



# TEST REPORT

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## COMPLIANCE TEST REPORT

|                        |                                          |
|------------------------|------------------------------------------|
| EUT Description        | Wireless Module Installed in Notebook PC |
| Brand Name             | Intel® Wi-Fi 6E AX211                    |
| Model Name             | P123F                                    |
| FCC ID                 | PD9AX211D2                               |
| Date of Test Start/End | 2023-03-28 / 2022-03-28                  |
| Features               | IEEE 802.11a/b/g/n/ac/ax                 |

|                      |                                                                       |
|----------------------|-----------------------------------------------------------------------|
| Applicant            | Intel Mobile Communications                                           |
| Address              | 100 Center Point Circle, Suite 200 Columbia, South Carolina 29210 USA |
| Contact Person       | Steven Hackett                                                        |
| Telephone/Fax/ Email | steven.c.hackett@intel.com                                            |

|                            |                                                                                                   |
|----------------------------|---------------------------------------------------------------------------------------------------|
| Test Report identification | 221227-03.TR05                                                                                    |
| Revision Control           | Rev. 01<br>This test report replaces any previous versions of this test report<br>(see Section 1) |

The test results relate only to the samples tested.

Reviewed by

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Cheiel IN  
(Technical Lead)

Intel Corporation S.A.S – WRF Lab  
425 rue de Goa – Le Cargo B6 - 06600, Antibes, France  
Tel. +33493001400 / Fax +33493001401

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### 1. General conditions, competences and guarantees

- ✓ Intel WRF Lab only provides testing services and is committed to providing reliable, unbiased test results and interpretations.
- ✓ Intel WRF Lab is liable to the client for the maintenance of the confidentiality of all information related to the item under test and the results of the test.
- ✓ Intel WRF Lab has developed calibration and proficiency programs for its measurement equipment to ensure correlated and reliable results to its customers.
- ✓ This report is only referred to the item that has undergone the test.
- ✓ This report does not imply an approval of the product by the Certification Bodies or competent Authorities.

### 2. Environmental Conditions

- ✓ At the site where the measurements were performed the following limits were not exceeded during the tests:

|             |                |
|-------------|----------------|
| Temperature | 21.1°C ± 1.3°C |
| Humidity    | 38.1% ± 3.2%   |

### 3. Test Sample

| Sample | ID #          | Description                              | Model | Serial #      |
|--------|---------------|------------------------------------------|-------|---------------|
| #1     | 221227-03.S05 | Wireless Module Installed in Notebook PC | P123F | 7546403100003 |

#### 4. EUT Features

The herein information is provided by the customer.  
 Intel WRF Lab declines any responsibility for the accuracy of the stated customer provided information, especially if it has any impact on the correctness of test results presented in this report.

|                        |                                |                              |
|------------------------|--------------------------------|------------------------------|
| Brand Name             | Intel® Wireless-AX211          |                              |
| Model Name             | AX211D2W                       |                              |
| Software Version       | DRTU-02999.22.180.0            |                              |
| Driver Version         | WLAN 22.180.0.4, BT 22.150.6.0 |                              |
| Prototype / Production | Production                     |                              |
| Host Identification    | P123F                          |                              |
| Supported Radios       | 802.11b/g/n/ax                 | 2.4GHz (2400.0 – 2483.5 MHz) |
|                        | 802.11a/n/ac/ax                | 5.2GHz (5150.0 – 5250.0 MHz) |
|                        |                                | 5.3GHz (5250.0 – 5350.0 MHz) |
|                        |                                | 5.6GHz (5470.0 – 5725.0 MHz) |
|                        |                                | 5.8GHz (5725.0 – 5850.0 MHz) |
|                        |                                | 5.9GHz (5850.0 – 5895.0 MHz) |
|                        | 802.11ax                       | 6.0GHz (5925.0 – 7125.0 MHz) |
|                        | Bluetooth                      | 2.4GHz (2400.0 – 2483.5 MHz) |

#### 5. Remarks and comments

- The test report is a validation of the FCC TAS algorithm

#### 6. Document Revision History

| Revision # | Modified by | Revision Details                                         |
|------------|-------------|----------------------------------------------------------|
| Rev.00     | Y HADDAD    | First Issue                                              |
| Rev.01     | E. Garcia   | Corrected brand name in front page upon customer request |

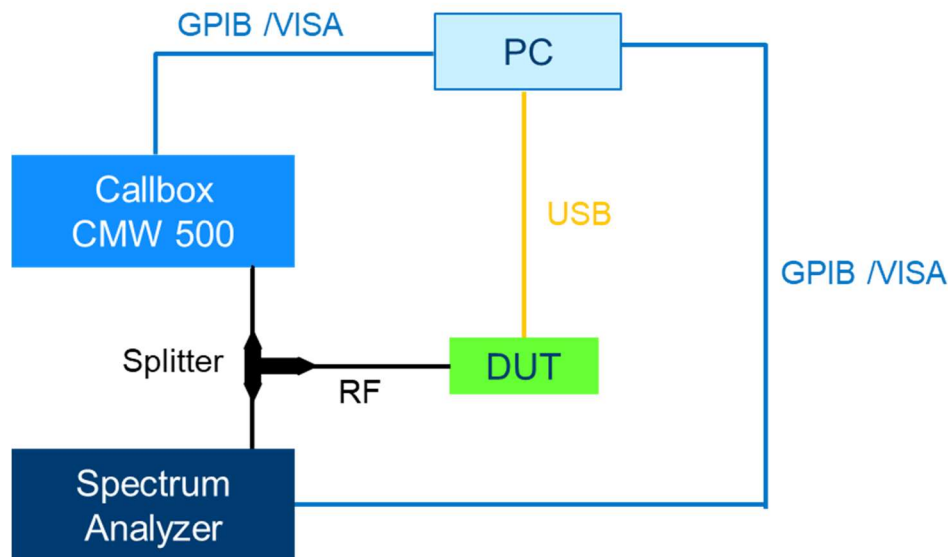
# Annex A. Test & System description

## A.1 Test Setup

The conducted power measurement test setup is described in the following and illustrated in Figure A.1.

- The DUT which AX211D2W WiFi module is installed inside Notebook PC from Intel® Wi-Fi 6E AX211 model P123F.
- A control PC is used to configure the call box as an access point to manage the uplink and downlink data traffic.
- Uplink signal power is measured with the spectrum analyzer and recorded by the PC with a maximum time resolution of 0.3333 msec.
- Uplink signal from the module is fed through a 3 dB power splitter, which delivers an equal amount of signal to the spectrum analyzer and the call box. The splitter has high isolation between the spectrum analyzer and the call box.

Figure.1 – Validation using conducted power measurement test setup.



## A.2 Test Equipment List

Equipment and accessories used for the conducted power measurement test setup are listed below. The Test Platform (DUT), test setup and associated equipment are shown in A.1.3.

| ID#     | Device               | Type/Model | Serial # | Manufacturer    | Cal. Date  | Cal. Due Date |
|---------|----------------------|------------|----------|-----------------|------------|---------------|
| 025-005 | Communication Tester | CMW500     | 161493   | Rohde & Schwarz | N/A        | N/A           |
| 271-000 | Spectrum Analyzer    | FSV40      | 103307   | Rohde & Schwarz | 2022-04-25 | 2024-04-25    |
| 455-001 | RF Cable             | -          | -        | -               | 2023-02-23 | 2024-02-23    |
| 455-002 | RF Cable             | -          | -        | -               | 2023-02-23 | 2024-02-23    |
| 455-003 | RF Splitter          | -          | -        | -               | 2023-02-23 | 2024-02-23    |

# Annex B. Test Results

## B.1 SAR Tune-Up Power as per SAR assessment

| Chain A             |                       | Chain B             |                       |
|---------------------|-----------------------|---------------------|-----------------------|
| IEEE 802.11g<br>CH6 | IEEE 802.11a<br>CH120 | IEEE 802.11g<br>CH6 | IEEE 802.11a<br>CH120 |
| 20.0                | 20.0                  | 20.0                | 20.0                  |

## B.2 TAS Validation for 2.4 GHz Band on Channel 6

Table B1 – Test Cases for 2.4 GHz Channel 6

| Test Case # | Channel | Chain | Channel Bandwidth | Measurement Averaging Period | Measurement Time Resolution | Max Tune-Up Power [dBm] | SAR Power in Bios Table [dBm] |
|-------------|---------|-------|-------------------|------------------------------|-----------------------------|-------------------------|-------------------------------|
| 1           | 6       | A     | 20 MHz            | 100 sec                      | 0.3333 msec                 | 20.0                    | 20.0                          |
| 2           | 6       | B     | 20 MHz            | 100 sec                      | 0.3333 msec                 | 20.0                    | 20.0                          |

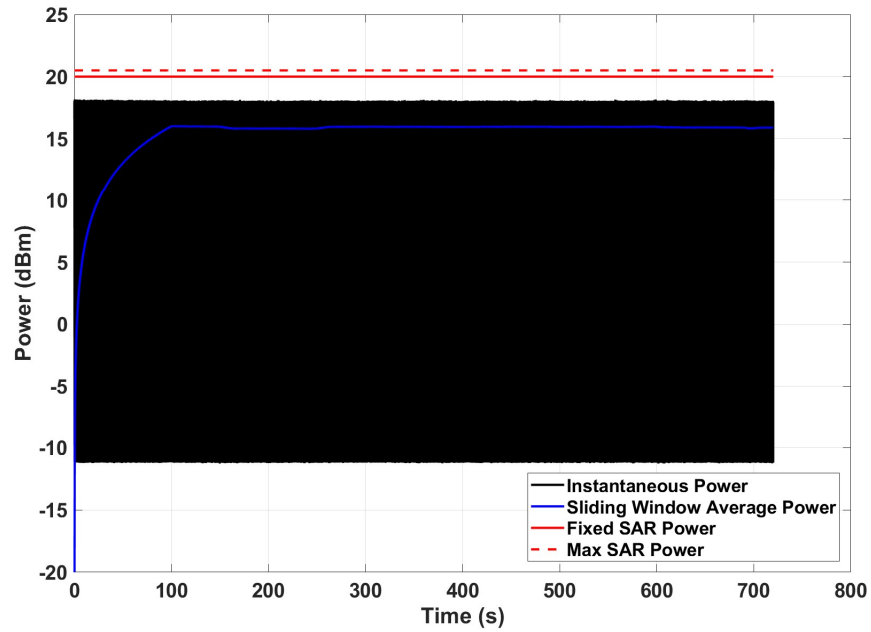
Results of test cases in Table B1 are shown in the following plots.

**Case #1: 2.4 GHz– Ch 6 – Chain A – BW 20 MHz – Rate 12 Mbps****Averaging Period 100 sec – Tmax 720 sec****Max Tune Up Power [dBm]**

20.0

**SAR Power in Bios Table [dBm]**

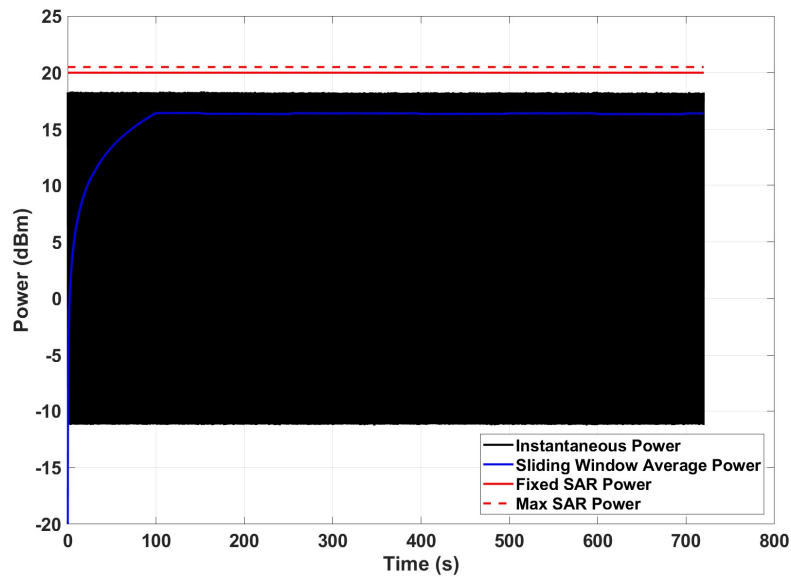
20.0

**Case #2: 2.4 GHz– Ch 6 – Chain B – BW 20 MHz – Rate 12 Mbps****Average Period 100 sec – Tmax 720 sec****Max Tune Up Power [dBm]**

20.0

**SAR Power in Bios Table [dBm]**

20.0



### B.3 TAS Validation for 5 GHz Band on Channel 120

*Table B2 – Test Cases for 5 GHz Channel 120*

| <i>Test Case #</i> | <i>Channel</i> | <i>Chain</i> | <i>Channel Bandwidth</i> | <i>Measurement Averaging Period</i> | <i>Measurement Time Resolution</i> | <i>Max Tune-Up Power [dBm]</i> | <i>SAR Power in Bios Table [dBm]</i> |
|--------------------|----------------|--------------|--------------------------|-------------------------------------|------------------------------------|--------------------------------|--------------------------------------|
| 1                  | 120            | A            | 20 MHz                   | 60 sec                              | 0.3333 msec                        | 20                             | 20.0                                 |
| 2                  | 120            | B            | 20 MHz                   | 60 sec                              | 0.3333 msec                        | 20                             | 20.0                                 |

Results of test cases in Table B2 are shown in the following plots.



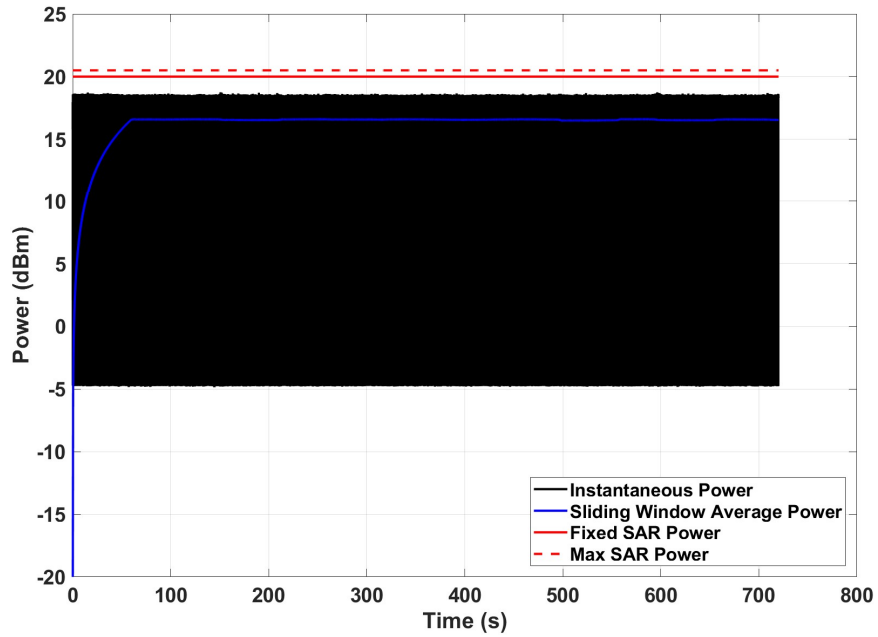
Case #1: 5 GHz– Ch 120 – Chain A– BW 20 MHz – Rate 12 Mbps  
Averaging Period 60 sec – Tmax 720 sec

**Max Tune-Up Power [dBm]**

20.0

**SAR Power in Bios Table [dBm]**

20.0



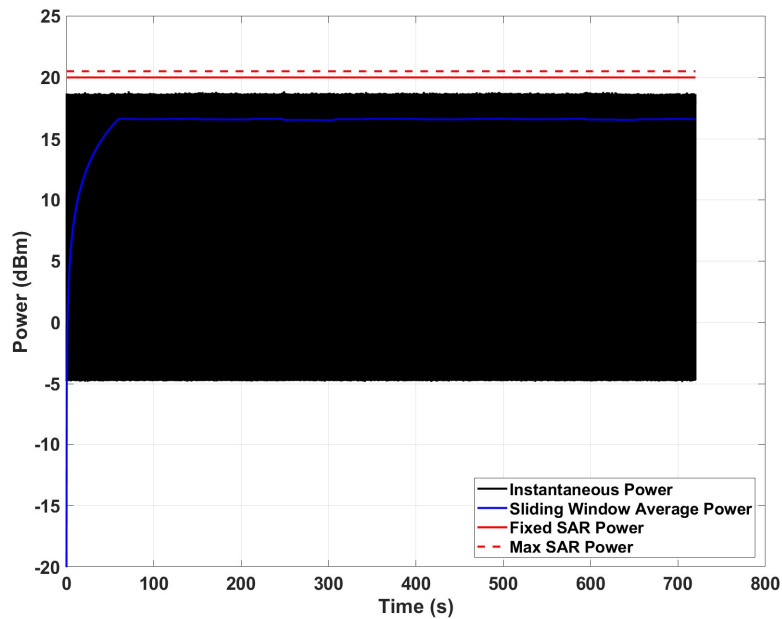
Case #2: 5 GHz– Ch 120 – Chain B – BW 20 MHz – Rate 12 Mbps  
Average Period 60 sec – Tmax 720 sec

**Max Tune-Up Power [dBm]**

20.0

**SAR Power in Bios Table [dBm]**

20.0



### **End of the report**

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