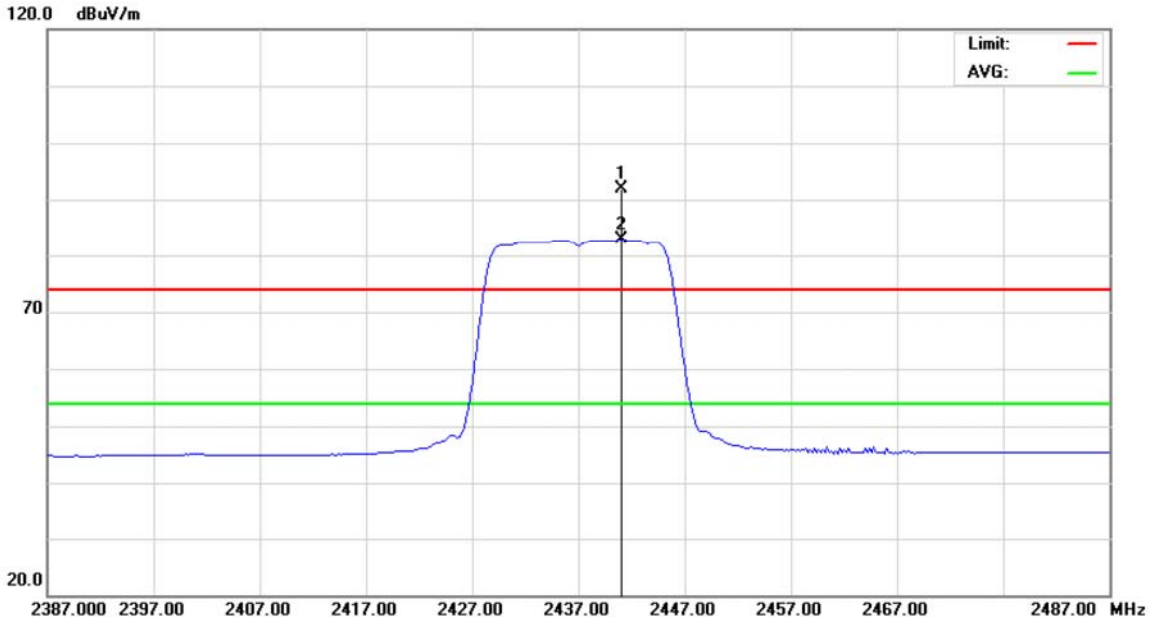
**Polarization: Vertical**




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | | 1624.660 | 57.94 | -3.56 | 54.38 | 74.00 | -19.62 | peak | |
| 2 | * | 1624.660 | 56.27 | -3.56 | 52.71 | 54.00 | -1.29 | AVG | |
| 3 | | 4874.020 | 50.03 | 7.67 | 57.70 | 74.00 | -16.30 | peak | |
| 4 | | 4874.020 | 37.36 | 7.67 | 45.03 | 54.00 | -8.97 | AVG | |

| E.U.T | WiFi Microscope | Model Name | DMC-2313 |
|---|---|---|---|
| Temperature | 26°C | Relative Humidity | 60% |
| Test Voltage | DC 4.5V | | |
| Test Mode | IEEE 802.11g/2437 MHz | | |

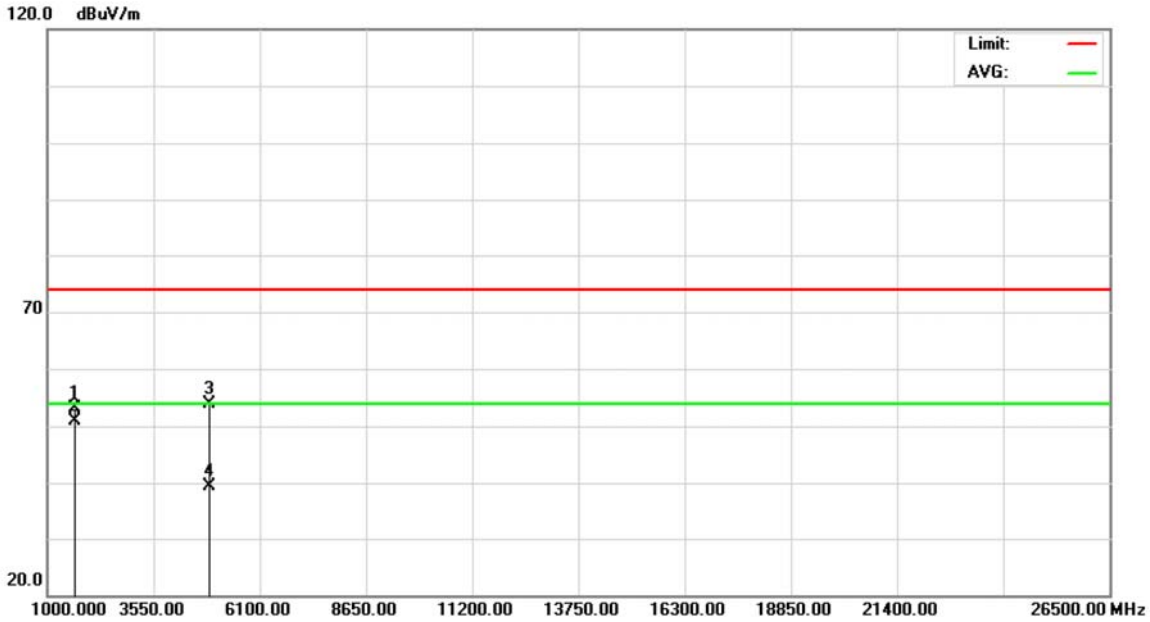
**Polarization: Horizontal**




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | X | 2441.000 | 58.30 | 33.69 | 91.99 | 74.00 | 17.99 | peak | |
| 2 | * | 2441.000 | 49.09 | 33.69 | 82.78 | 54.00 | 28.78 | AVG | |

| E.U.T | WiFi Microscope | Model Name | DMC-2313 |
|---|---|---|---|
| Temperature | 26°C | Relative Humidity | 60% |
| Test Voltage | DC 4.5V | | |
| Test Mode | IEEE 802.11g/2437 MHz | | |

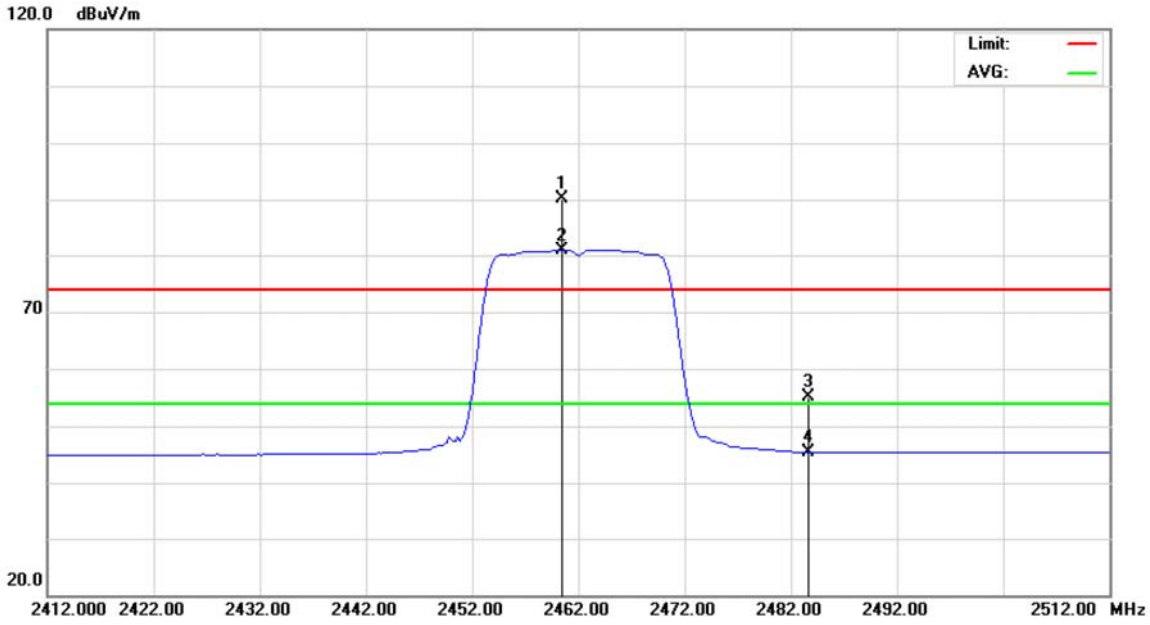
**Polarization: Horizontal**




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | | 1624.660 | 56.57 | -3.56 | 53.01 | 74.00 | -20.99 | peak | |
| 2 | * | 1624.660 | 54.51 | -3.56 | 50.95 | 54.00 | -3.05 | AVG | |
| 3 | | 4874.140 | 46.32 | 7.67 | 53.99 | 74.00 | -20.01 | peak | |
| 4 | | 4874.140 | 31.80 | 7.67 | 39.47 | 54.00 | -14.53 | AVG | |

| E.U.T | WiFi Microscope | Model Name | DMC-2313 |
|---|---|---|---|
| Temperature | 26°C | Relative Humidity | 60% |
| Test Voltage | DC 4.5V | | |
| Test Mode | IEEE 802.11g/2462 MHz | | |

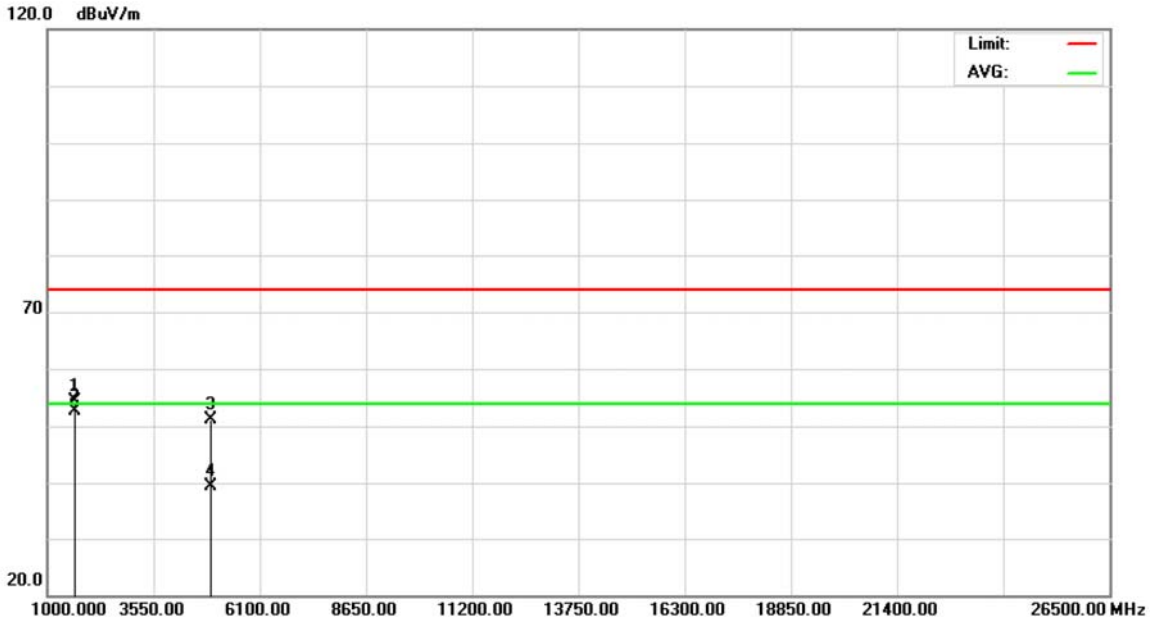
**Polarization: Vertical**




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | X | 2460.400 | 56.29 | 33.80 | 90.09 | 74.00 | 16.09 | peak | |
| 2 | * | 2460.400 | 47.18 | 33.80 | 80.98 | 54.00 | 26.98 | AVG | |
| 3 | | 2483.500 | 21.17 | 33.92 | 55.09 | 74.00 | -18.91 | peak | |
| 4 | | 2483.500 | 11.50 | 33.92 | 45.42 | 54.00 | -8.58 | AVG | |

| E.U.T | WiFi Microscope | Model Name | DMC-2313 |
|---|---|---|---|
| Temperature | 26°C | Relative Humidity | 60% |
| Test Voltage | DC 4.5V | | |
| Test Mode | IEEE 802.11g/2462 MHz | | |

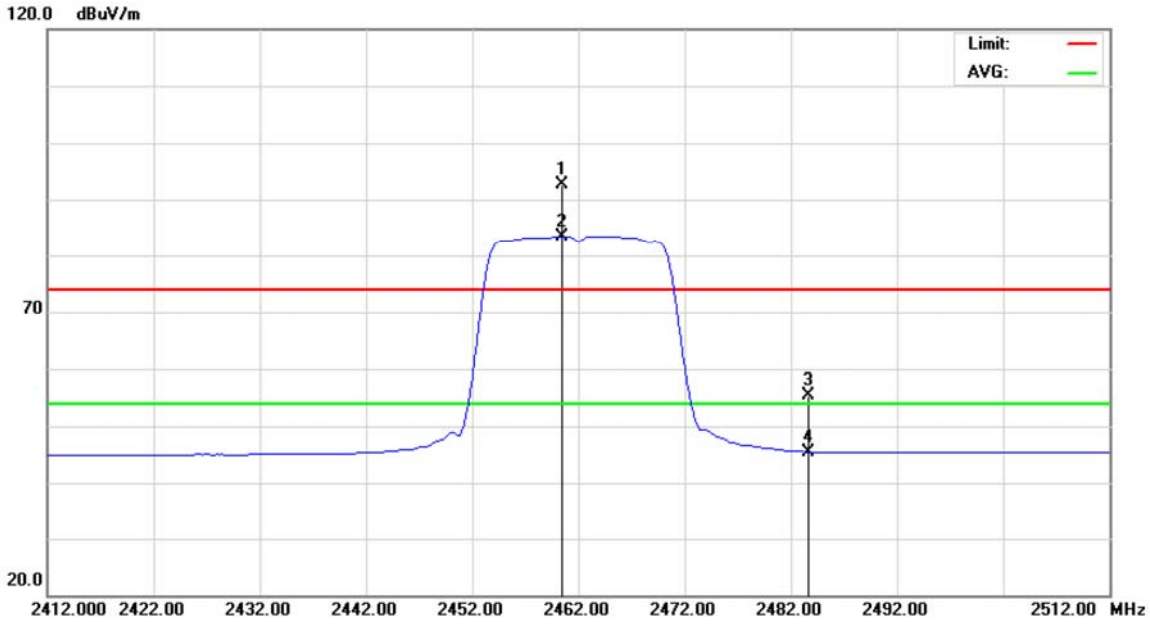
**Polarization: Vertical**




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | | 1641.360 | 57.83 | -3.52 | 54.31 | 74.00 | -19.69 | peak | |
| 2 | * | 1641.360 | 56.16 | -3.52 | 52.64 | 54.00 | -1.36 | AVG | |
| 3 | | 4924.000 | 43.35 | 7.85 | 51.20 | 74.00 | -22.80 | peak | |
| 4 | | 4924.000 | 31.53 | 7.85 | 39.38 | 54.00 | -14.62 | AVG | |

| E.U.T | WiFi Microscope | Model Name | DMC-2313 |
|---|---|---|---|
| Temperature | 26°C | Relative Humidity | 60% |
| Test Voltage | DC 4.5V | | |
| Test Mode | IEEE 802.11g/2462 MHz | | |

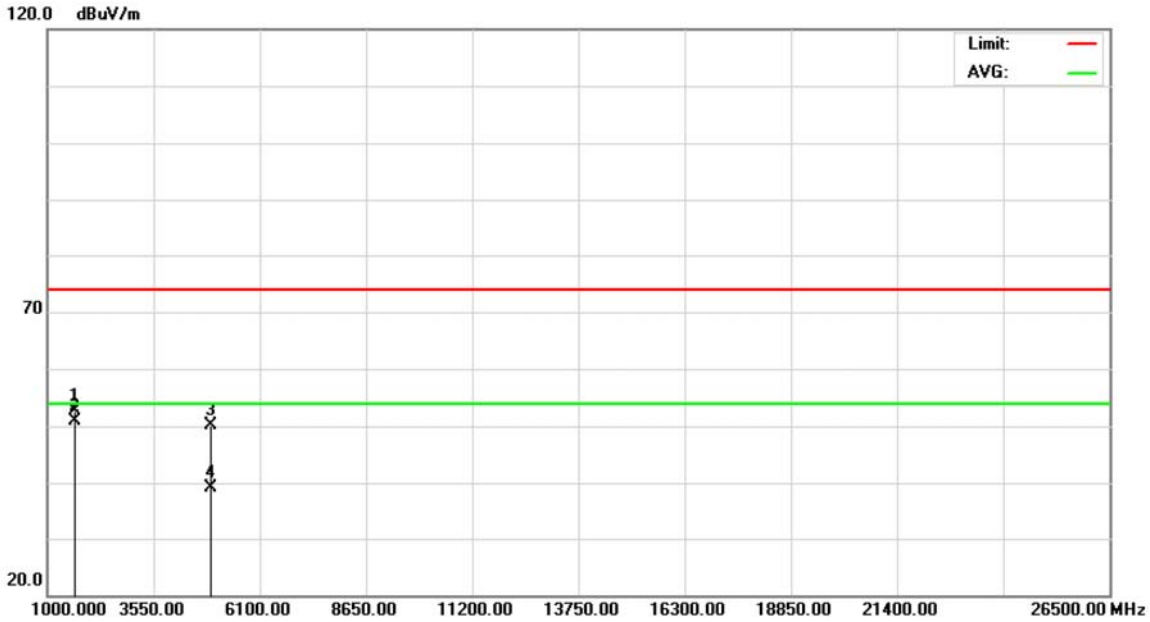
**Polarization: Horizontal**




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | X | 2460.400 | 58.87 | 33.80 | 92.67 | 74.00 | 18.67 | peak | |
| 2 | * | 2460.400 | 49.69 | 33.80 | 83.49 | 54.00 | 29.49 | AVG | |
| 3 | | 2483.500 | 21.44 | 33.92 | 55.36 | 74.00 | -18.64 | peak | |
| 4 | | 2483.500 | 11.54 | 33.92 | 45.46 | 54.00 | -8.54 | AVG | |

| E.U.T | WiFi Microscope | Model Name | DMC-2313 |
|---|---|---|---|
| Temperature | 26°C | Relative Humidity | 60% |
| Test Voltage | DC 4.5V | | |
| Test Mode | IEEE 802.11g/2462 MHz | | |

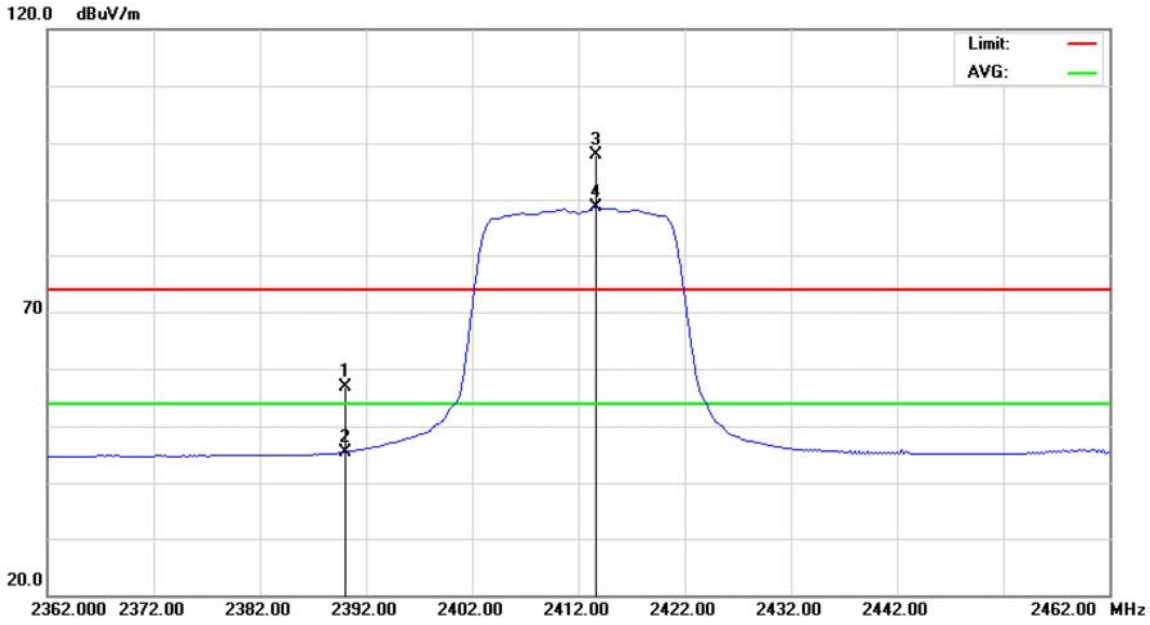
**Polarization: Horizontal**




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | | 1641.328 | 56.05 | -3.52 | 52.53 | 74.00 | -21.47 | peak | |
| 2 | * | 1641.328 | 54.50 | -3.52 | 50.98 | 54.00 | -3.02 | AVG | |
| 3 | | 4923.940 | 42.36 | 7.85 | 50.21 | 74.00 | -23.79 | peak | |
| 4 | | 4923.940 | 31.18 | 7.85 | 39.03 | 54.00 | -14.97 | AVG | |

| E.U.T | WiFi Microscope | Model Name | DMC-2313 |
|---|---|---|---|
| Temperature | 26°C | Relative Humidity | 60% |
| Test Voltage | DC 4.5V | | |
| Test Mode | IEEE 802.11n (20 MHz)/2412 MHz | | |

**Polarization: Vertical**




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | | 2390.000 | 23.62 | 33.23 | 56.85 | 74.00 | -17.15 | peak | |
| 2 | | 2390.000 | 12.19 | 33.23 | 45.42 | 54.00 | -8.58 | AVG | |
| 3 | X | 2413.600 | 64.64 | 33.33 | 97.97 | 74.00 | 23.97 | peak | |
| 4 | * | 2413.600 | 55.29 | 33.33 | 88.62 | 54.00 | 34.62 | AVG | |

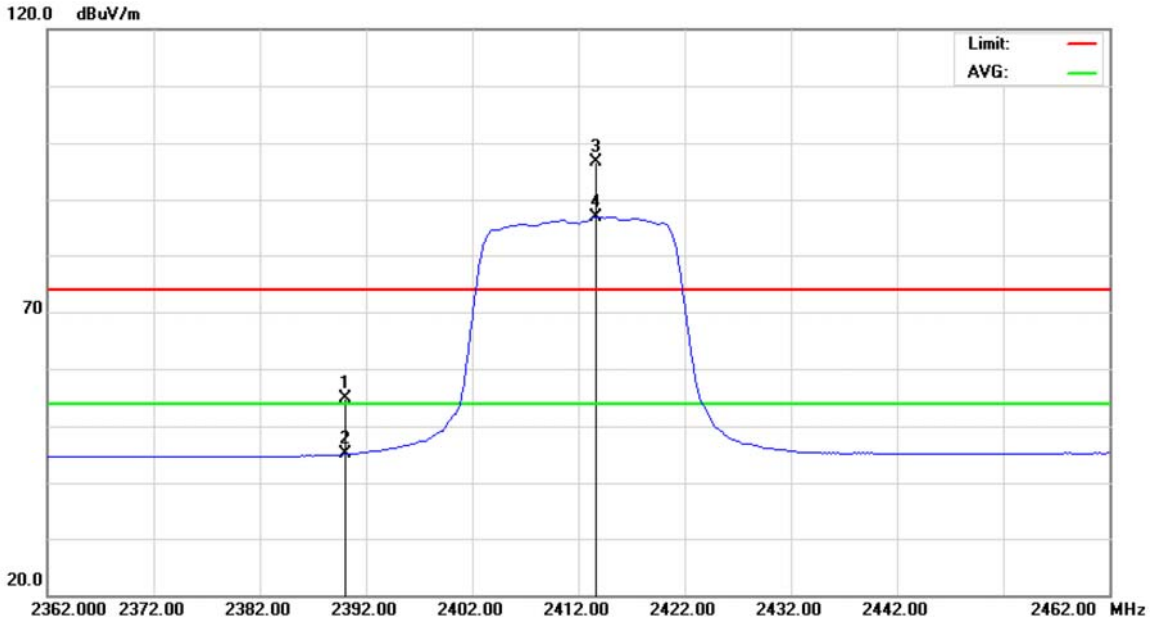
| E.U.T | WiFi Microscope | Model Name | DMC-2313 |
|---|---|---|---|
| Temperature | 26°C | Relative Humidity | 60% |
| Test Voltage | DC 4.5V | | |
| Test Mode | IEEE 802.11n (20 MHz)/2412 MHz | | |

**Polarization: Vertical**


| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | | 1608.000 | 55.39 | -3.33 | 52.06 | 74.00 | -21.94 | peak | |
| 2 | * | 1608.000 | 53.75 | -3.33 | 50.42 | 54.00 | -3.58 | AVG | |
| 3 | | 4824.000 | 51.85 | 7.55 | 59.40 | 74.00 | -14.60 | peak | |
| 4 | | 4824.000 | 38.75 | 7.55 | 46.30 | 54.00 | -7.70 | AVG | |

| E.U.T | WiFi Microscope | Model Name | DMC-2313 |
|---|---|---|---|
| Temperature | 26°C | Relative Humidity | 60% |
| Test Voltage | DC 4.5V | | |
| Test Mode | IEEE 802.11n (20 MHz)/2412 MHz | | |

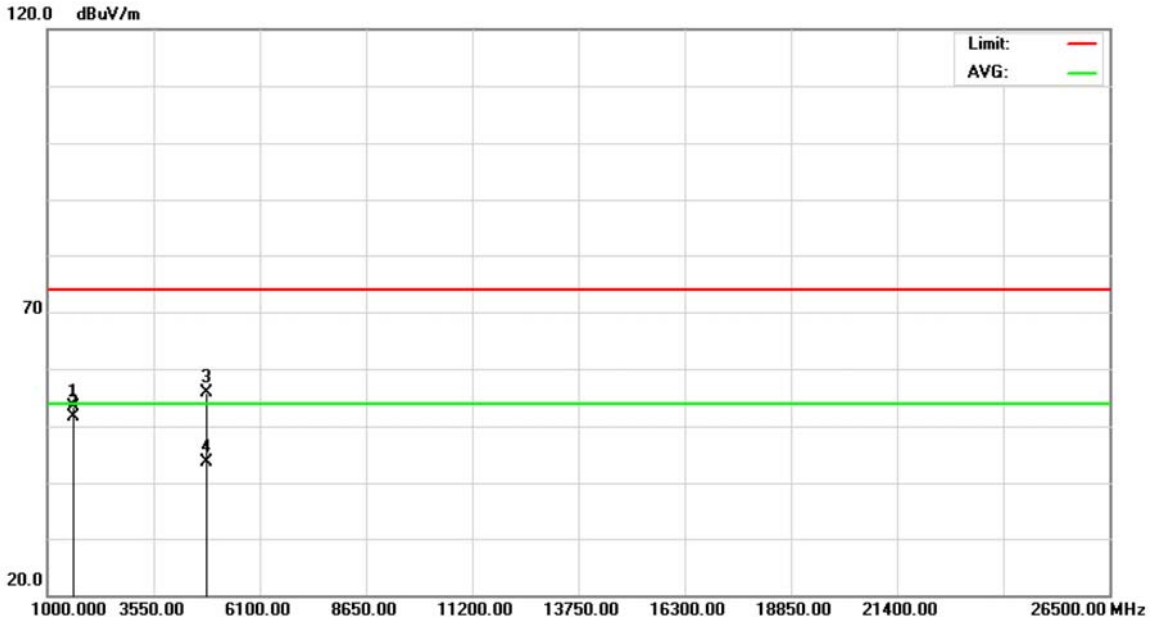
**Polarization: Horizontal**




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | | 2390.000 | 21.59 | 33.23 | 54.82 | 74.00 | -19.18 | peak | |
| 2 | | 2390.000 | 11.78 | 33.23 | 45.01 | 54.00 | -8.99 | AVG | |
| 3 | X | 2413.600 | 63.19 | 33.33 | 96.52 | 74.00 | 22.52 | peak | |
| 4 | * | 2413.600 | 53.59 | 33.33 | 86.92 | 54.00 | 32.92 | AVG | |

| E.U.T | WiFi Microscope | Model Name | DMC-2313 |
|---|---|---|---|
| Temperature | 26°C | Relative Humidity | 60% |
| Test Voltage | DC 4.5V | | |
| Test Mode | IEEE 802.11n (20 MHz)/2412 MHz | | |

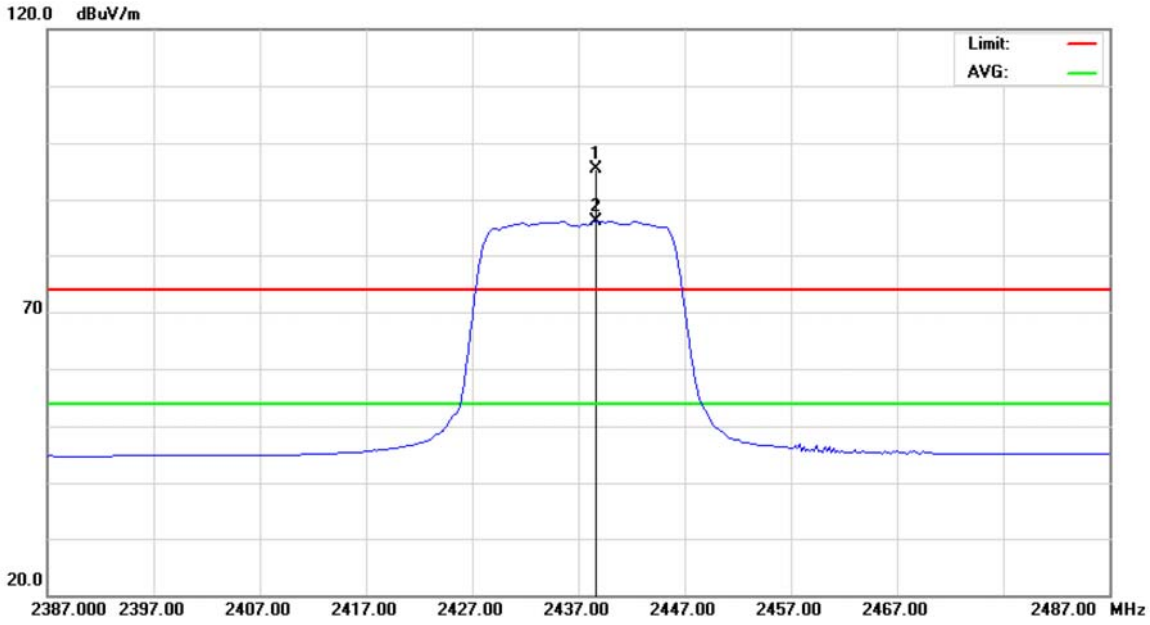
**Polarization: Horizontal**




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | | 1608.000 | 56.63 | -3.33 | 53.30 | 74.00 | -20.70 | peak | |
| 2 | * | 1608.000 | 54.91 | -3.33 | 51.58 | 54.00 | -2.42 | AVG | |
| 3 | | 4824.000 | 48.42 | 7.55 | 55.97 | 74.00 | -18.03 | peak | |
| 4 | | 4824.000 | 36.09 | 7.55 | 43.64 | 54.00 | -10.36 | AVG | |

| E.U.T | WiFi Microscope | Model Name | DMC-2313 |
|---|---|---|---|
| Temperature | 26°C | Relative Humidity | 60% |
| Test Voltage | DC 4.5V | | |
| Test Mode | IEEE 802.11n (20 MHz)/2437 MHz | | |

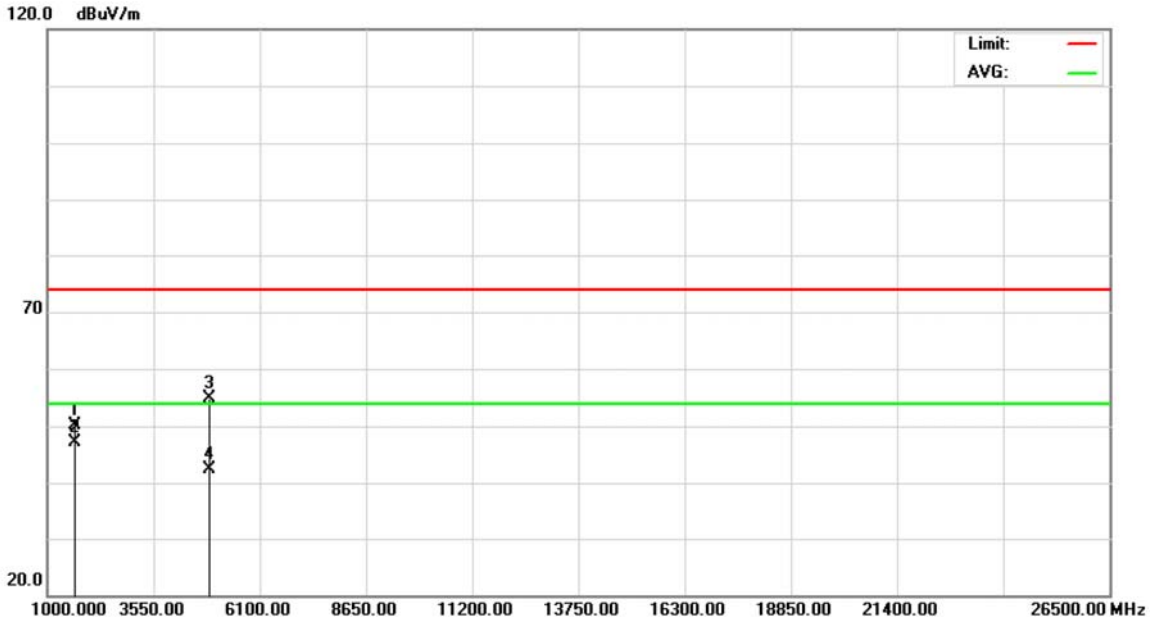
**Polarization: Vertical**




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | X | 2438.600 | 61.92 | 33.44 | 95.36 | 74.00 | 21.36 | peak | |
| 2 | * | 2438.600 | 52.72 | 33.44 | 86.16 | 54.00 | 32.16 | AVG | |

| E.U.T | WiFi Microscope | Model Name | DMC-2313 |
|---|---|---|---|
| Temperature | 26°C | Relative Humidity | 60% |
| Test Voltage | DC 4.5V | | |
| Test Mode | IEEE 802.11n (20 MHz)/2437 MHz | | |

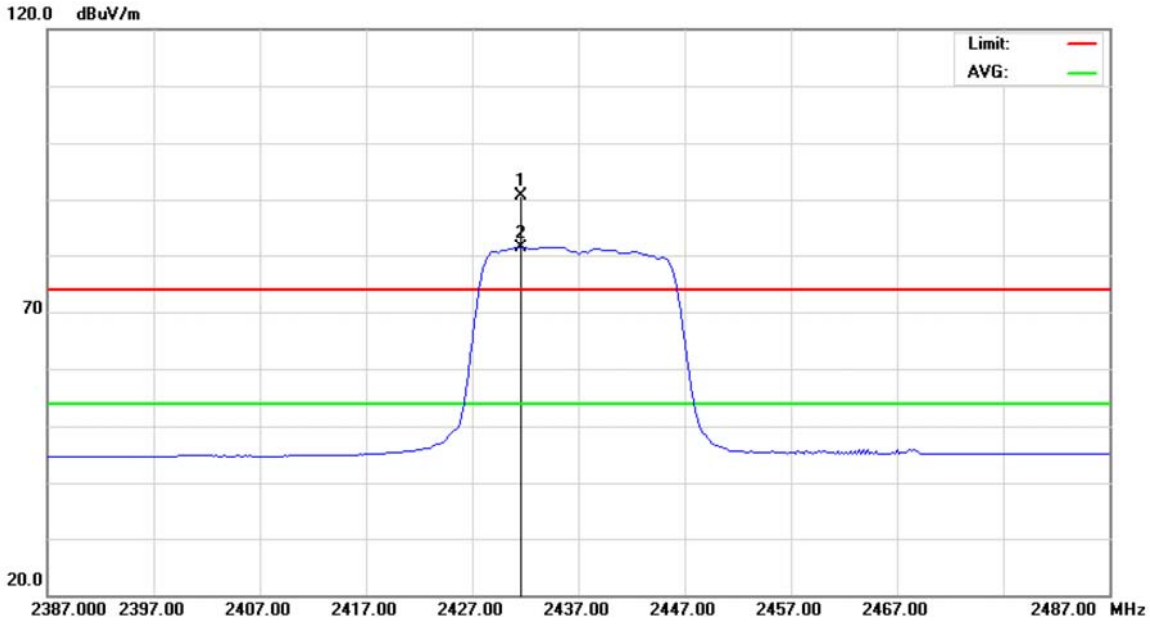
**Polarization: Vertical**




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | | 1624.720 | 53.45 | -3.29 | 50.16 | 74.00 | -23.84 | peak | |
| 2 | * | 1624.720 | 50.54 | -3.29 | 47.25 | 54.00 | -6.75 | AVG | |
| 3 | | 4874.040 | 47.05 | 7.74 | 54.79 | 74.00 | -19.21 | peak | |
| 4 | | 4874.040 | 34.66 | 7.74 | 42.40 | 54.00 | -11.60 | AVG | |

| E.U.T | WiFi Microscope | Model Name | DMC-2313 |
|---|---|---|---|
| Temperature | 26°C | Relative Humidity | 60% |
| Test Voltage | DC 4.5V | | |
| Test Mode | IEEE 802.11n (20 MHz)/2437 MHz | | |

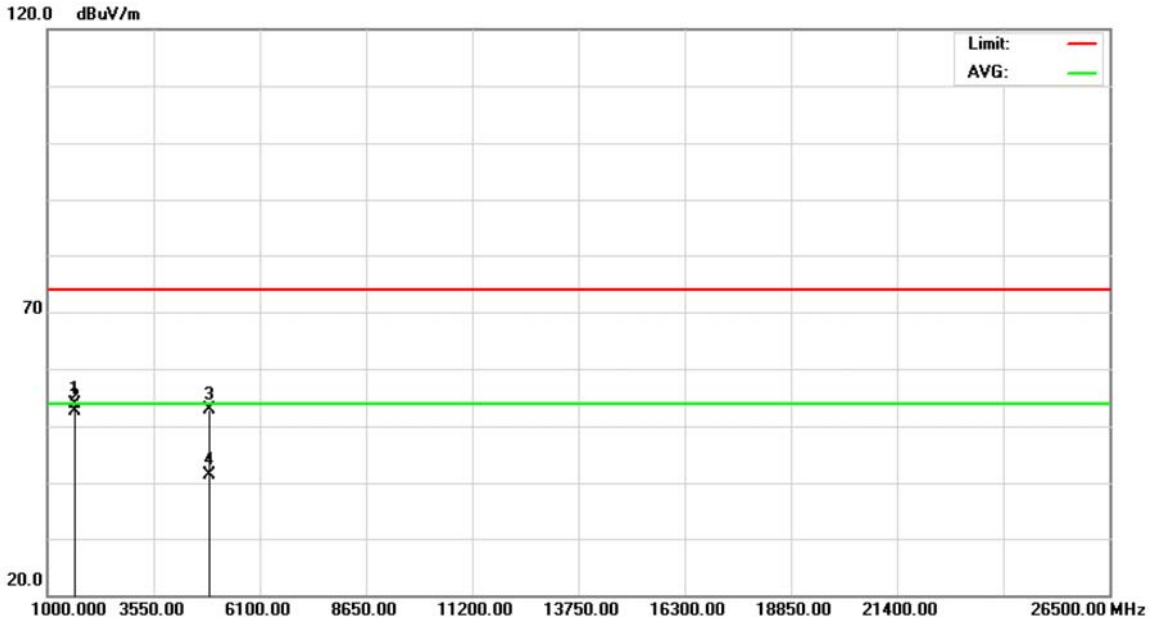
**Polarization: Horizontal**




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | X | 2431.600 | 57.24 | 33.41 | 90.65 | 74.00 | 16.65 | peak | |
| 2 | * | 2431.600 | 48.07 | 33.41 | 81.48 | 54.00 | 27.48 | AVG | |

| E.U.T | WiFi Microscope | Model Name | DMC-2313 |
|---|---|---|---|
| Temperature | 26°C | Relative Humidity | 60% |
| Test Voltage | DC 4.5V | | |
| Test Mode | IEEE 802.11n (20 MHz)/2437 MHz | | |

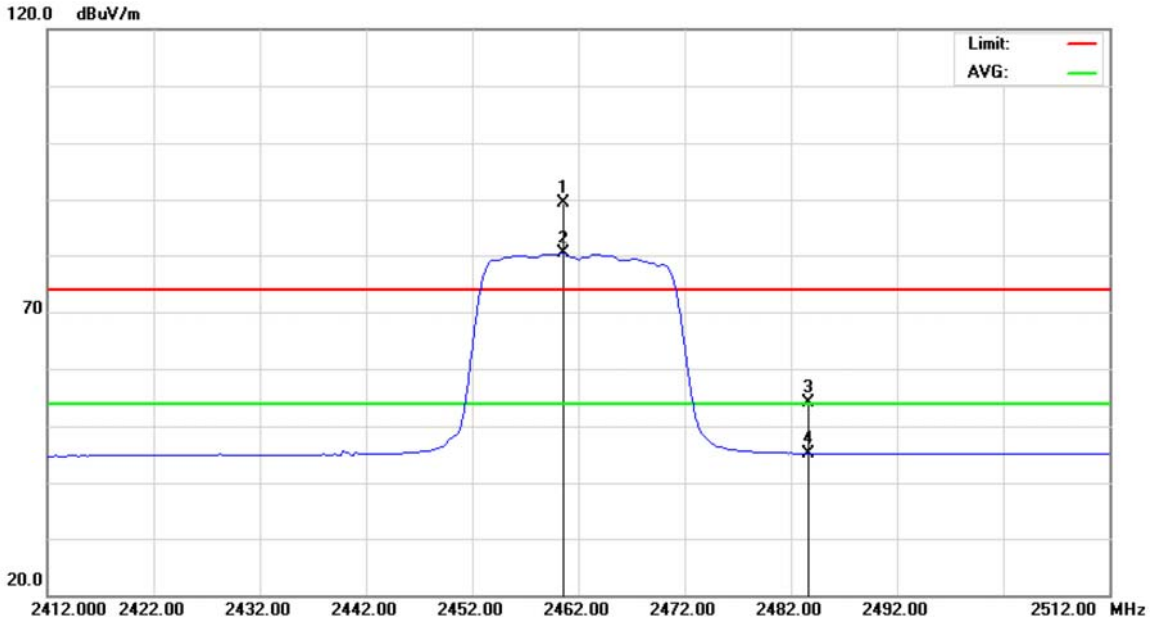
**Polarization: Horizontal**




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | | 1624.660 | 57.27 | -3.29 | 53.98 | 74.00 | -20.02 | peak | |
| 2 | * | 1624.660 | 55.97 | -3.29 | 52.68 | 54.00 | -1.32 | AVG | |
| 3 | | 4873.880 | 45.07 | 7.74 | 52.81 | 74.00 | -21.19 | peak | |
| 4 | | 4873.880 | 33.53 | 7.74 | 41.27 | 54.00 | -12.73 | AVG | |

| E.U.T | WiFi Microscope | Model Name | DMC-2313 |
|---|---|---|---|
| Temperature | 26°C | Relative Humidity | 60% |
| Test Voltage | DC 4.5V | | |
| Test Mode | IEEE 802.11n (20 MHz)/2462 MHz | | |

**Polarization: Vertical**




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | X | 2460.600 | 55.81 | 33.54 | 89.35 | 74.00 | 15.35 | peak | |
| 2 | * | 2460.600 | 46.78 | 33.54 | 80.32 | 54.00 | 26.32 | AVG | |
| 3 | | 2483.500 | 20.46 | 33.64 | 54.10 | 74.00 | -19.90 | peak | |
| 4 | | 2483.500 | 11.54 | 33.64 | 45.18 | 54.00 | -8.82 | AVG | |

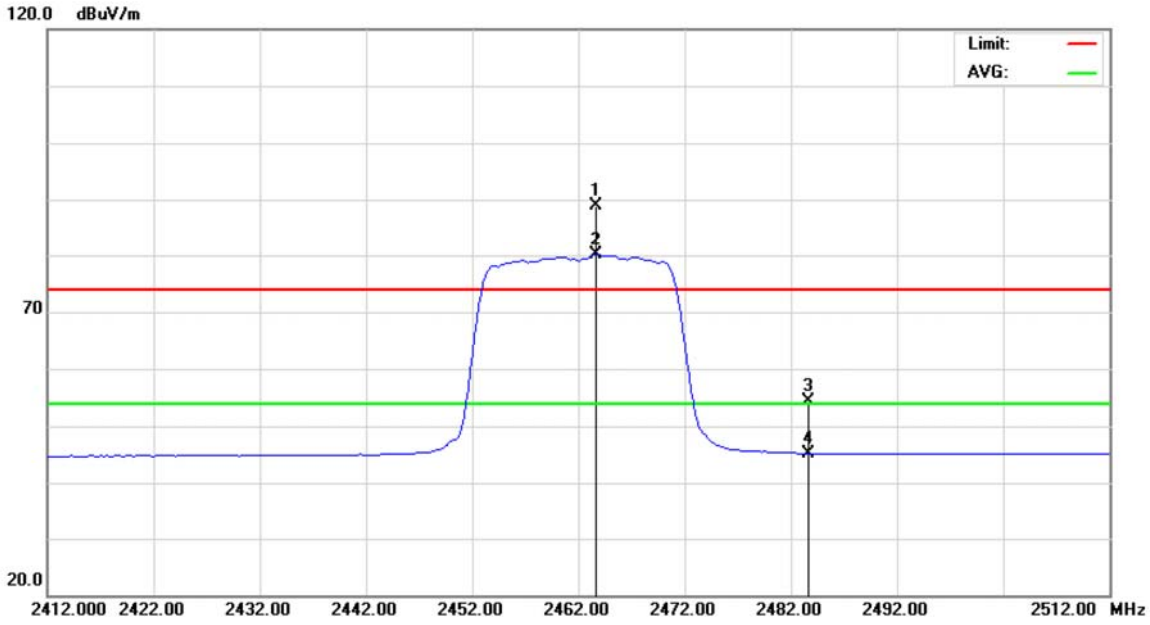
| E.U.T | WiFi Microscope | Model Name | DMC-2313 |
|---|---|---|---|
| Temperature | 26°C | Relative Humidity | 60% |
| Test Voltage | DC 4.5V | | |
| Test Mode | IEEE 802.11n (20 MHz)/2462 MHz | | |

**Polarization: Vertical**


| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | | 1641.340 | 57.95 | -3.24 | 54.71 | 74.00 | -19.29 | peak | |
| 2 | * | 1641.340 | 55.83 | -3.24 | 52.59 | 54.00 | -1.41 | AVG | |
| 3 | | 4924.040 | 41.90 | 7.93 | 49.83 | 74.00 | -24.17 | peak | |
| 4 | | 4924.040 | 31.55 | 7.93 | 39.48 | 54.00 | -14.52 | AVG | |

| E.U.T | WiFi Microscope | Model Name | DMC-2313 |
|---|---|---|---|
| Temperature | 26°C | Relative Humidity | 60% |
| Test Voltage | DC 4.5V | | |
| Test Mode | IEEE 802.11n (20 MHz)/2462 MHz | | |

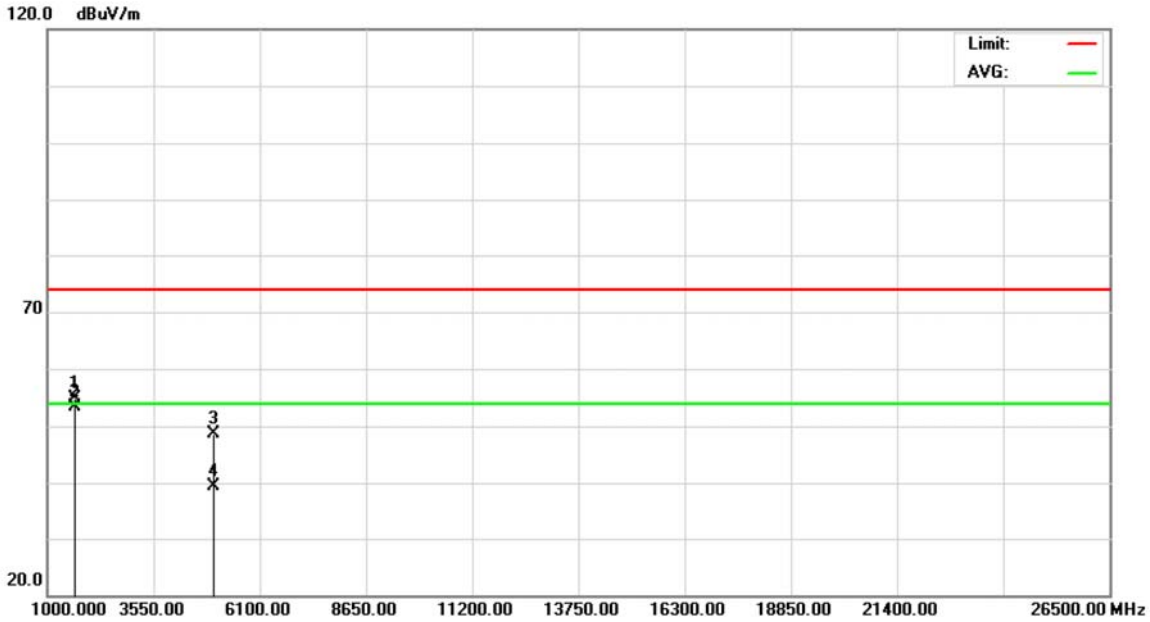
**Polarization: Horizontal**




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | X | 2463.600 | 55.43 | 33.55 | 88.98 | 74.00 | 14.98 | peak | |
| 2 | * | 2463.600 | 46.51 | 33.55 | 80.06 | 54.00 | 26.06 | AVG | |
| 3 | | 2483.500 | 20.66 | 33.64 | 54.30 | 74.00 | -19.70 | peak | |
| 4 | | 2483.500 | 11.57 | 33.64 | 45.21 | 54.00 | -8.79 | AVG | |

| E.U.T | WiFi Microscope | Model Name | DMC-2313 |
|---|---|---|---|
| Temperature | 26°C | Relative Humidity | 60% |
| Test Voltage | DC 4.5V | | |
| Test Mode | IEEE 802.11n (20 MHz)/2462 MHz | | |

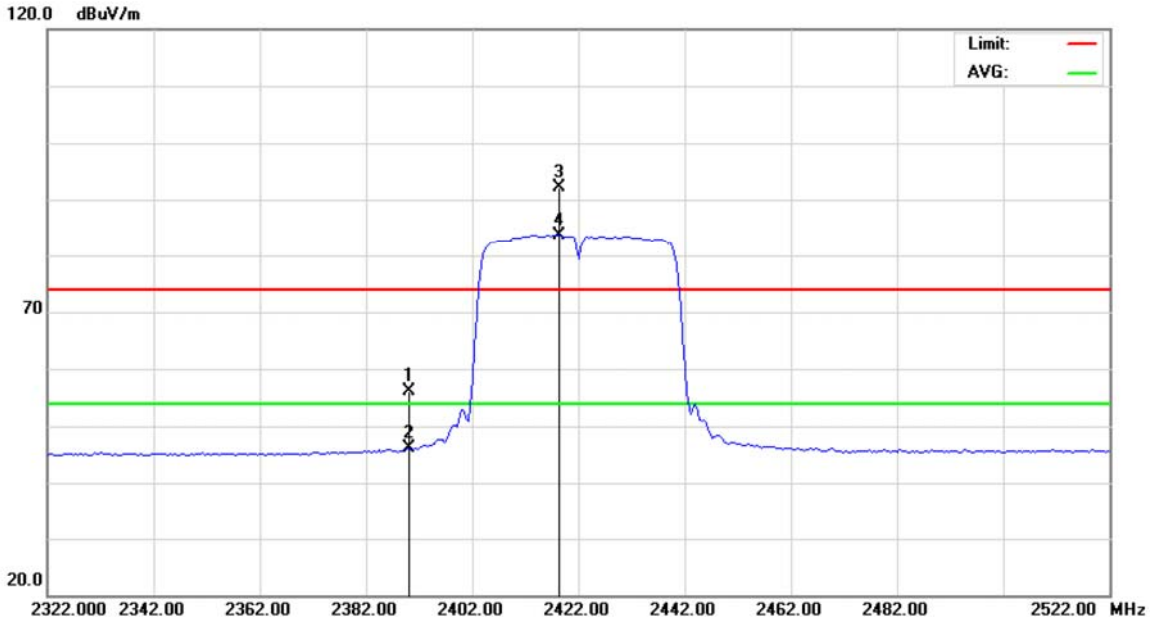
**Polarization: Horizontal**




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | | 1641.340 | 58.03 | -3.24 | 54.79 | 74.00 | -19.21 | peak | |
| 2 | * | 1641.340 | 56.56 | -3.24 | 53.32 | 54.00 | -0.68 | AVG | |
| 3 | | 4932.960 | 40.62 | 7.97 | 48.59 | 74.00 | -25.41 | peak | |
| 4 | | 4932.960 | 31.49 | 7.97 | 39.46 | 54.00 | -14.54 | AVG | |

| E.U.T | WiFi Microscope | Model Name | DMC-2313 |
|---|---|---|---|
| Temperature | 26°C | Relative Humidity | 60% |
| Test Voltage | DC 4.5V | | |
| Test Mode | IEEE 802.11n (40 MHz)/2422 MHz | | |

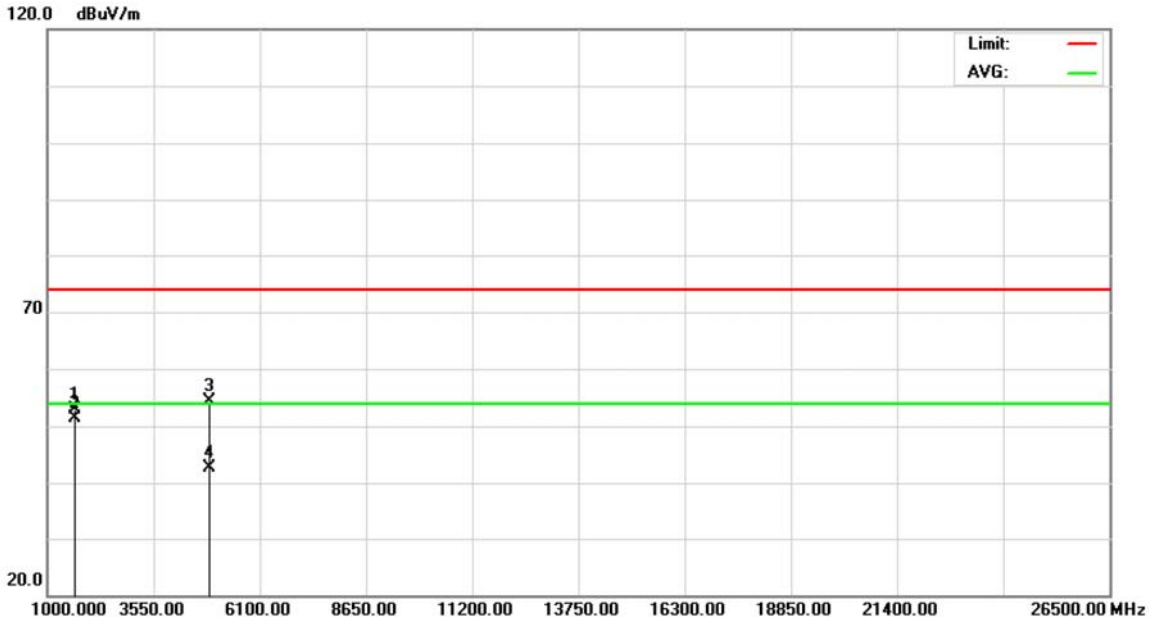
**Polarization: Vertical**




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | | 2390.000 | 22.87 | 33.23 | 56.10 | 74.00 | -17.90 | peak | |
| 2 | | 2390.000 | 12.87 | 33.23 | 46.10 | 54.00 | -7.90 | AVG | |
| 3 | X | 2418.400 | 58.84 | 33.36 | 92.20 | 74.00 | 18.20 | peak | |
| 4 | * | 2418.400 | 50.39 | 33.36 | 83.75 | 54.00 | 29.75 | AVG | |

| E.U.T | WiFi Microscope | Model Name | DMC-2313 |
|---|---|---|---|
| Temperature | 26°C | Relative Humidity | 60% |
| Test Voltage | DC 4.5V | | |
| Test Mode | IEEE 802.11n (40 MHz)/2422 MHz | | |

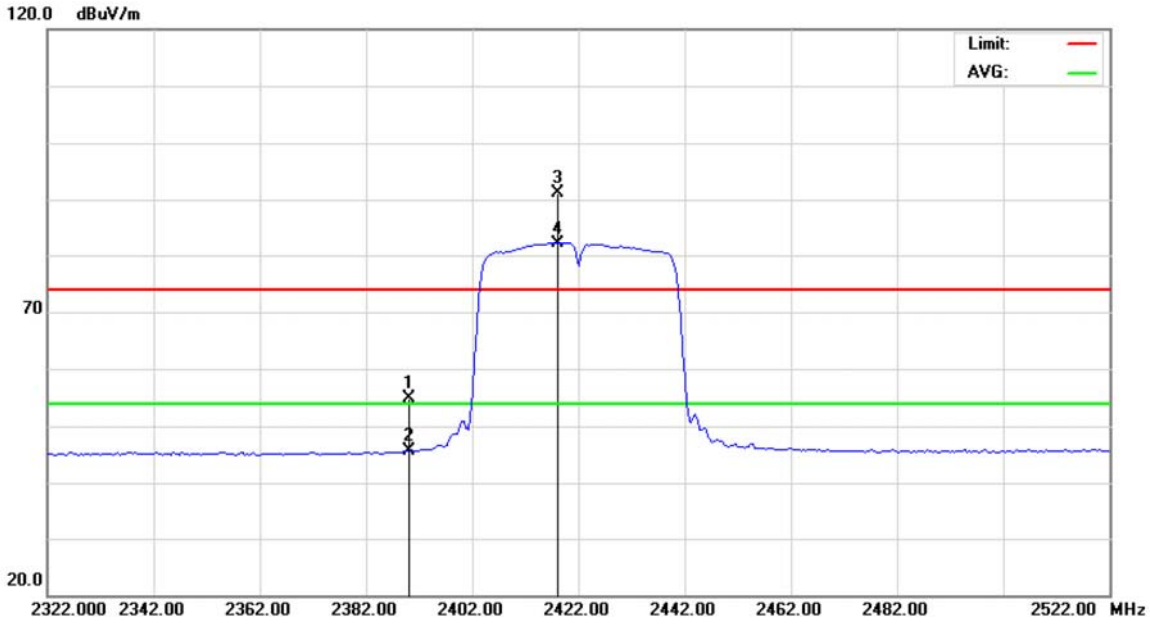
**Polarization: Vertical**




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | | 1614.640 | 56.11 | -3.32 | 52.79 | 74.00 | -21.21 | peak | |
| 2 | * | 1614.640 | 54.68 | -3.32 | 51.36 | 54.00 | -2.64 | AVG | |
| 3 | | 4844.040 | 46.68 | 7.63 | 54.31 | 74.00 | -19.69 | peak | |
| 4 | | 4844.040 | 34.88 | 7.63 | 42.51 | 54.00 | -11.49 | AVG | |

| E.U.T | WiFi Microscope | Model Name | DMC-2313 |
|---|---|---|---|
| Temperature | 26°C | Relative Humidity | 60% |
| Test Voltage | DC 4.5V | | |
| Test Mode | IEEE 802.11n (40 MHz)/2422 MHz | | |

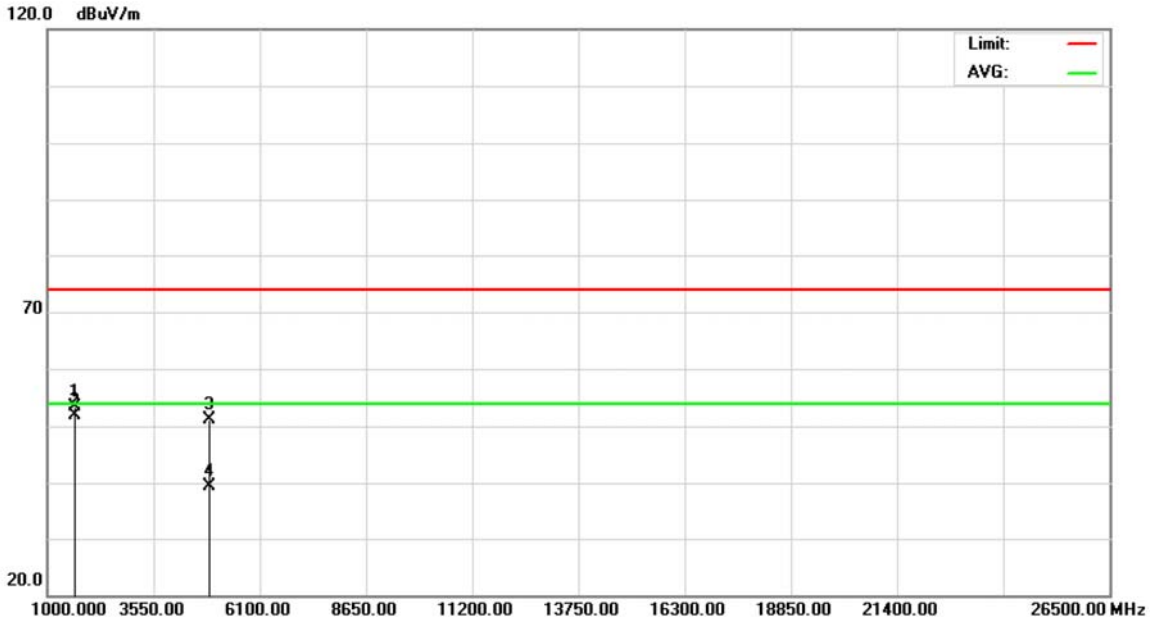
**Polarization: Horizontal**




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | | 2390.000 | 21.53 | 33.23 | 54.76 | 74.00 | -19.24 | peak | |
| 2 | | 2390.000 | 12.35 | 33.23 | 45.58 | 54.00 | -8.42 | AVG | |
| 3 | X | 2418.000 | 57.85 | 33.35 | 91.20 | 74.00 | 17.20 | peak | |
| 4 | * | 2418.000 | 48.90 | 33.35 | 82.25 | 54.00 | 28.25 | AVG | |

| E.U.T | WiFi Microscope | Model Name | DMC-2313 |
|---|---|---|---|
| Temperature | 26°C | Relative Humidity | 60% |
| Test Voltage | DC 4.5V | | |
| Test Mode | IEEE 802.11n (40 MHz)/2422 MHz | | |

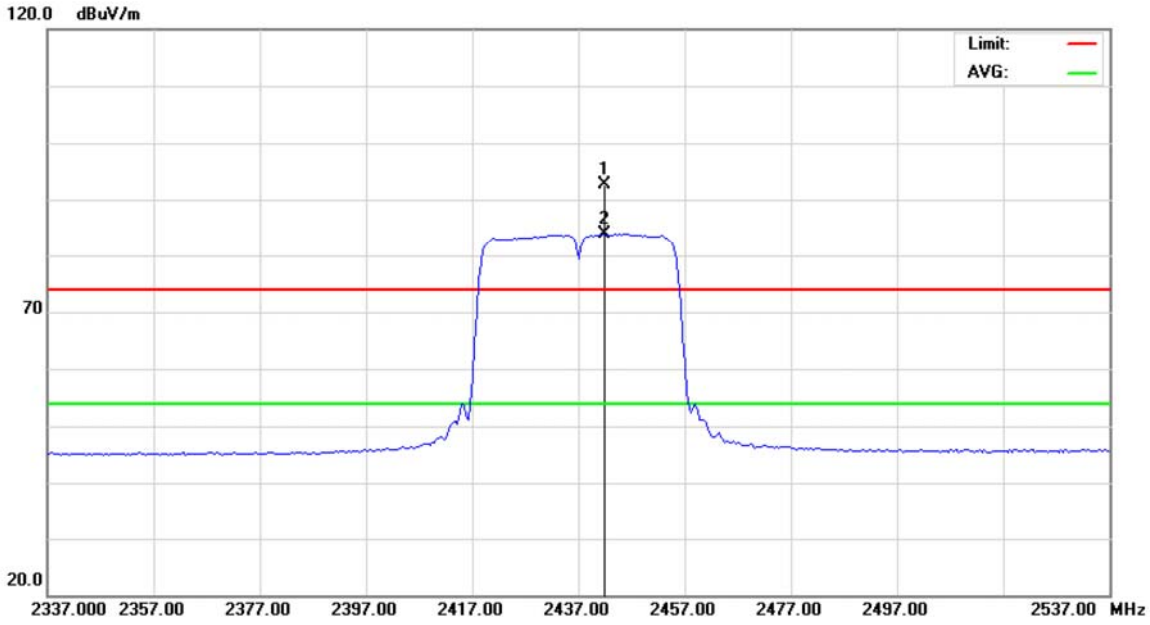
**Polarization: Horizontal**




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | | 1614.660 | 56.72 | -3.32 | 53.40 | 74.00 | -20.60 | peak | |
| 2 | * | 1614.660 | 55.27 | -3.32 | 51.95 | 54.00 | -2.05 | AVG | |
| 3 | | 4843.700 | 43.61 | 7.63 | 51.24 | 74.00 | -22.76 | peak | |
| 4 | | 4843.700 | 31.87 | 7.63 | 39.50 | 54.00 | -14.50 | AVG | |

| E.U.T | WiFi Microscope | Model Name | DMC-2313 |
|---|---|---|---|
| Temperature | 26°C | Relative Humidity | 60% |
| Test Voltage | DC 4.5V | | |
| Test Mode | IEEE 802.11n (40 MHz)/2437 MHz | | |

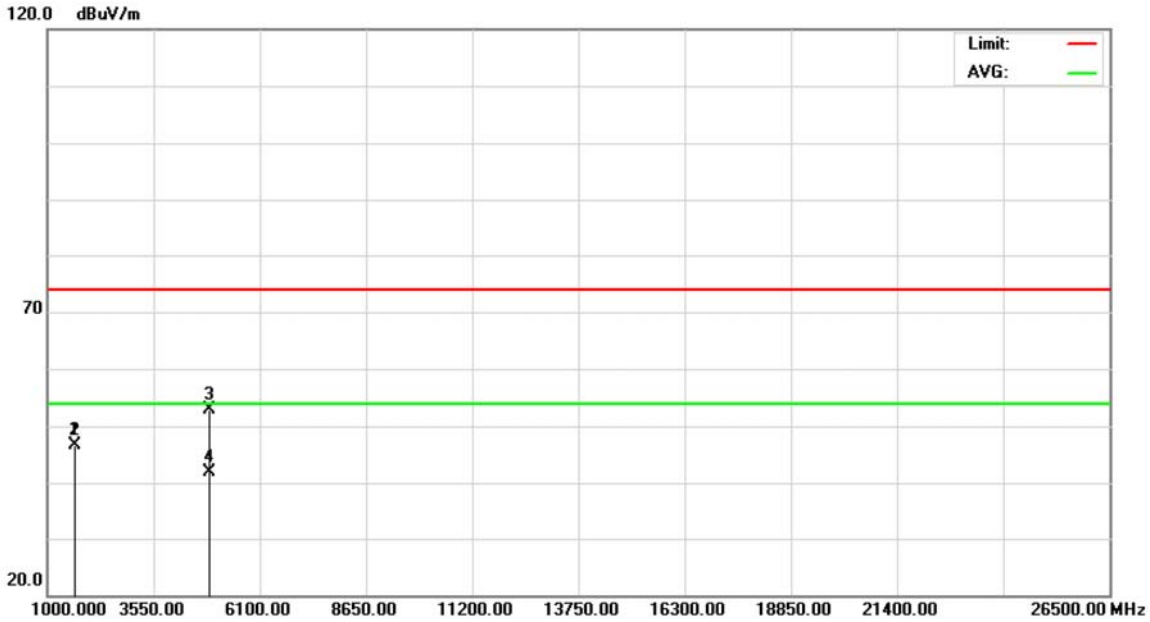
**Polarization: Vertical**




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | X | 2441.800 | 59.07 | 33.46 | 92.53 | 74.00 | 18.53 | peak | |
| 2 | * | 2441.800 | 50.34 | 33.46 | 83.80 | 54.00 | 29.80 | AVG | |

| E.U.T | WiFi Microscope | Model Name | DMC-2313 |
|---|---|---|---|
| Temperature | 26°C | Relative Humidity | 60% |
| Test Voltage | DC 4.5V | | |
| Test Mode | IEEE 802.11n (40 MHz)/2437 MHz | | |

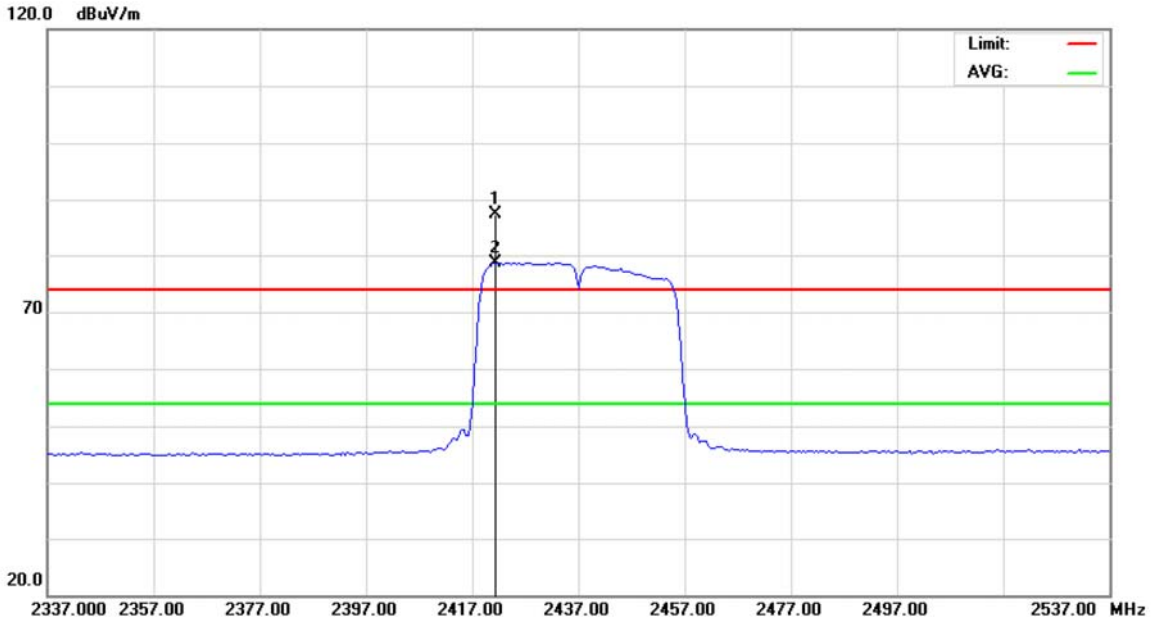
**Polarization: Vertical**




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | | 1624.650 | 49.93 | -3.29 | 46.64 | 74.00 | -27.36 | peak | |
| 2 | * | 1624.650 | 49.93 | -3.29 | 46.64 | 54.00 | -7.36 | AVG | |
| 3 | | 4874.280 | 45.10 | 7.74 | 52.84 | 74.00 | -21.16 | peak | |
| 4 | | 4874.280 | 34.11 | 7.74 | 41.85 | 54.00 | -12.15 | AVG | |

| E.U.T | WiFi Microscope | Model Name | DMC-2313 |
|---|---|---|---|
| Temperature | 26°C | Relative Humidity | 60% |
| Test Voltage | DC 4.5V | | |
| Test Mode | IEEE 802.11n (40 MHz)/2437 MHz | | |

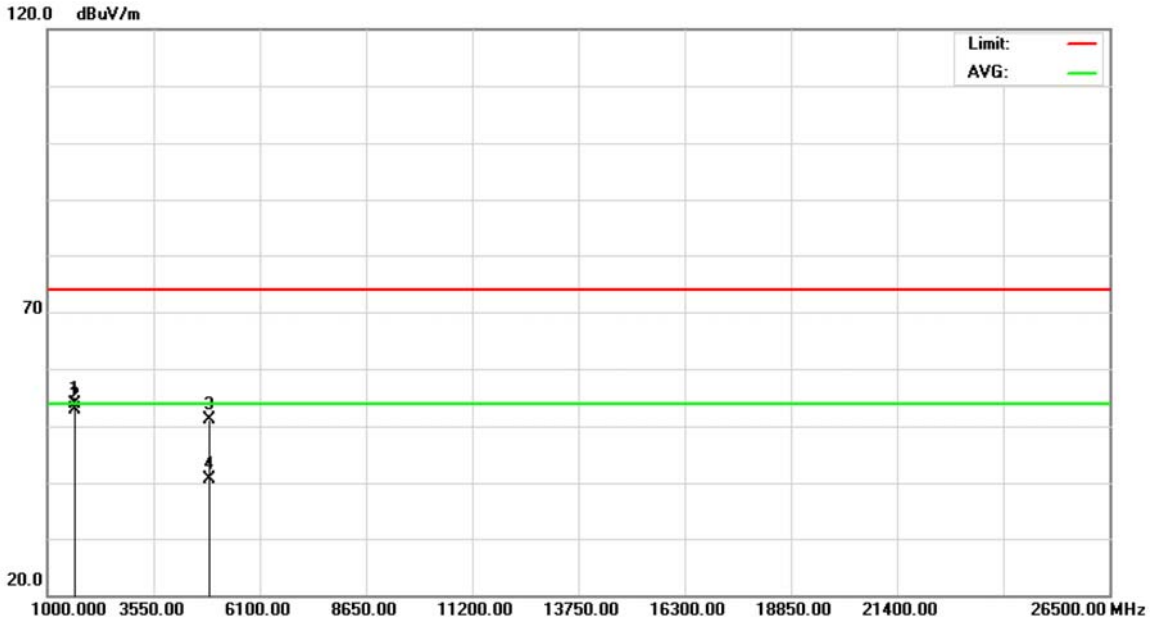
**Polarization: Horizontal**




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | X | 2421.400 | 54.13 | 33.37 | 87.50 | 74.00 | 13.50 | peak | |
| 2 | * | 2421.400 | 45.31 | 33.37 | 78.68 | 54.00 | 24.68 | AVG | |

| E.U.T | WiFi Microscope | Model Name | DMC-2313 |
|---|---|---|---|
| Temperature | 26°C | Relative Humidity | 60% |
| Test Voltage | DC 4.5V | | |
| Test Mode | IEEE 802.11n (40 MHz)/2437 MHz | | |

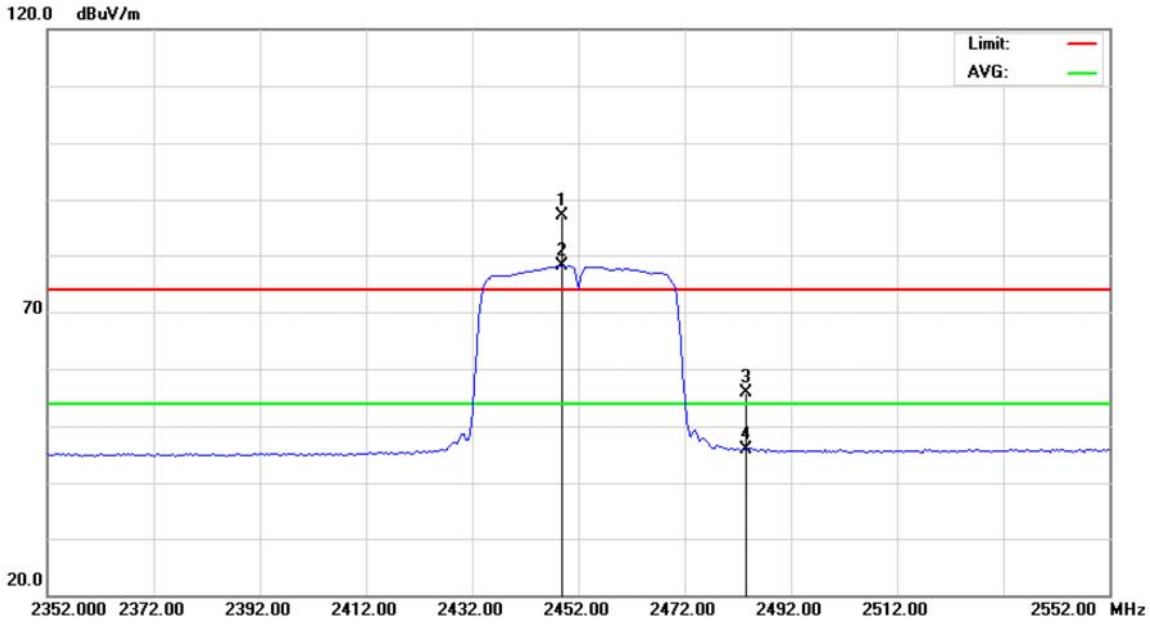
**Polarization: Horizontal**




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | | 1624.670 | 57.21 | -3.29 | 53.92 | 74.00 | -20.08 | peak | |
| 2 | * | 1624.670 | 56.18 | -3.29 | 52.89 | 54.00 | -1.11 | AVG | |
| 3 | | 4874.360 | 43.39 | 7.74 | 51.13 | 74.00 | -22.87 | peak | |
| 4 | | 4874.360 | 33.00 | 7.74 | 40.74 | 54.00 | -13.26 | AVG | |

| E.U.T | WiFi Microscope | Model Name | DMC-2313 |
|---|---|---|---|
| Temperature | 26°C | Relative Humidity | 60% |
| Test Voltage | DC 4.5V | | |
| Test Mode | IEEE 802.11n (40 MHz)/2452 MHz | | |

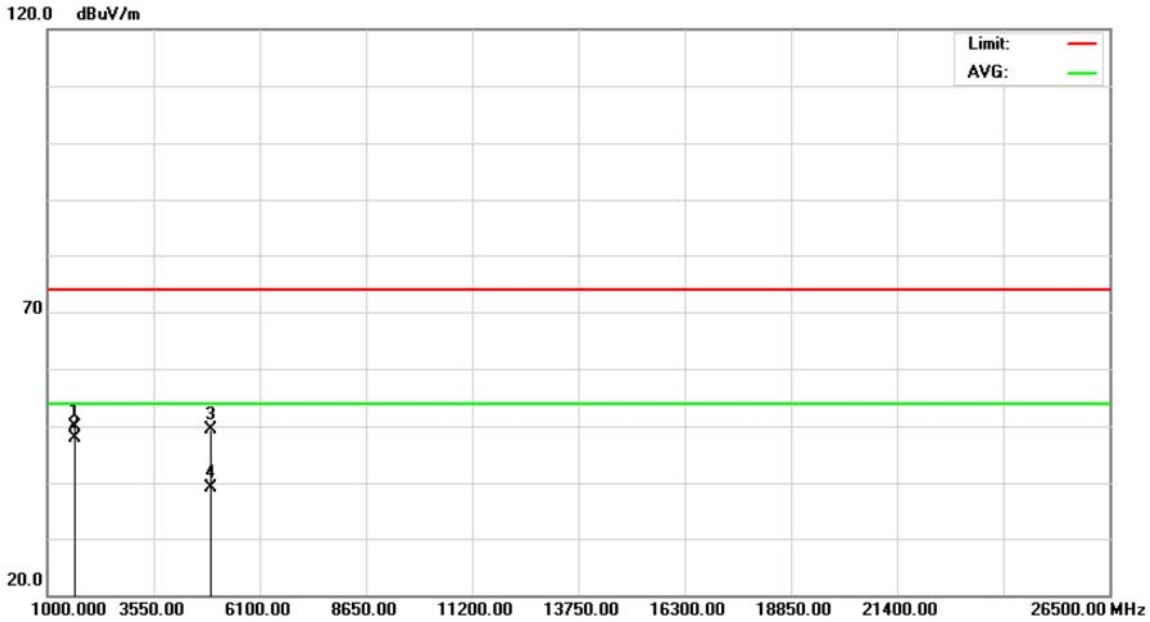
**Polarization: Vertical**




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | X | 2448.800 | 53.66 | 33.49 | 87.15 | 74.00 | 13.15 | peak | |
| 2 | * | 2448.800 | 44.64 | 33.49 | 78.13 | 54.00 | 24.13 | AVG | |
| 3 | | 2483.500 | 22.13 | 33.64 | 55.77 | 74.00 | -18.23 | peak | |
| 4 | | 2483.500 | 12.21 | 33.64 | 45.85 | 54.00 | -8.15 | AVG | |

| E.U.T | WiFi Microscope | Model Name | DMC-2313 |
|---|---|---|---|
| Temperature | 26°C | Relative Humidity | 60% |
| Test Voltage | DC 4.5V | | |
| Test Mode | IEEE 802.11n (40 MHz)/2452 MHz | | |

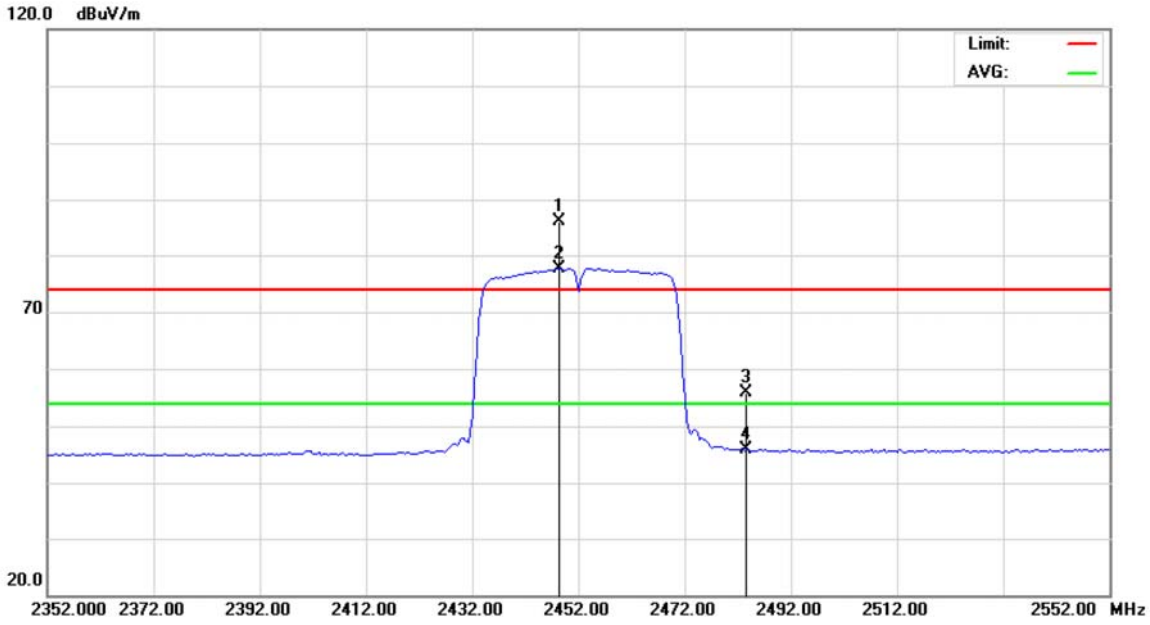
**Polarization: Vertical**




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | | 1634.640 | 53.23 | -3.26 | 49.97 | 74.00 | -24.03 | peak | |
| 2 | * | 1634.640 | 51.19 | -3.26 | 47.93 | 54.00 | -6.07 | AVG | |
| 3 | | 4906.620 | 41.44 | 7.87 | 49.31 | 74.00 | -24.69 | peak | |
| 4 | | 4906.620 | 31.23 | 7.87 | 39.10 | 54.00 | -14.90 | AVG | |

| E.U.T | WiFi Microscope | Model Name | DMC-2313 |
|---|---|---|---|
| Temperature | 26°C | Relative Humidity | 60% |
| Test Voltage | DC 4.5V | | |
| Test Mode | IEEE 802.11n (40 MHz)/2452 MHz | | |

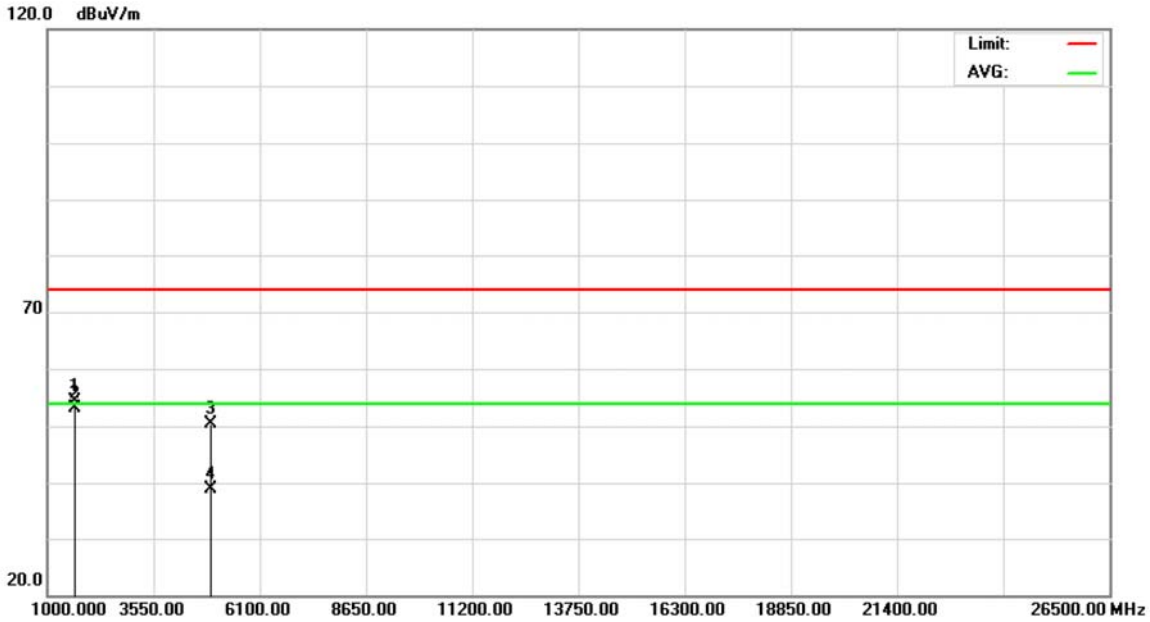
**Polarization: Horizontal**




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | X | 2448.400 | 52.74 | 33.49 | 86.23 | 74.00 | 12.23 | peak | |
| 2 | * | 2448.400 | 44.19 | 33.49 | 77.68 | 54.00 | 23.68 | AVG | |
| 3 | | 2483.500 | 22.28 | 33.64 | 55.92 | 74.00 | -18.08 | peak | |
| 4 | | 2483.500 | 12.13 | 33.64 | 45.77 | 54.00 | -8.23 | AVG | |

| E.U.T | WiFi Microscope | Model Name | DMC-2313 |
|---|---|---|---|
| Temperature | 26°C | Relative Humidity | 60% |
| Test Voltage | DC 4.5V | | |
| Test Mode | IEEE 802.11n (40 MHz)/2452 MHz | | |

**Polarization: Horizontal**

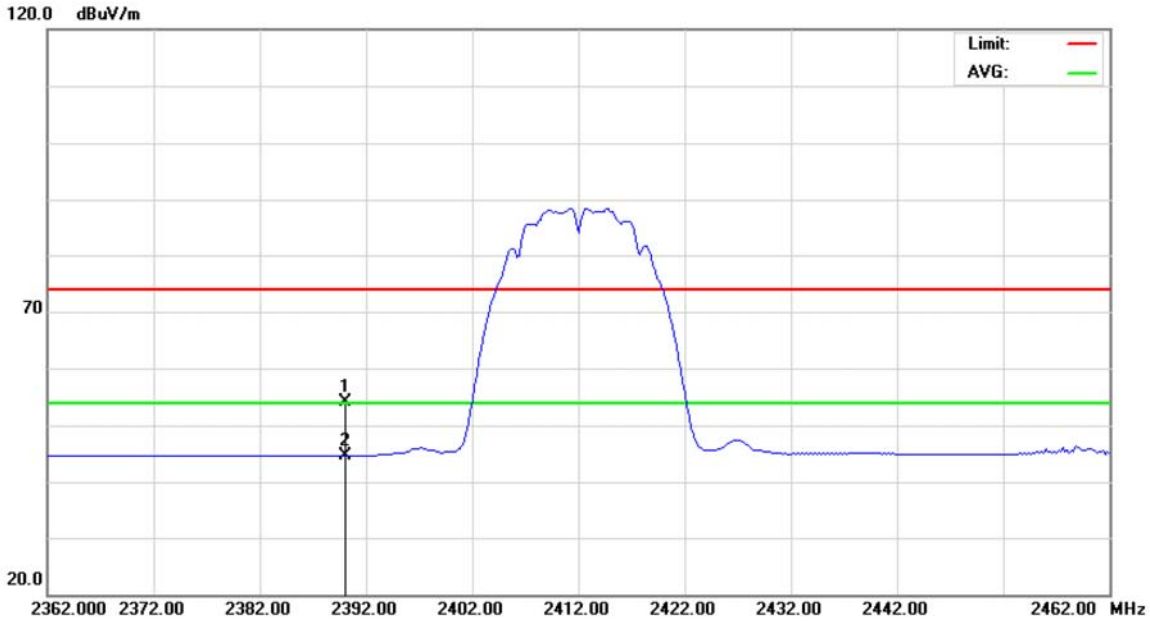



| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | | 1634.650 | 57.60 | -3.26 | 54.34 | 74.00 | -19.66 | peak | |
| 2 | * | 1634.650 | 56.37 | -3.26 | 53.11 | 54.00 | -0.89 | AVG | |
| 3 | | 4904.552 | 42.63 | 7.86 | 50.49 | 74.00 | -23.51 | peak | |
| 4 | | 4904.552 | 31.08 | 7.86 | 38.94 | 54.00 | -15.06 | AVG | |

## 8.9 TEST RESULTS (RESTRICTED BANDS)

| | | | |
|---|---|---|---|
| E.U.T | WiFi Microscope | Model Name | DMC-2313 |
| Temperature | 24°C | Relative Humidity | 46% |
| Test Voltage | DC 4.5V | | |
| Test Mode | IEEE 802.11b | | |
| NOTE | The transmitter was setup to transmit at the lowest channel and the field strength was measured at 2310-2390 MHz. | | |

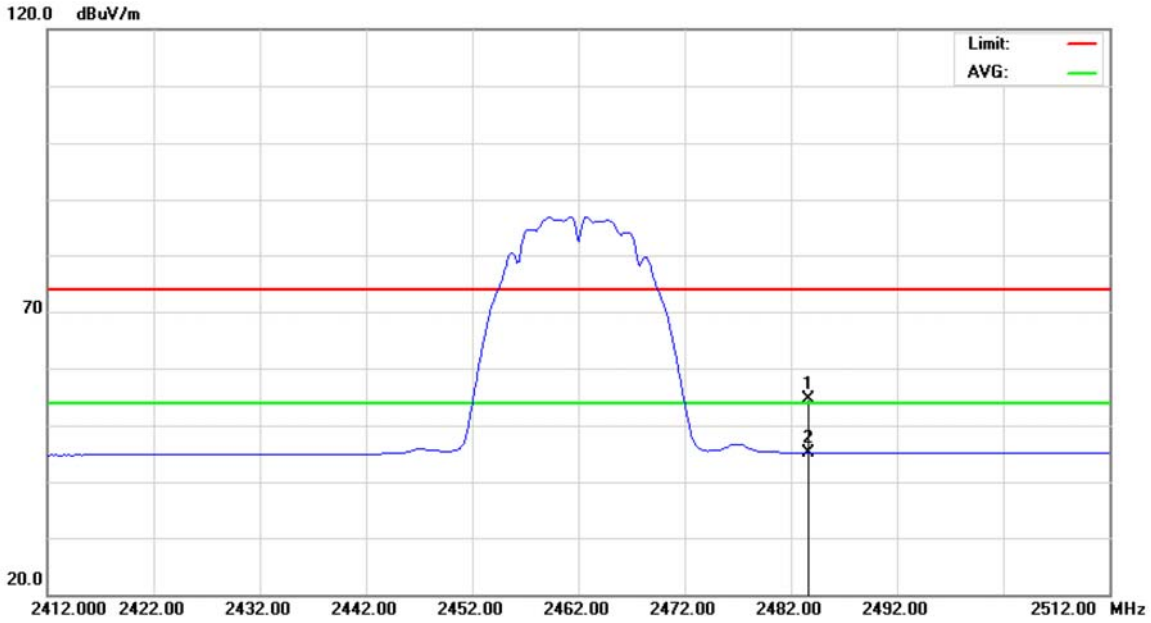
**Polarization: Vertical**




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | | 2390.000 | 20.98 | 33.23 | 54.21 | 74.00 | -19.79 | peak | |
| 2 | * | 2390.000 | 11.37 | 33.23 | 44.60 | 54.00 | -9.40 | AVG | |

| | | | |
|---|---|---|---|
| E.U.T | WiFi Microscope | Model Name | DMC-2313 |
| Temperature | 24°C | Relative Humidity | 46% |
| Test Voltage | DC 4.5V | | |
| Test Mode | IEEE 802.11b | | |
| NOTE | The transmitter was setup to transmit at the highest channel and the field strength was measured at 2483.5-2500 MHz. | | |

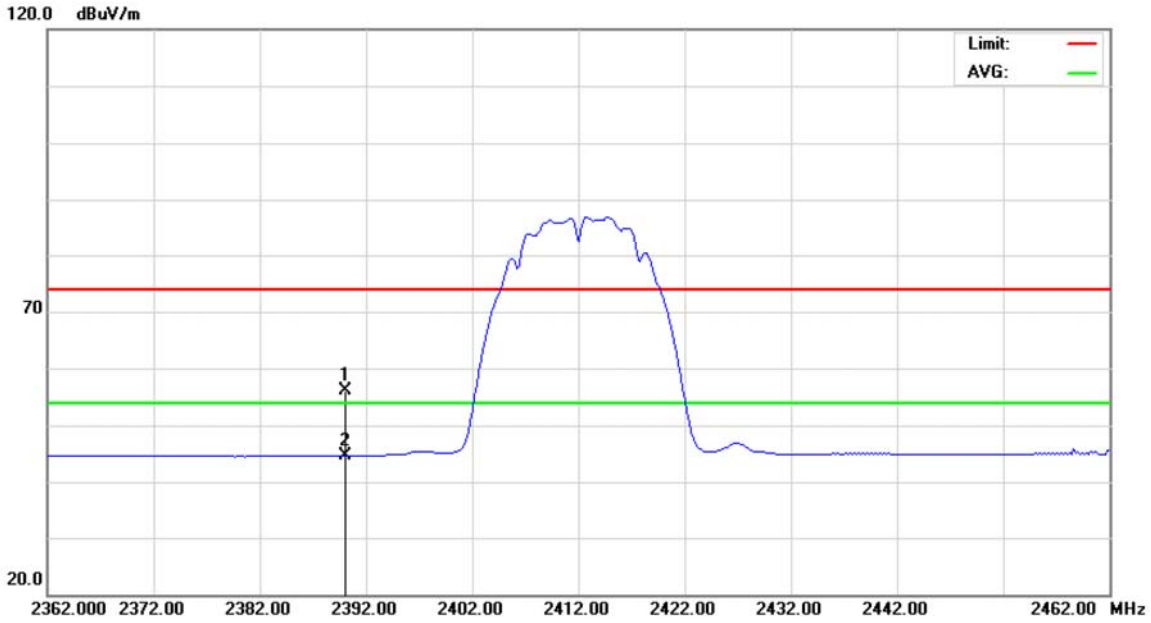
**Polarization: Vertical**




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | | 2483.500 | 20.91 | 33.64 | 54.55 | 74.00 | -19.45 | peak | |
| 2 | * | 2483.500 | 11.45 | 33.64 | 45.09 | 54.00 | -8.91 | AVG | |

| | | | |
|---|---|---|---|
| E.U.T | WiFi Microscope | Model Name | DMC-2313 |
| Temperature | 24°C | Relative Humidity | 46% |
| Test Voltage | DC 4.5V | | |
| Test Mode | IEEE 802.11b | | |
| NOTE | The transmitter was setup to transmit at the lowest channel and the field strength was measured at 2310-2390 MHz. | | |

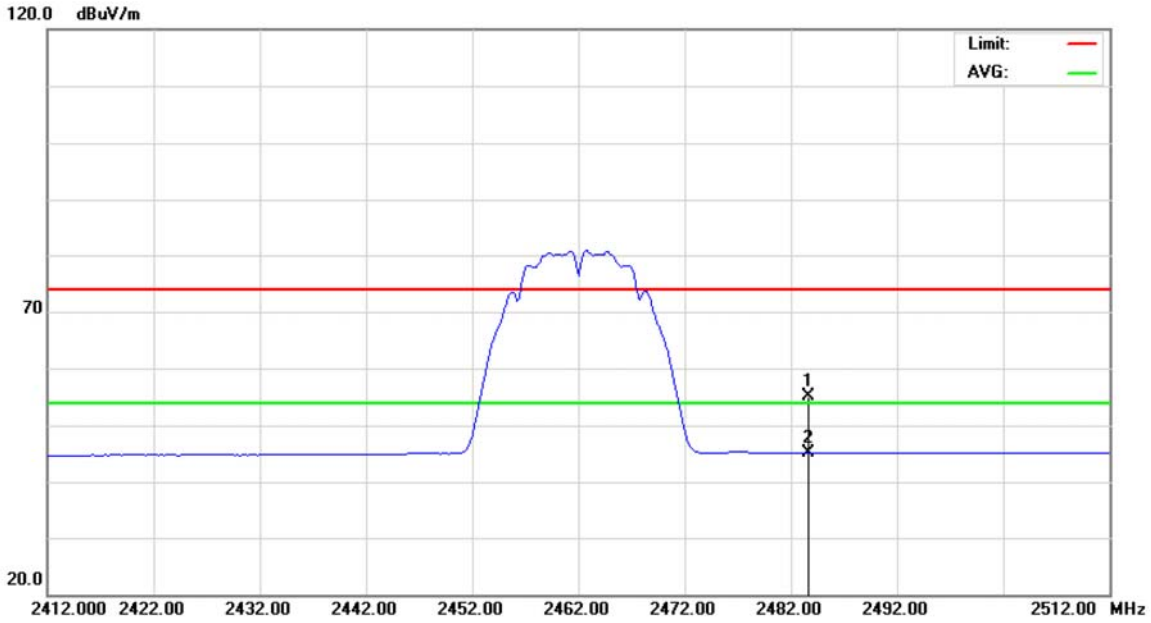
**Polarization: Horizontal**




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | | 2390.000 | 22.81 | 33.23 | 56.04 | 74.00 | -17.96 | peak | |
| 2 | * | 2390.000 | 11.35 | 33.23 | 44.58 | 54.00 | -9.42 | AVG | |

| | | | |
|---|---|---|---|
| E.U.T | WiFi Microscope | Model Name | DMC-2313 |
| Temperature | 24°C | Relative Humidity | 46% |
| Test Voltage | DC 4.5V | | |
| Test Mode | IEEE 802.11b | | |
| NOTE | The transmitter was setup to transmit at the highest channel and the field strength was measured at 2483.5-2500 MHz. | | |

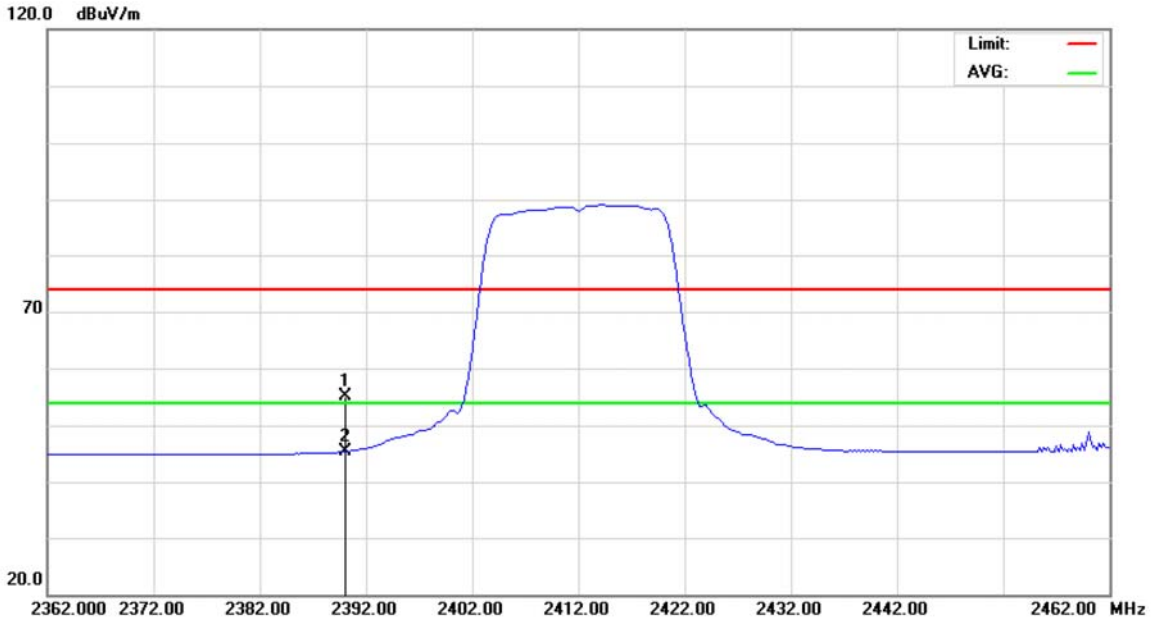
**Polarization: Horizontal**




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | | 2483.500 | 21.58 | 33.64 | 55.22 | 74.00 | -18.78 | peak | |
| 2 | * | 2483.500 | 11.38 | 33.64 | 45.02 | 54.00 | -8.98 | AVG | |

| | | | |
|---|---|---|---|
| E.U.T | WiFi Microscope | Model Name | DMC-2313 |
| Temperature | 24°C | Relative Humidity | 46% |
| Test Voltage | DC 4.5V | | |
| Test Mode | IEEE 802.11g | | |
| NOTE | The transmitter was setup to transmit at the lowest channel and the field strength was measured at 2310-2390 MHz. | | |

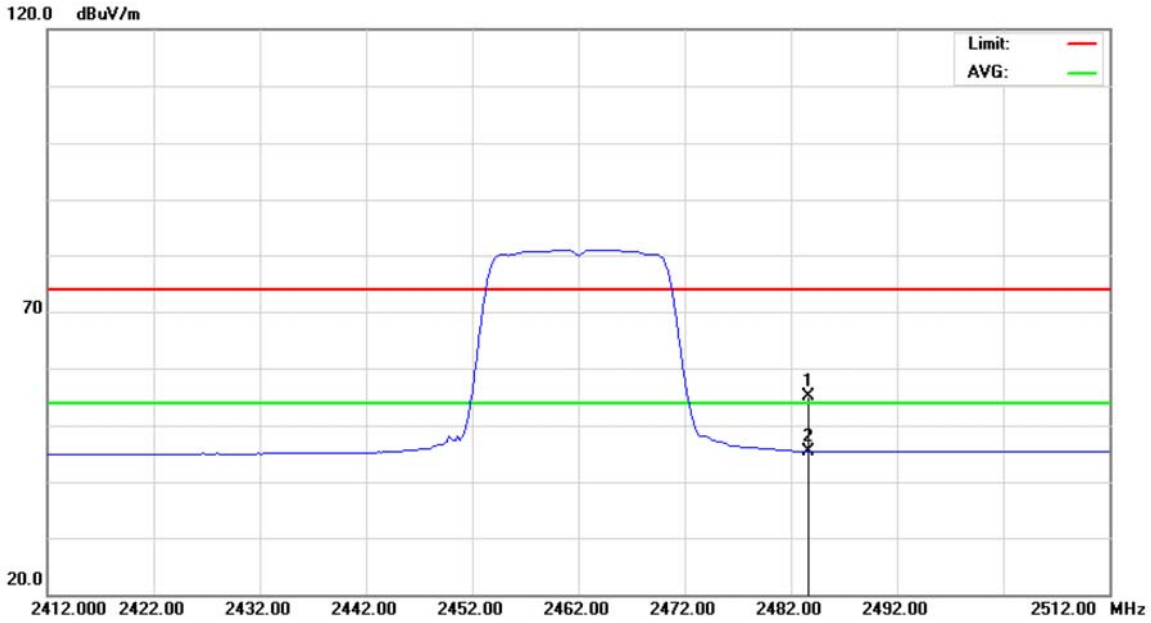
**Polarization: Vertical**




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | | 2390.000 | 21.63 | 33.42 | 55.05 | 74.00 | -18.95 | peak | |
| 2 | * | 2390.000 | 11.93 | 33.42 | 45.35 | 54.00 | -8.65 | AVG | |

| | | | |
|---|---|---|---|
| E.U.T | WiFi Microscope | Model Name | DMC-2313 |
| Temperature | 24°C | Relative Humidity | 46% |
| Test Voltage | DC 4.5V | | |
| Test Mode | IEEE 802.11g | | |
| NOTE | The transmitter was setup to transmit at the highest channel and the field strength was measured at 2483.5-2500 MHz. | | |

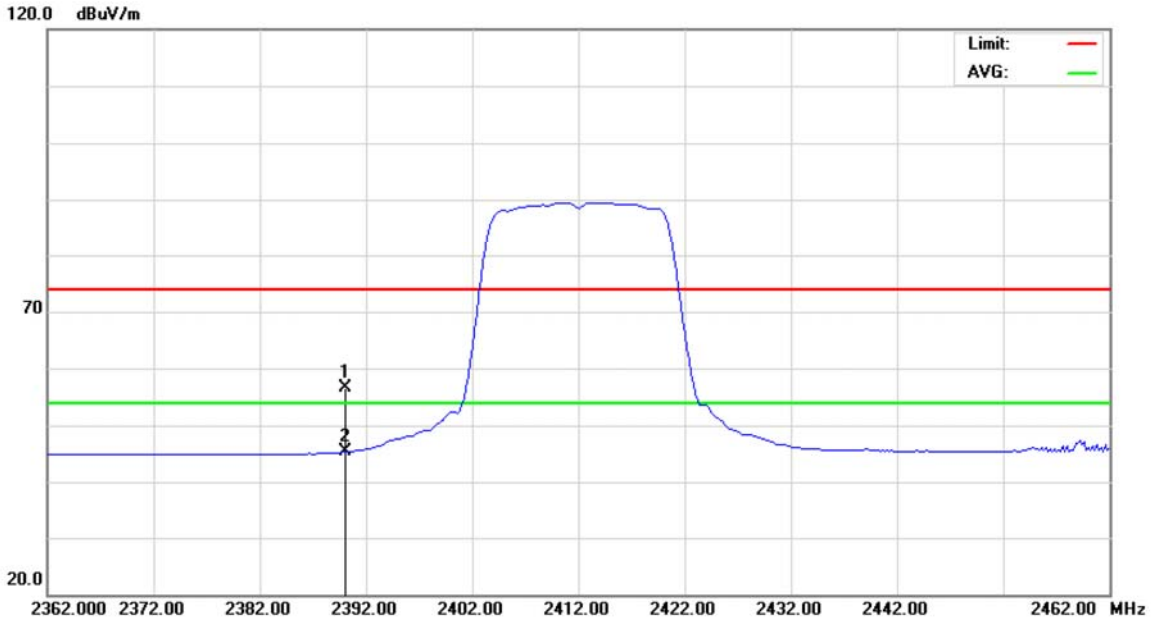
**Polarization: Vertical**




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | | 2483.500 | 21.17 | 33.92 | 55.09 | 74.00 | -18.91 | peak | |
| 2 | * | 2483.500 | 11.50 | 33.92 | 45.42 | 54.00 | -8.58 | AVG | |

| | | | |
|---|---|---|---|
| E.U.T | WiFi Microscope | Model Name | DMC-2313 |
| Temperature | 24°C | Relative Humidity | 46% |
| Test Voltage | DC 4.5V | | |
| Test Mode | IEEE 802.11g | | |
| NOTE | The transmitter was setup to transmit at the lowest channel and the field strength was measured at 2310-2390 MHz. | | |

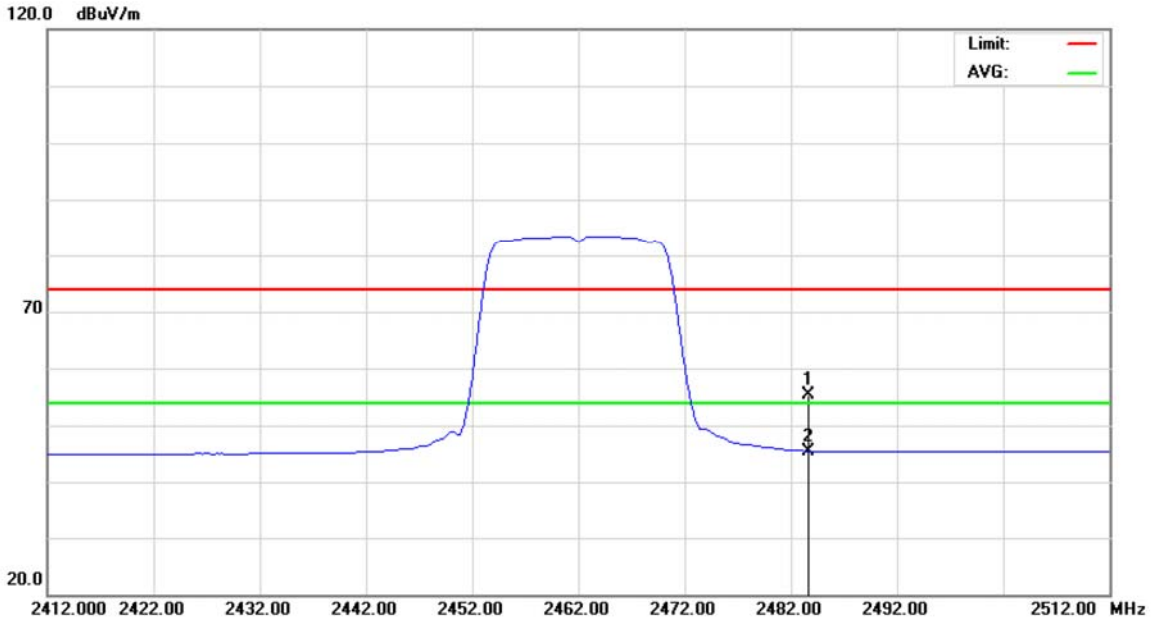
**Polarization: Horizontal**




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | | 2390.000 | 23.24 | 33.42 | 56.66 | 74.00 | -17.34 | peak | |
| 2 | * | 2390.000 | 11.86 | 33.42 | 45.28 | 54.00 | -8.72 | AVG | |

| | | | |
|---|---|---|---|
| E.U.T | WiFi Microscope | Model Name | DMC-2313 |
| Temperature | 24°C | Relative Humidity | 46% |
| Test Voltage | DC 4.5V | | |
| Test Mode | IEEE 802.11g | | |
| NOTE | The transmitter was setup to transmit at the highest channel and the field strength was measured at 2483.5-2500 MHz. | | |

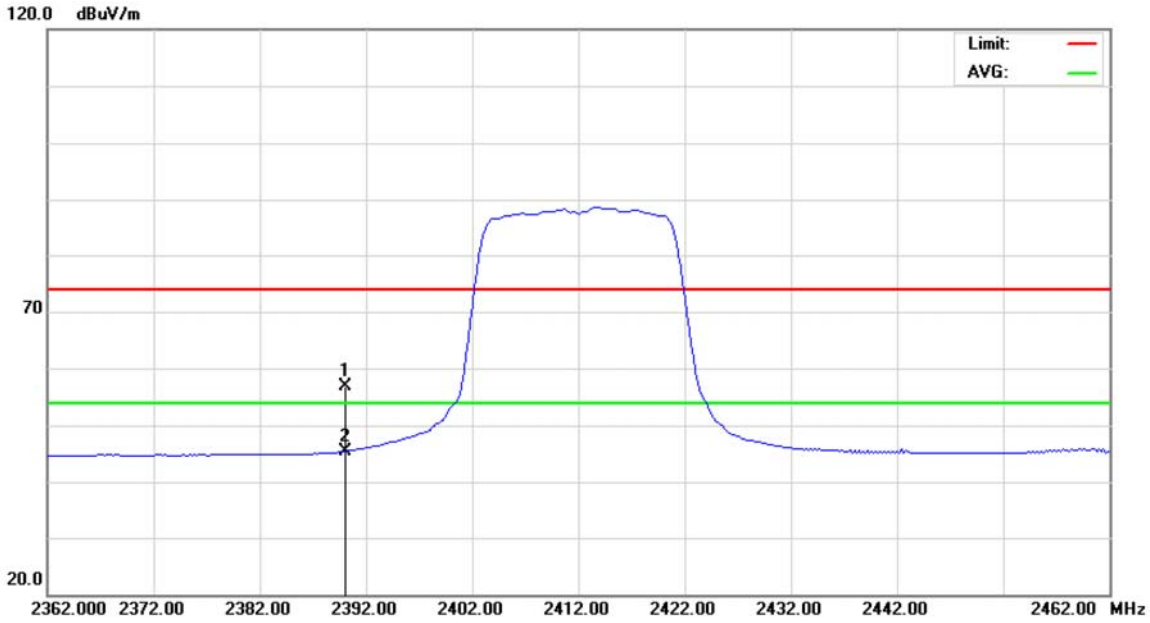
**Polarization: Horizontal**




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | | 2483.500 | 21.44 | 33.92 | 55.36 | 74.00 | -18.64 | peak | |
| 2 | * | 2483.500 | 11.54 | 33.92 | 45.46 | 54.00 | -8.54 | AVG | |

| | | | |
|---|---|---|---|
| E.U.T | WiFi Microscope | Model Name | DMC-2313 |
| Temperature | 24°C | Relative Humidity | 46% |
| Test Voltage | DC 4.5V | | |
| Test Mode | IEEE 802.11n (20 MHz) | | |
| NOTE | The transmitter was setup to transmit at the lowest channel and the field strength was measured at 2310-2390 MHz. | | |

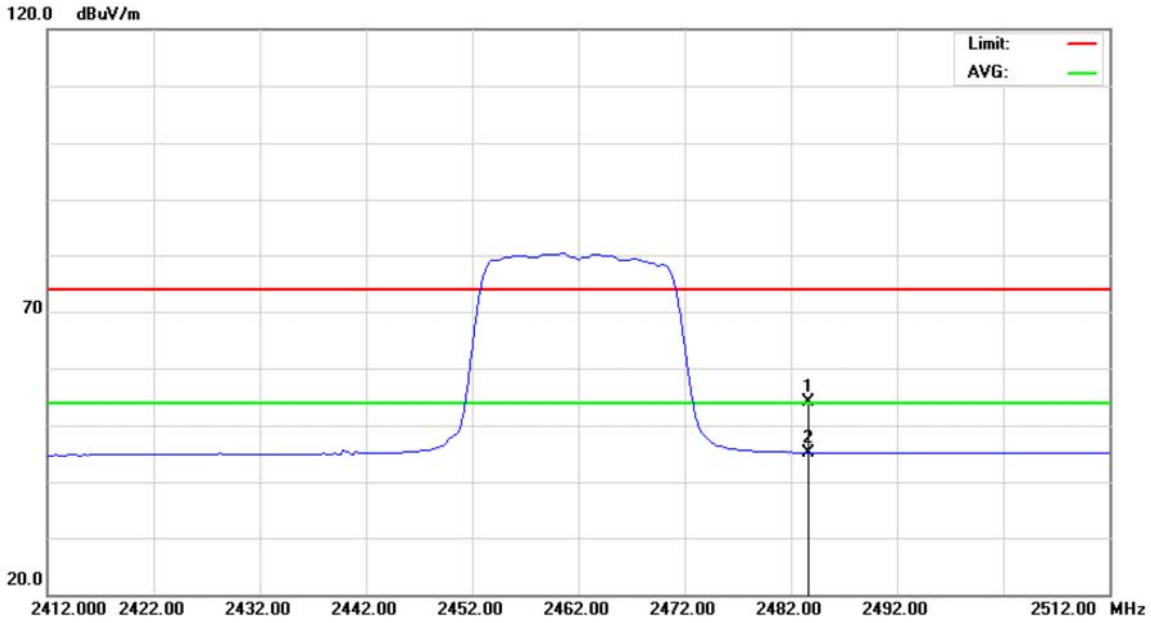
**Polarization: Vertical**




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | | 2390.000 | 23.62 | 33.23 | 56.85 | 74.00 | -17.15 | peak | |
| 2 | * | 2390.000 | 12.19 | 33.23 | 45.42 | 54.00 | -8.58 | AVG | |

| | | | |
|---|---|---|---|
| E.U.T | WiFi Microscope | Model Name | DMC-2313 |
| Temperature | 24°C | Relative Humidity | 46% |
| Test Voltage | DC 4.5V | | |
| Test Mode | IEEE 802.11n (20 MHz) | | |
| NOTE | The transmitter was setup to transmit at the highest channel and the field strength was measured at 2483.5-2500 MHz. | | |

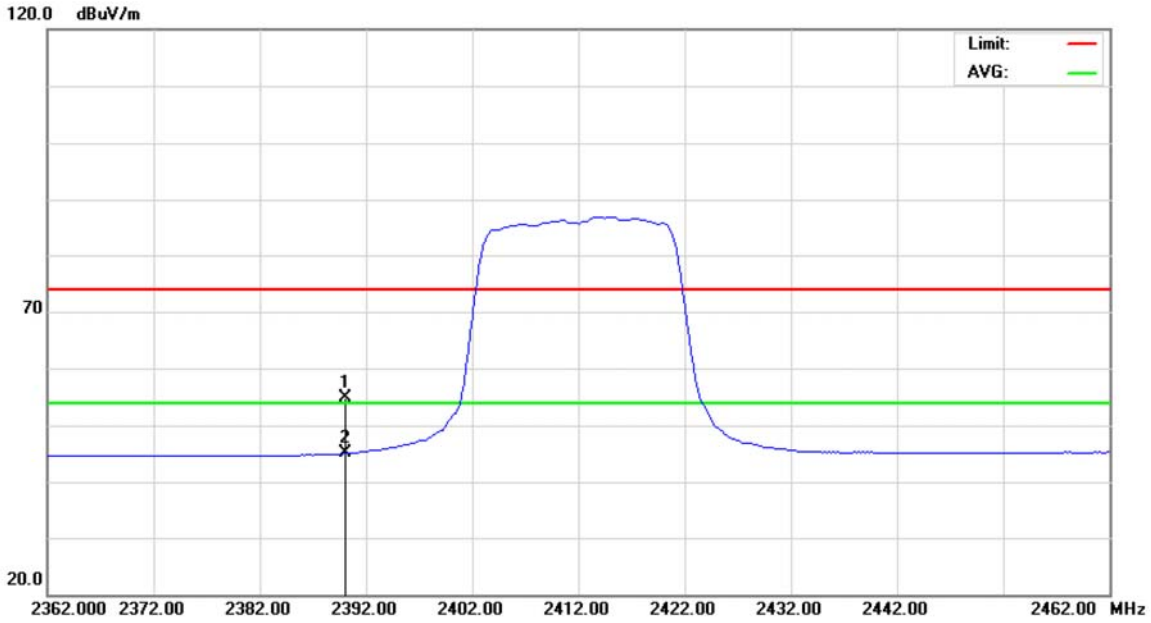
**Polarization: Vertical**




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | | 2483.500 | 20.46 | 33.64 | 54.10 | 74.00 | -19.90 | peak | |
| 2 | * | 2483.500 | 11.54 | 33.64 | 45.18 | 54.00 | -8.82 | AVG | |

| | | | |
|---|---|---|---|
| E.U.T | WiFi Microscope | Model Name | DMC-2313 |
| Temperature | 24°C | Relative Humidity | 46% |
| Test Voltage | DC 4.5V | | |
| Test Mode | IEEE 802.11n (20 MHz) | | |
| NOTE | The transmitter was setup to transmit at the lowest channel and the field strength was measured at 2310-2390 MHz. | | |

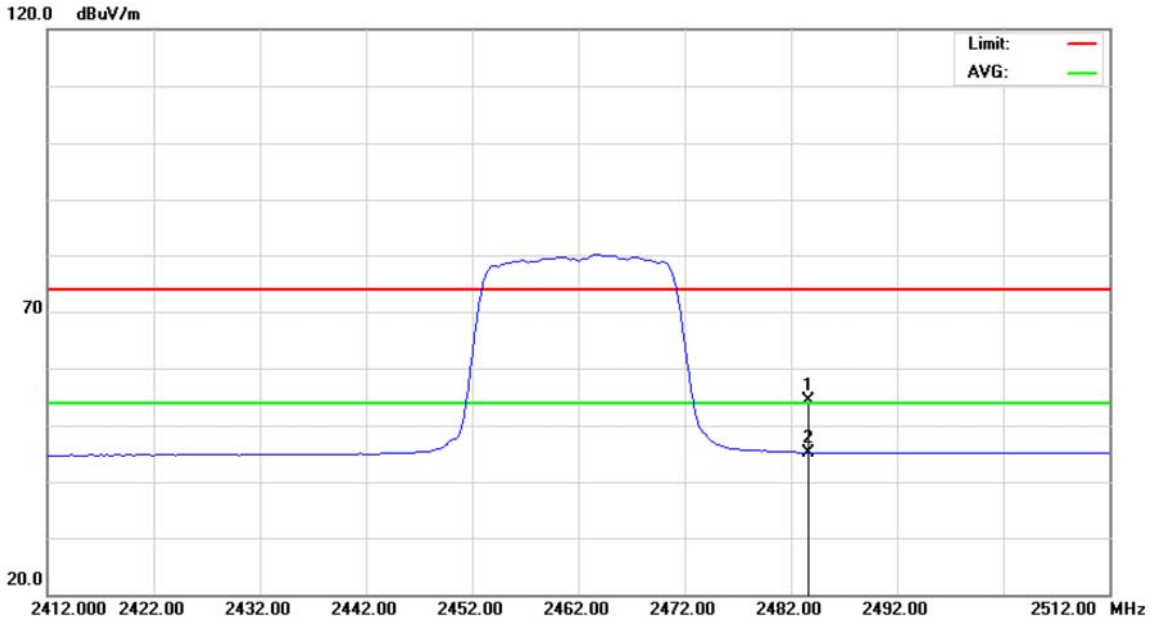
**Polarization: Horizontal**




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | | 2390.000 | 21.59 | 33.23 | 54.82 | 74.00 | -19.18 | peak | |
| 2 | * | 2390.000 | 11.78 | 33.23 | 45.01 | 54.00 | -8.99 | AVG | |

| | | | |
|---|---|---|---|
| E.U.T | WiFi Microscope | Model Name | DMC-2313 |
| Temperature | 24°C | Relative Humidity | 46% |
| Test Voltage | DC 4.5V | | |
| Test Mode | IEEE 802.11n (20 MHz) | | |
| NOTE | The transmitter was setup to transmit at the highest channel and the field strength was measured at 2483.5-2500 MHz. | | |

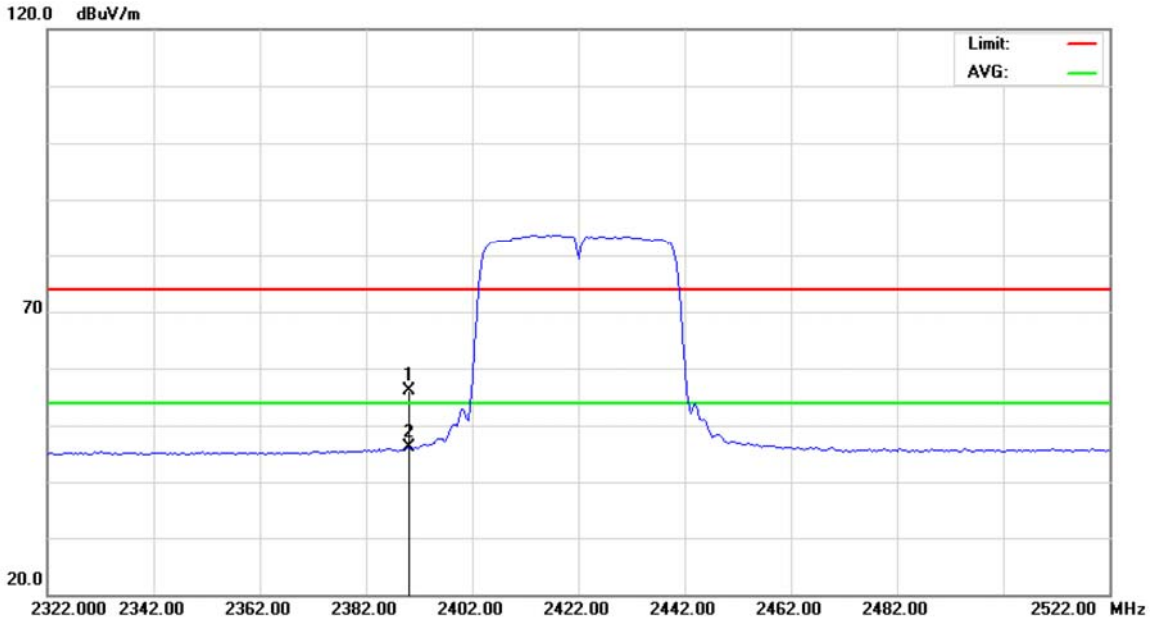
**Polarization: Horizontal**




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | | 2483.500 | 20.66 | 33.64 | 54.30 | 74.00 | -19.70 | peak | |
| 2 | * | 2483.500 | 11.57 | 33.64 | 45.21 | 54.00 | -8.79 | AVG | |

| | | | |
|---|---|---|---|
| E.U.T | WiFi Microscope | Model Name | DMC-2313 |
| Temperature | 24°C | Relative Humidity | 46% |
| Test Voltage | DC 4.5V | | |
| Test Mode | IEEE 802.11n (40 MHz) | | |
| NOTE | The transmitter was setup to transmit at the lowest channel and the field strength was measured at 2310-2390 MHz. | | |

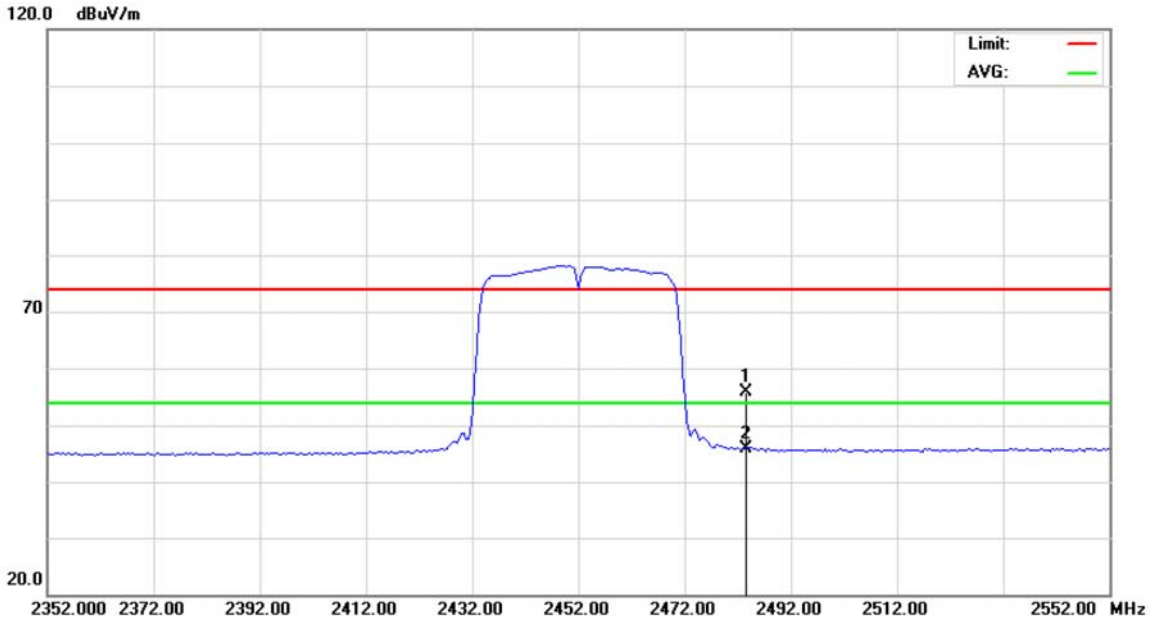
**Polarization: Vertical**




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | | 2390.000 | 22.87 | 33.23 | 56.10 | 74.00 | -17.90 | peak | |
| 2 | * | 2390.000 | 12.87 | 33.23 | 46.10 | 54.00 | -7.90 | AVG | |

| | | | |
|---|---|---|---|
| E.U.T | WiFi Microscope | Model Name | DMC-2313 |
| Temperature | 24°C | Relative Humidity | 46% |
| Test Voltage | DC 4.5V | | |
| Test Mode | IEEE 802.11n (40 MHz) | | |
| NOTE | The transmitter was setup to transmit at the highest channel and the field strength was measured at 2483.5-2500 MHz. | | |

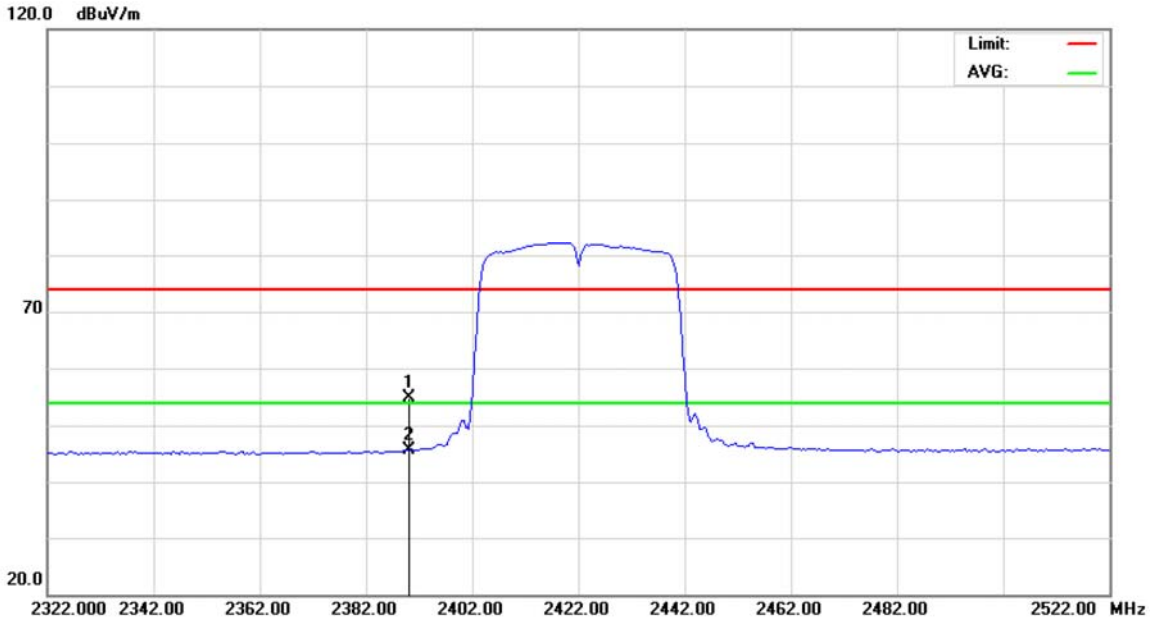
**Polarization: Vertical**




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | | 2483.500 | 22.13 | 33.64 | 55.77 | 74.00 | -18.23 | peak | |
| 2 | * | 2483.500 | 12.21 | 33.64 | 45.85 | 54.00 | -8.15 | AVG | |

| | | | |
|---|---|---|---|
| E.U.T | WiFi Microscope | Model Name | DMC-2313 |
| Temperature | 24°C | Relative Humidity | 46% |
| Test Voltage | DC 4.5V | | |
| Test Mode | IEEE 802.11n (40 MHz) | | |
| NOTE | The transmitter was setup to transmit at the lowest channel and the field strength was measured at 2310-2390 MHz. | | |

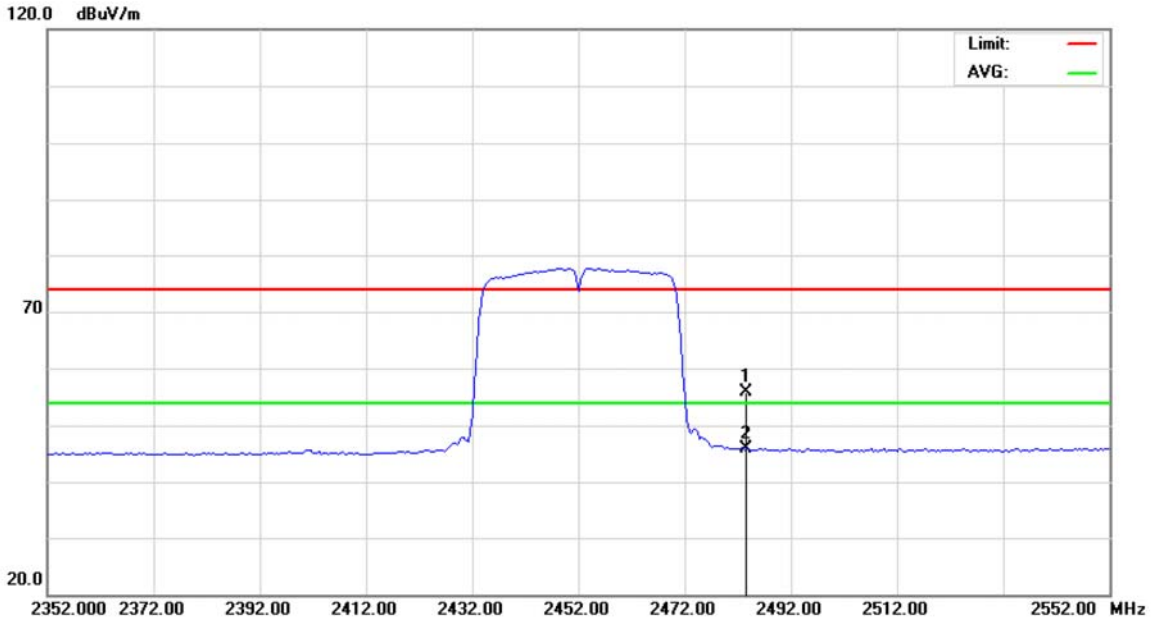
**Polarization: Horizontal**




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | | 2390.000 | 21.53 | 33.23 | 54.76 | 74.00 | -19.24 | peak | |
| 2 | * | 2390.000 | 12.35 | 33.23 | 45.58 | 54.00 | -8.42 | AVG | |

| | | | |
|---|---|---|---|
| E.U.T | WiFi Microscope | Model Name | DMC-2313 |
| Temperature | 24°C | Relative Humidity | 46% |
| Test Voltage | DC 4.5V | | |
| Test Mode | IEEE 802.11n (40 MHz) | | |
| NOTE | The transmitter was setup to transmit at the highest channel and the field strength was measured at 2483.5-2500 MHz. | | |

**Polarization: Horizontal**




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | | 2483.500 | 22.28 | 33.64 | 55.92 | 74.00 | -18.08 | peak | |
| 2 | * | 2483.500 | 12.13 | 33.64 | 45.77 | 54.00 | -8.23 | AVG | |

# 9 POWER SPECTRAL DENSITY

## 9.1 LIMIT

| Test Item | Frequency Range (MHz) | Limit |
|---|---|---|
| Power Spectral Density | 2400-2483.5 | 8 dBm (in any 3 kHz) |

## 9.2 MEASUREMENT INSTRUMENTS LIST

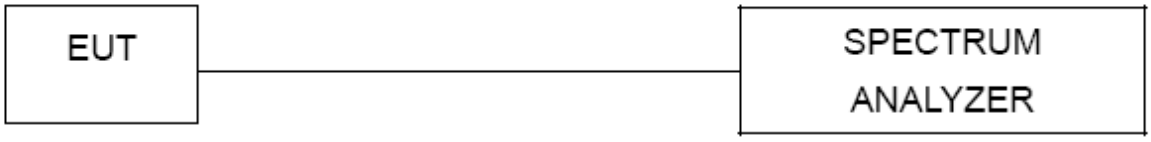
| Item | Kind of Equipment | Manufacturer | Type No. | Serial No. | Calibrated until |
|---|---|---|---|---|---|
| 1 | Spectrum Analyzer | R&S | FSP-40 | 100129 | Oct. 01, 2013 |

NOTE: **N/A**: denotes No Model Name, No Serial No. or No Calibration specified.

## 9.3 TEST PROCEDURES

a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.
b. Spectrum Setting: RBW=3 kHz, VBW=30 kHz, Sweep time = 500s.

## 9.4 TEST SETUP LAYOUT




## 9.5 DEVIATION FROM TEST STANDARD

No deviation

## 9.6 EUT OPERATING CONDITIONS

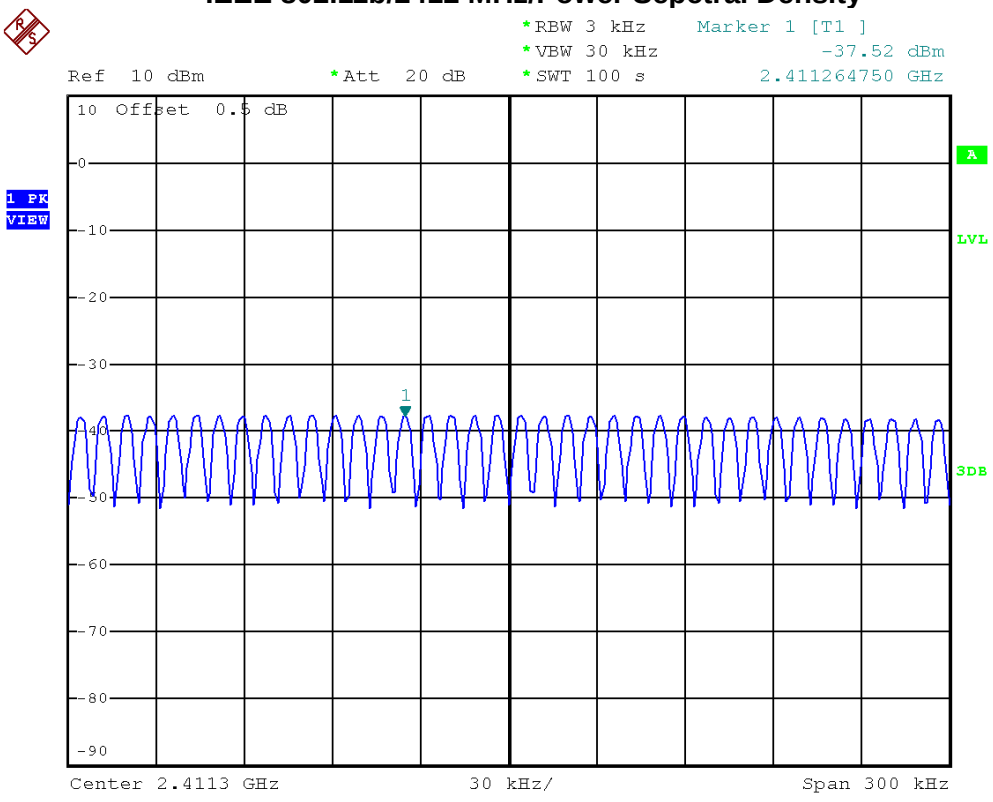
The EUT tested system was configured as the statements of 4.6 Unless otherwise a special operating condition is specified in the follows during the testing.

## 9.7 TEST RESULTS - 2400-2483.5 MHZ

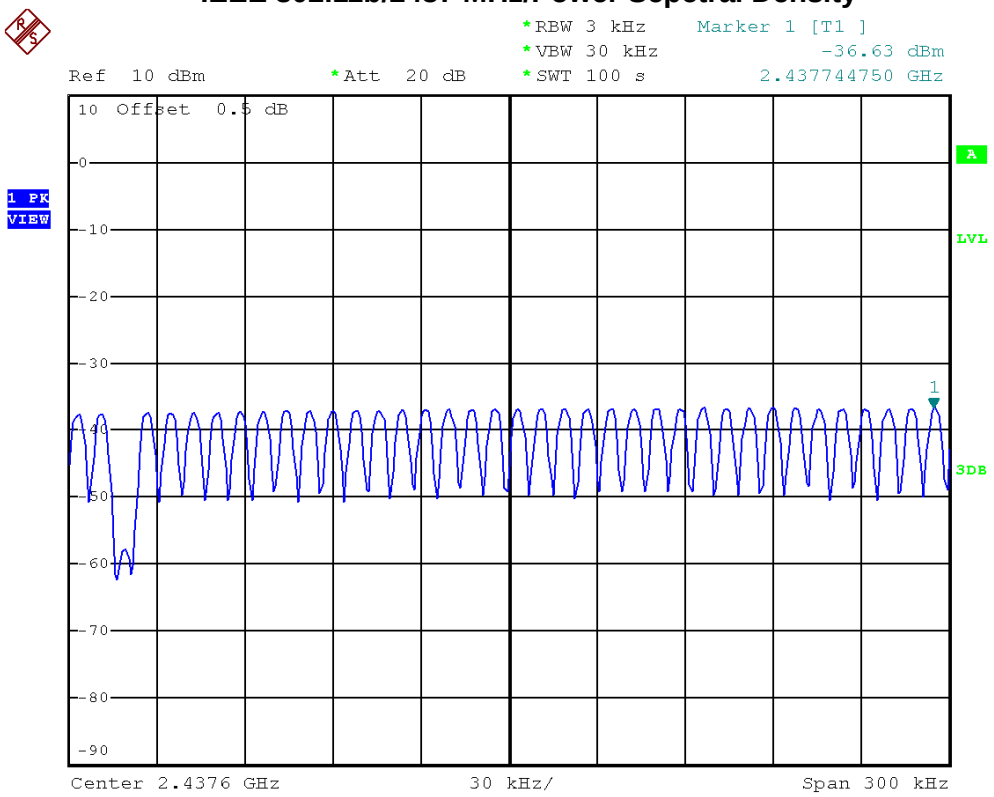
| E.U.T | WiFi Microscope | Model Name | DMC-2313 |
|---|---|---|---|
| Temperature | 26°C | Relative Humidity | 60% |
| Test Voltage | DC 4.5V | | |
| Test Mode | IEEE 802.11b/2412 MHz, 2437 MHz, 2462 MHz | | |

| Frequency | Power Density (dBm) | Limit (dBm) | Result |
|---|---|---|---|
| 2412 MHz | -37.52 | 8 | PASS |
| 2437 MHz | -36.63 | 8 | PASS |
| 2462 MHz | -35.07 | 8 | PASS |

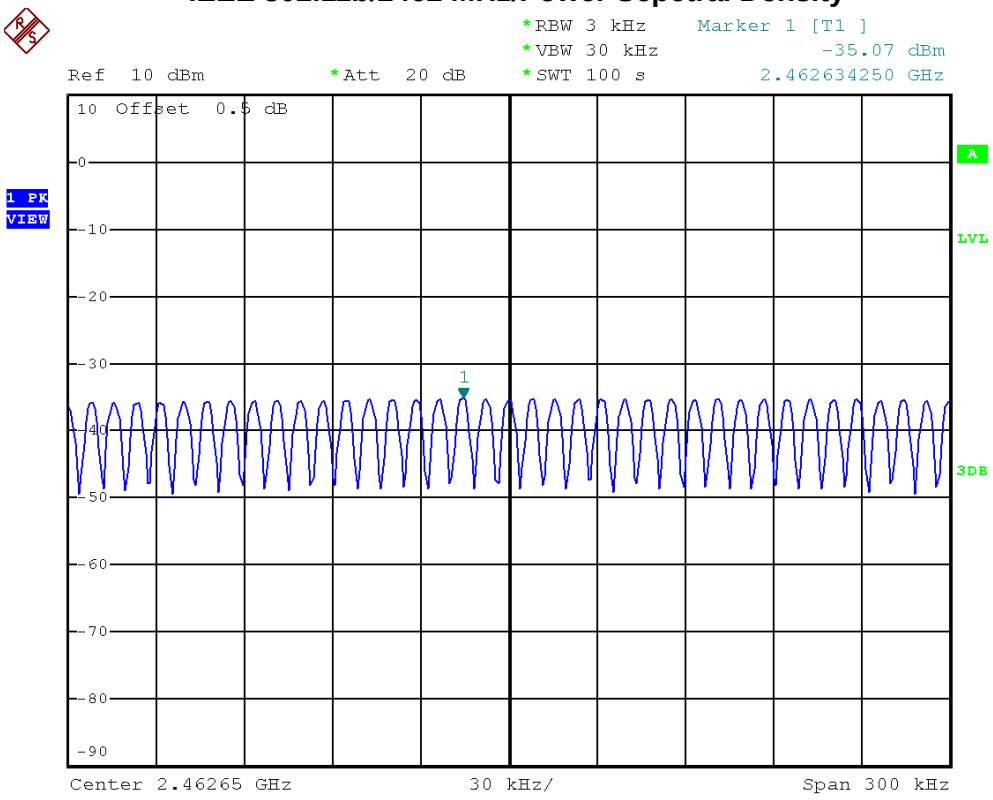
**IEEE 802.11b/2412 MHz/Power Sepctral Density**



## IEEE 802.11b/2437 MHz/Power Sepctral Density



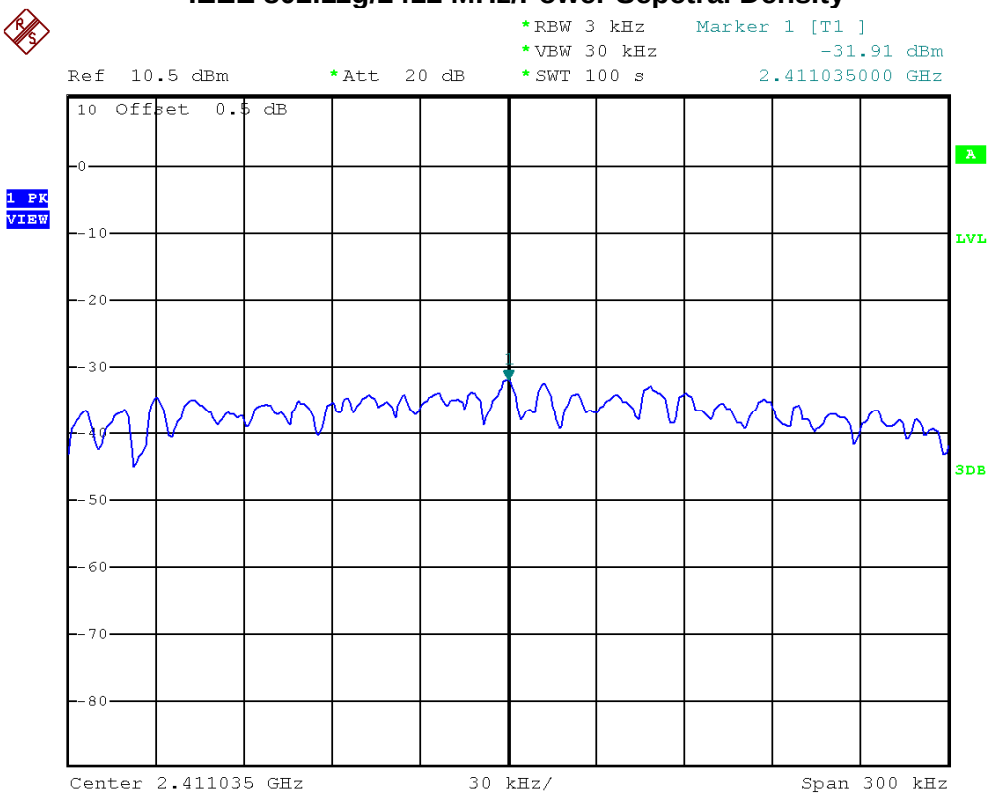

## IEEE 802.11b/2462 MHz/Power Sepctral Density



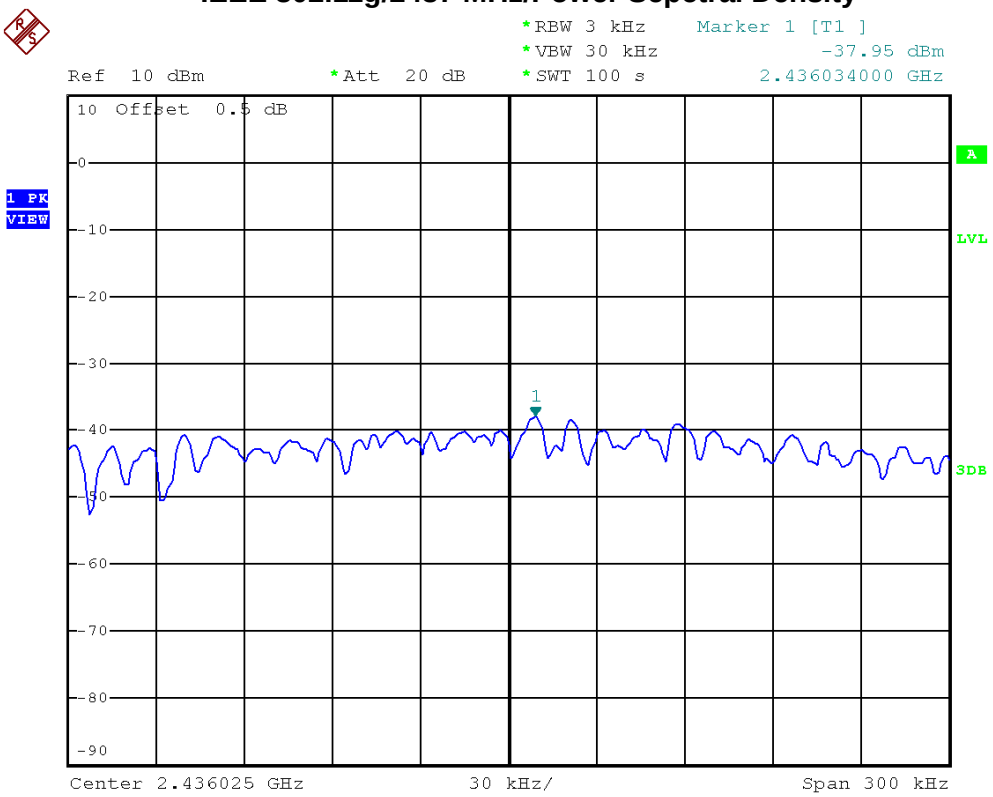
| E.U.T | WiFi Microscope | Model Name | DMC-2313 |
|---|---|---|---|
| Temperature | 26°C | Relative Humidity | 60% |
| Test Voltage | DC 4.5V | | |
| Test Mode | IEEE 802.11g/2412 MHz, 2437 MHz, 2462 MHz | | |

| Frequency | Power Density (dBm) | Limit (dBm) | Result |
|---|---|---|---|
| 2412 MHz | -31.91 | 8 | PASS |
| 2437 MHz | -37.95 | 8 | PASS |
| 2462 MHz | -36.57 | 8 | PASS |

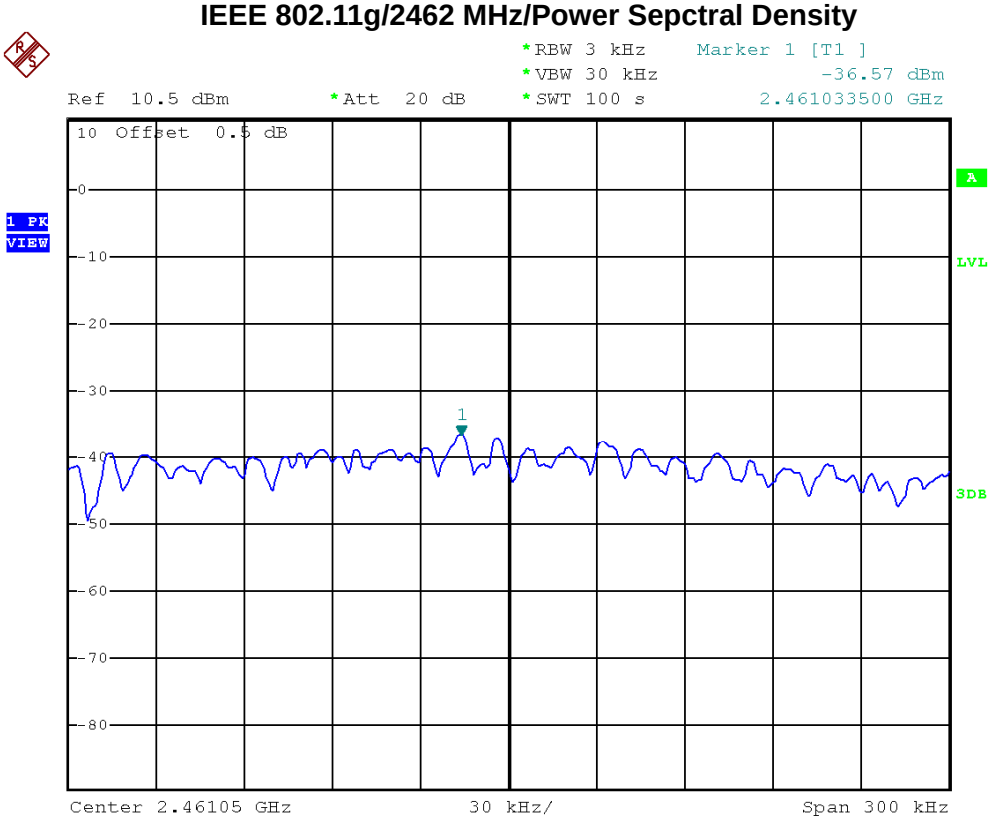
**IEEE 802.11g/2412 MHz/Power Sepctral Density**



## IEEE 802.11g/2437 MHz/Power Sepctral Density



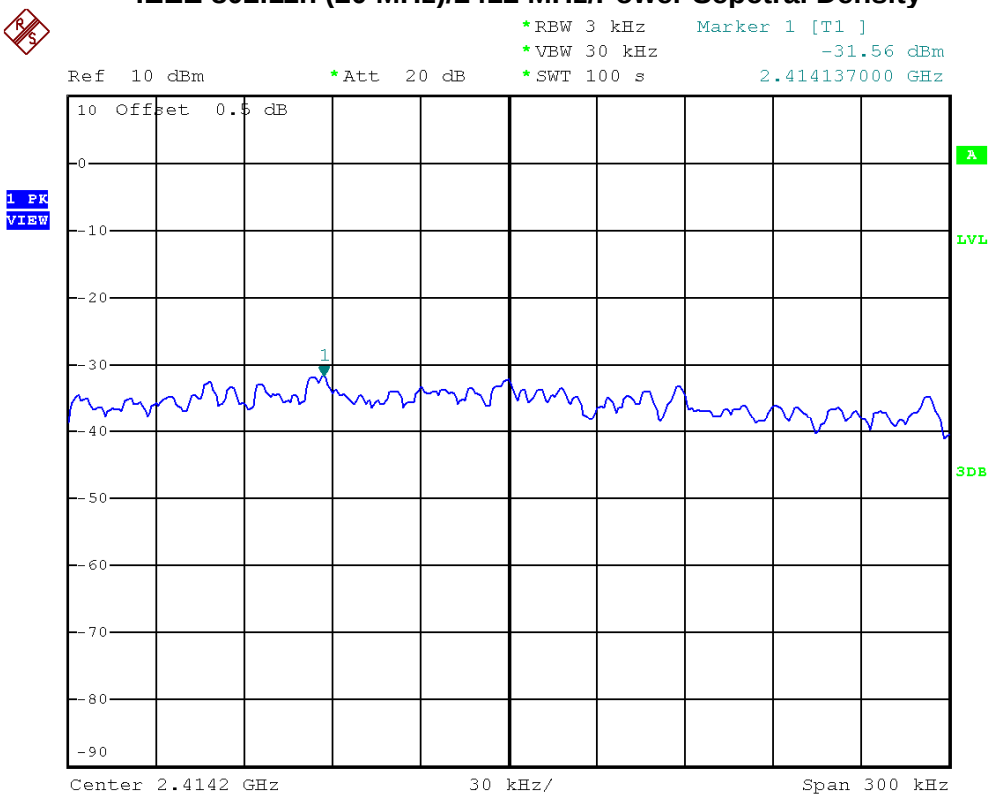

## IEEE 802.11g/2462 MHz/Power Sepctral Density



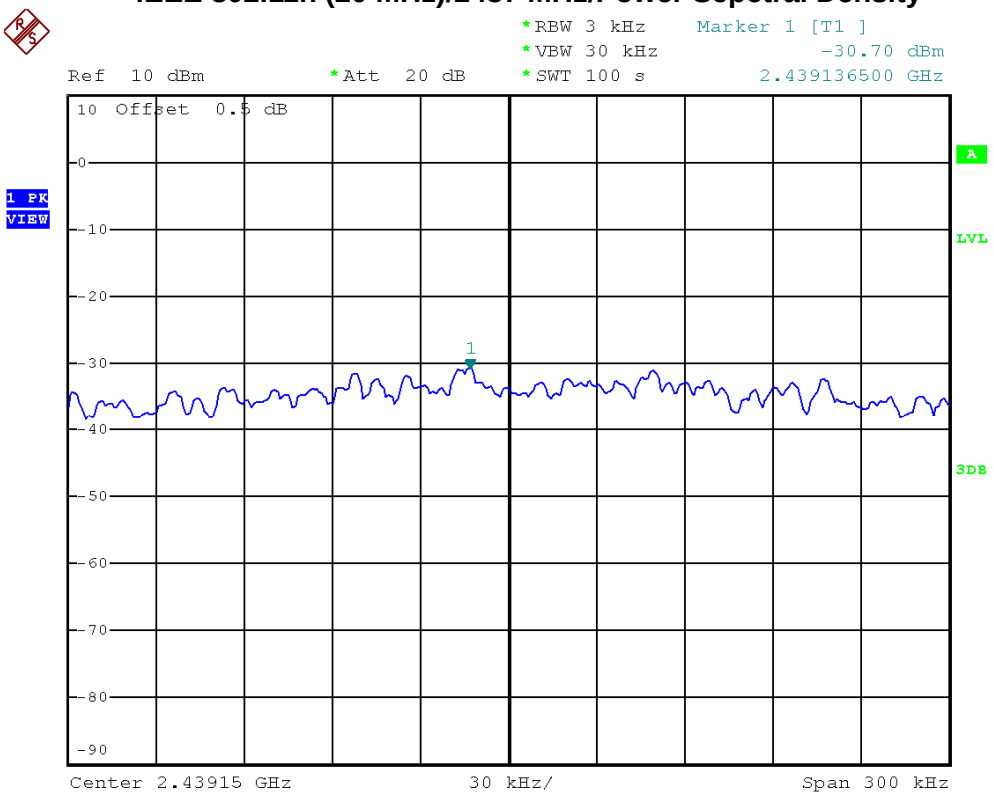
| E.U.T | WiFi Microscope | Model Name | DMC-2313 |
|---|---|---|---|
| Temperature | 26°C | Relative Humidity | 60% |
| Test Voltage | DC 4.5V | | |
| Test Mode | IEEE 802.11n (20 MHz)/2412 MHz, 2437 MHz, 2462 MHz | | |

| Frequency | Power Density (dBm) | Limit (dBm) | Result |
|---|---|---|---|
| 2412 MHz | -31.56 | 8 | PASS |
| 2437 MHz | -30.70 | 8 | PASS |
| 2462 MHz | -35.93 | 8 | PASS |

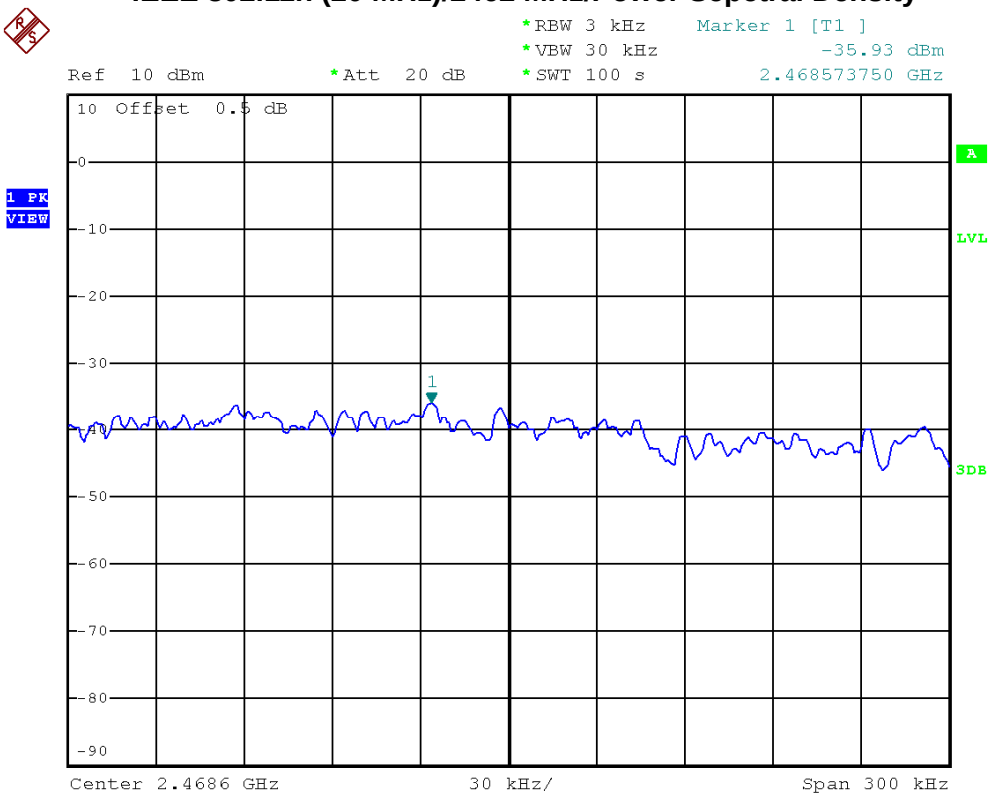
**IEEE 802.11n (20 MHz)/2412 MHz/Power Sepctral Density**



## IEEE 802.11n (20 MHz)/2437 MHz/Power Sepctral Density



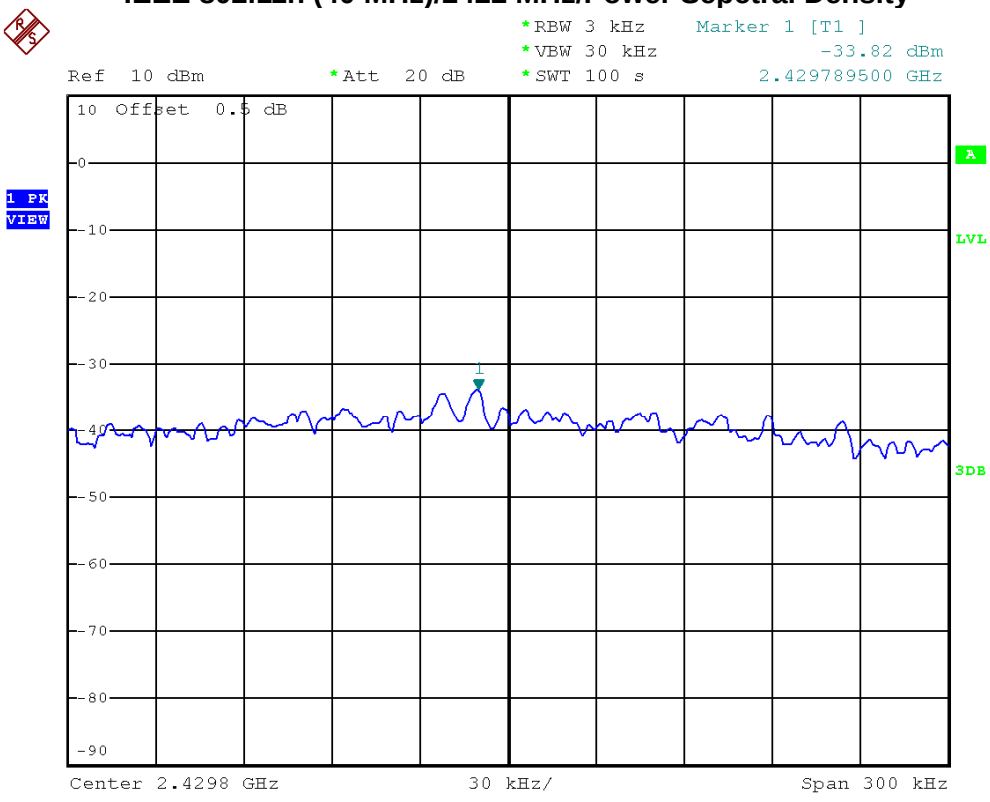

## IEEE 802.11n (20 MHz)/2462 MHz/Power Sepctral Density



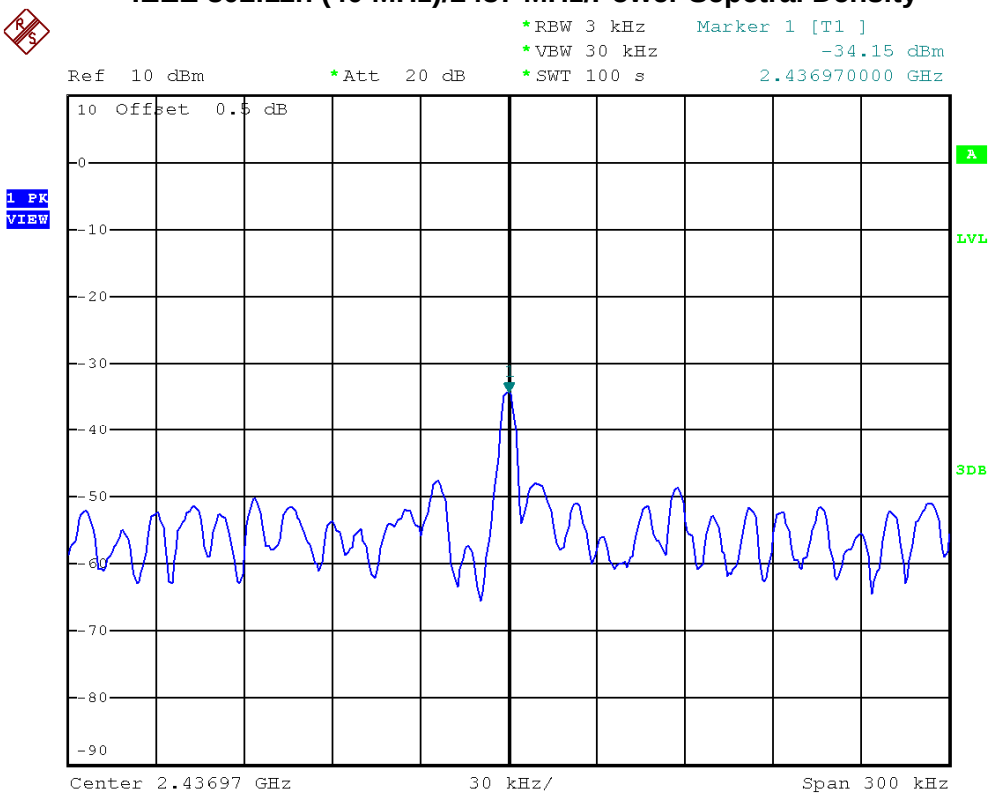
| E.U.T | WiFi Microscope | Model Name | DMC-2313 |
|---|---|---|---|
| Temperature | 26°C | Relative Humidity | 60% |
| Test Voltage | DC 4.5V | | |
| Test Mode | IEEE 802.11n (40 MHz)/2422 MHz, 2437 MHz, 2452 MHz | | |

| Frequency | Power Density (dBm) | Limit (dBm) | Result |
|---|---|---|---|
| 2422 MHz | -33.82 | 8 | PASS |
| 2437 MHz | -34.15 | 8 | PASS |
| 2452 MHz | -35.37 | 8 | PASS |

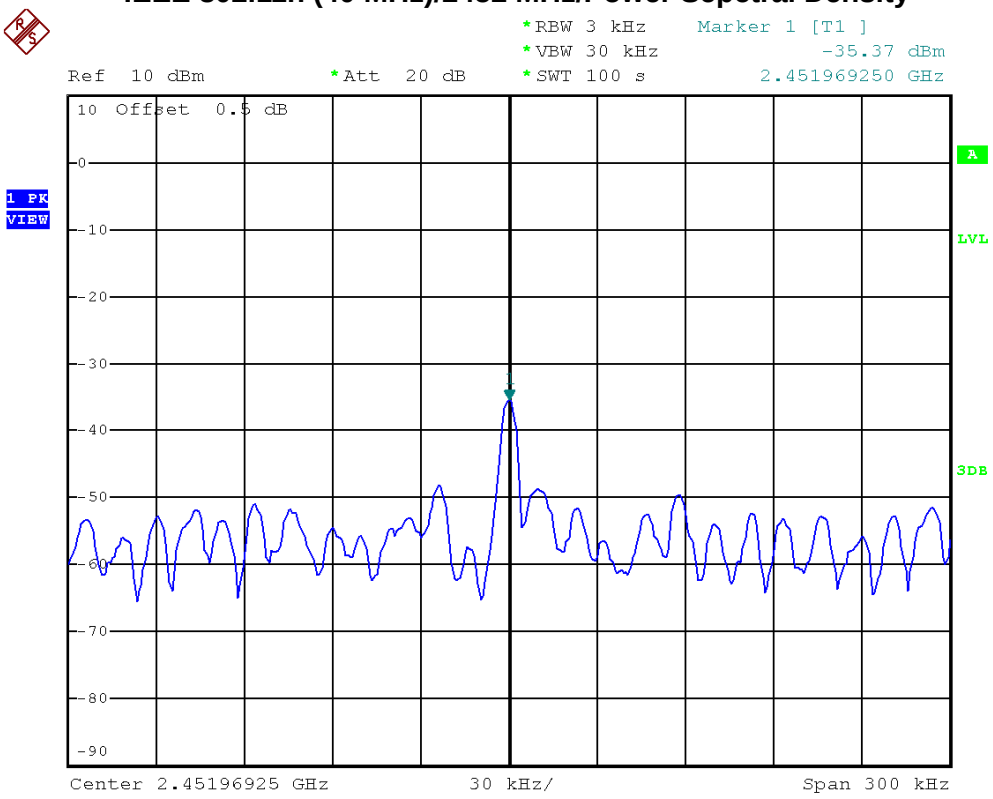
**IEEE 802.11n (40 MHz)/2422 MHz/Power Sepctral Density**



## IEEE 802.11n (40 MHz)/2437 MHz/Power Sepctral Density




## IEEE 802.11n (40 MHz)/2452 MHz/Power Sepctral Density



# 10 RF EXPOSURE COMPLIANCE

## 10.1 LIMIT

Systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess limit for maximum permissible exposure. In accordance with 47 CFR FCC Part 2 Subpart J, section 2.1091 this device has been defined as a mobile device whereby a distance of 0.2 m normally can be maintained between the user and the device.

(A) Limits for Occupational / Controlled Exposure

| Frequency Range (MHz) | Electric Field Strength (E) (V/m) | Magnetic Field Strength (H) (A/m) | Power Density (S) (mW/ $cm^2$) | Averaging Time $\|E\|^2$,$\|H\|^2$or S (minutes) |
|---|---|---|---|---|
| 0.3-3.0 | 614 | 1.63 | (100)* | 6 |
| 3.0-30 | 1842 / f | 4.89 / f | (900 / f)* | 6 |
| 30-300 | 61.4 | 0.163 | 1.0 | 6 |
| 300-1500 | | | F/300 | 6 |
| 1500-100,000 | | | 5 | 6 |

(B) Limits for General Population / Uncontrolled Exposure

| Frequency Range (MHz) | Electric Field Strength (E) (V/m) | Magnetic Field Strength (H) (A/m) | Power Density (S) (mW/ $cm^2$) | Averaging Time $\|E\|^2$,$\|H\|^2$ or S (minutes) |
|---|---|---|---|---|
| 0.3-1.34 | 614 | 1.63 | (100)* | 30 |
| 1.34-30 | 824/f | 2.19/f | (180/f)* | 30 |
| 30-300 | 27.5 | 0.073 | 0.2 | 30 |
| 300-1500 | | | F/1500 | 30 |
| 1500-100,000 | | | 1.0 | 30 |

NOTE: f = frequency in MHz ; *Plane-wave equivalent power density.

## 10.2 MEASUREMENT INSTRUMENTS LIST

| Item | Kind of Equipment | Manufacturer | Type No. | Serial No. | Calibrated until |
|---|---|---|---|---|---|
| 1 | Power Meter | Anritsu | ML2495A | 1128008 | Feb. 20,2013 |
| 2 | Power Meter Sensor | Anritsu | MA2411B | 1126001 | Feb. 20,2013 |

NOTE: **N/A**: denotes No Model Name, No Serial No. or No Calibration specified.

## 10.3 MPE CALCULATION METHOD

E (V/m) $= \frac{\sqrt{30 \times P \times G}}{d}$ Power Density: *Pd* (W/m²) $= \frac{E^2}{377}$

**E** = Electric field (V/m)

**P** = Peak RF output power (W)

**G** = EUT Antenna numeric gain (numeric)

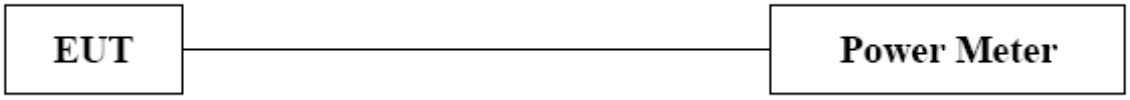
**d** = Separation distance between radiator and human body (m)

The formula can be changed to

$$Pd = \frac{30 \times P \times G}{377 \times d^2}$$

From the peak EUT RF output power, the minimum mobile separation distance, d=0.2m, as well as the gain of the used antenna, the RF power density can be obtained

## 10.4TEST SETUP LAYOUT




## 10.5DEVIATION FROM TEST STANDARD

No deviation

## 10.6EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 4.6 Unless otherwise a special operating condition is specified in the follows during the testing.

## 10.7TEST RESULTS - 2400-2483.5 MHZ

The power is so low so there is no need for RF calculations.