TEST REPORT

EUT Description	**Convertible PC**
Brand Name	**Lenovo**
Model Name	**IdeaPad 5 2-in-1 14IRU9**
FCC ID	**PD9AX211NG**
ISED ID	**1000M-AX211NG**
Date of Test Start/End	**2023-12-12 / 2023-12-12**
Features	**IEEE 802.11a/b/g/n/ac/ax**

Applicant	**Intel Corporation SAS**
Address	**425 Rue de Goa – Le Cargo B6 – 06600 Antibes, FRANCE**
Contact Person	**Benjamin Lavenant**
Telephone/Fax/ Email	**Benjamin.lavenant@intel.com**

Test Report identification	**231120-02.TR01**
Revision Control	**Rev. 00** **This test report replaces any previous versions of this test report** (see Section 7)

The test results relate only to the samples tested.

Reviewed by

Digitally signed by Chei el IN
Date: 2023.12.13 14:12:52 +01'00'

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1. Standards, reference documents and applicable test methods

a. KDB 388624 D02 Pre-Approval Guidance List v18, PRE-APPROVAL GUIDANCE LIST

b. FCC Presentations TCB Workshop November 2019, RF exposure procedures.

2. 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.

3. Environmental Conditions

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

Temperature	21.7ºC ± 1ºC
Humidity	48.9% ± 5%

4. Test Sample

Sample	ID #	Description	Model	Serial #	Note
#1	231120-02.S09	Convertible PC	IdeaPad 5 2-in-1 14IRU9	YX07Y66F	-

5. 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	Lenovo
Model Name	IdeaPad 5 2-in-1 14IRU9
Prototype / Production	Production
Host Identification	Convertible PC

6. Remarks and comments

1. The test report is validation of the G sensor functionality

7. Test Results summary

7.1. WLAN Tx Power Table Summary

Device Mode	Lid Angle range	2.4GHz-CH6-802.11b-1Mbps				5GHz-CH120-802.11a-6Mbps			
		Target Power (dBm)		Measured Power (dBm)		Target Power (dBm)		Measured Power (dBm)	
		Antenna AUX(1)	Antenna MAIN(2)	Antenna AUX(1)	Antenna MAIN(2)	Antenna AUX(1)	Antenna MAIN(2)	Antenna AUX(1)	Antenna MAIN(2)
Lid close	**0°**	16.0	16.0	16.0	15.4	15.0	15.5	14.9	15.5
Notebook	**0° < - < 350°**	16.0	16.0	16.0	15.4	15.0	15.5	14.9	15.5
Tablet	**350° ≤ - ≤ 360°**	11.0	11.0	11.0	10.9	10.0	10.0	10.0	9.5

8. Document Revision History

Revision #	Modified by	Revision Details
Rev.00	Cheiel I	First Issue

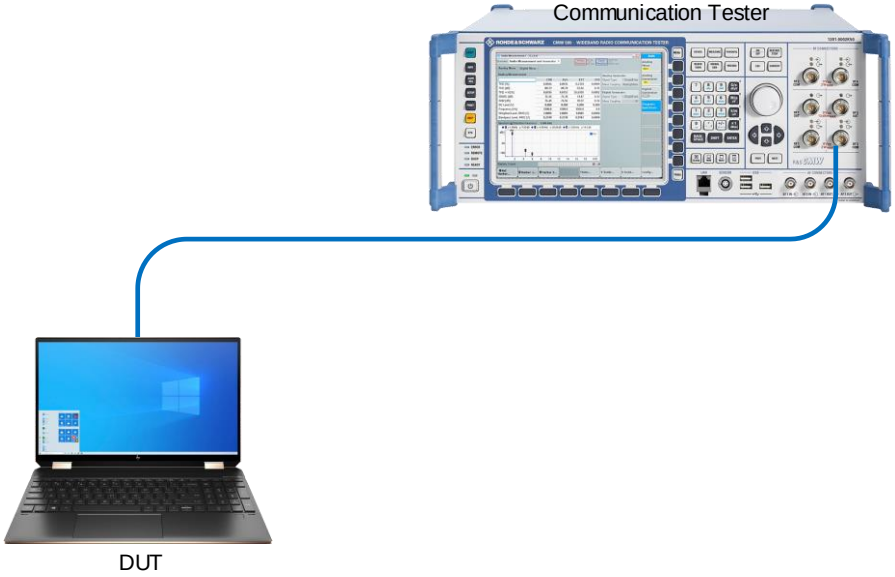
Annex A. Test & System description

A.1 Test setup

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

- The DUT is convertible PC from *Lenovo* model *IdeaPad 5 2-in-1 14IRU9.* An *AX211NGW* connectivity module is installed inside
- 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 Call Box.
- Path loss in the power measurement setup from the wireless module antenna port to the Call Box.

Figure.1 – Power measurement test setup.



A.2 Procedure

The following additional guidance applies only to convertible laptops whose screen rotates around one axis, from 0 degrees to 360 degrees, in a clamshell style, i.e., from closed mode to open mode, to “tent” mode, and finally, to tablet mode. This process must be followed to determine the lid angle where a power reduction occurs, by taking power measurements at each step, as indicated in the step listed here below:

1. From the lid in closed mode (0 degrees), open the screen in 10-degree steps until laptop mode is obtained
2. Lower the screen by 5 degrees increments to verify that the “closed mode” is triggered
3. From the position of the previous step, open the screen in 1-degree increments until laptop mode is triggered again
4. Continue opening the screen in 1-degree increments until at least 5 degrees past where “laptop mode” was obtained, then continue opening the screen in 10-degree steps until the device switches to tablet mode
5. Reverse the previous procedure to go from tablet mode back down to closed mode

A.3 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
125-000	Communication Tester	CMW500	129337	Rohde & Schwartz	2023-04-20	2025-04-20
022-003 022-004	RF path (RF cable + Adapters)	-	-	-	RF path loss was verified before usage	

A.4 Measurement Uncertainty Evaluation

The system uncertainty evaluation is shown in the table below with a coverage factor of k = 2 to indicate a 95% level of confidence:

Measurement type	Uncertainty	Unit
Power level	±1	dB

Annex B. Test Results

B.1 Trigger lid angle detection and power verification 2.4GHz

B.1.1 The lid is rotating from 0° to 360°

Mode	Angle (degrees)	Measured Power 2.4GHz-Ch6 (dBm)	
		AUX(1)	MAIN(2)
Lid close	0	16.0	15.4
Notebook	10	16.0	15.4
	20	16.0	15.4
	30	16.0	15.4
	40	16.0	15.4
	50	16.0	15.4
	60	16.0	15.4
	70	16.0	15.4
	80	16.0	15.4
	90	16.0	15.4
	100	16.0	15.4
	110	16.0	15.4
	120	16.0	15.4
	130	16.0	15.4
	140	16.0	15.4
	150	16.0	15.4
	160	16.0	15.4
	170	16.0	15.4
	180	16.0	15.4
	190	16.0	15.4
	200	16.0	15.4
	210	16.0	15.4
	220	16.0	15.4
	230	16.0	15.4

Mode	Angle (degrees)	Power measured 2.4GHz-Ch6 (dBm)	
		AUX(1)	MAIN(2)
Notebook	230	16.0	15.4
	240	16.0	15.4
	250	16.0	15.4
	260	16.0	15.4
	270	16.0	15.4
	280	16.0	15.4
	290	16.0	15.4
	300	16.0	15.4
	310	16.0	15.4
	320	16.0	15.4
	330	16.0	15.4
	340	16.0	15.4
Tablet	350	11.0	10.9
Notebook	345	16.0	15.4
	346	16.0	15.4
	347	16.0	15.4
	348	16.0	15.4
	349	16.0	15.4
Tablet	350	11.0	10.9
	351	11.0	10.9
	352	11.0	10.9
	353	11.0	10.9
	354	11.0	10.9
	355	11.0	10.9
	360	11.0	10.9

B.1.2 The lid is rotating from 360° to 0°

Mode	Angle (degrees)	Power measured 2.4GHz-Ch6 (dBm)	
		AUX(1)	MAIN(2)
Tablet	360	11.0	10.9
	350	11.0	10.9
Notebook	340	16.0	15.4
	345	16.0	15.4
Tablet	350	11.0	10.9
Notebook	349	16.0	15.4
	348	16.0	15.4
	347	16.0	15.4
	346	16.0	15.4
	345	16.0	15.4
	340	16.0	15.4
	330	16.0	15.4
	320	16.0	15.4
	310	16.0	15.4
	300	16.0	15.4
	290	16.0	15.4
	280	16.0	15.4
	270	16.0	15.4
	260	16.0	15.4
	250	16.0	15.4
	240	16.0	15.4
	230	16.0	15.4

Mode	Angle (degrees)	Power measured 2.4GHz-Ch6 (dBm)	
		AUX(1)	MAIN(2)
Notebook	220	16.0	15.4
	210	16.0	15.4
	200	16.0	15.4
	190	16.0	15.4
	180	16.0	15.4
	170	16.0	15.4
	160	16.0	15.4
	150	16.0	15.4
	140	16.0	15.4
	130	16.0	15.4
	120	16.0	15.4
	110	16.0	15.4
	100	16.0	15.4
	90	16.0	15.4
	80	16.0	15.4
	70	16.0	15.4
	60	16.0	15.4
	50	16.0	15.4
	40	16.0	15.4
	30	16.0	15.4
	20	16.0	15.4
	10	16.0	15.4
Lid close	0	16.0	15.4

B.2 Trigger lid angle detection and power verification 5GHz

B.2.1 The lid is rotating from 0° to 360°

Mode	Angle (degrees)	Measured Power 5GHz-Ch120 (dBm)	
		AUX(1)	MAIN(2)
Lid close	0	14.9	15.5
Notebook	10	14.9	15.5
	20	14.9	15.5
	30	14.9	15.5
	40	14.9	15.5
	50	14.9	15.5
	60	14.9	15.5
	70	14.9	15.5
	80	14.9	15.5
	90	14.9	15.5
	100	14.9	15.5
	110	14.9	15.5
	120	14.9	15.5
	130	14.9	15.5
	140	14.9	15.5
	150	14.9	15.5
	160	14.9	15.5
	170	14.9	15.5
	180	14.9	15.5
	190	14.9	15.5
	200	14.9	15.5
	210	14.9	15.5
	220	14.9	15.5
	230	14.9	15.5

Mode	Angle (degrees)	Power measured 5GHz-Ch120 (dBm)	
		AUX(1)	MAIN(2)
Notebook	230	14.9	15.5
	240	14.9	15.5
	250	14.9	15.5
	260	14.9	15.5
	270	14.9	15.5
	280	14.9	15.5
	290	14.9	15.5
	300	14.9	15.5
	310	14.9	15.5
	320	14.9	15.5
	330	14.9	15.5
	340	14.9	15.5
Tablet	350	10.0	9.5
Notebook	345	14.9	15.5
	346	14.9	15.5
	347	14.9	15.5
	348	14.9	15.5
	349	14.9	15.5
Tablet	350	10.0	9.5
	351	10.0	9.5
	352	10.0	9.5
	353	10.0	9.5
	354	10.0	9.5
	355	10.0	9.5
	360	10.0	9.5

B.2.2 The lid is rotating from 360° to 0°

Mode	Angle (degrees)	Measured Power 5GHz-Ch120 (dBm)	
		AUX(1)	MAIN(2)
Tablet	360	10.0	9.5
	350	10.0	9.5
Notebook	340	14.9	15.5
	345	14.9	15.5
Tablet	350	10.0	9.5
Notebook	349	14.9	15.5
	348	14.9	15.5
	347	14.9	15.5
	346	14.9	15.5
	345	14.9	15.5
	340	14.9	15.5
	330	14.9	15.5
	320	14.9	15.5
	310	14.9	15.5
	300	14.9	15.5
	290	14.9	15.5
	280	14.9	15.5
	270	14.9	15.5
	260	14.9	15.5
	250	14.9	15.5
	240	14.9	15.5
	230	14.9	15.5

Mode	Angle (degrees)	Measured Power 5GHz-Ch120 (dBm)	
		AUX(1)	MAIN(2)
Notebook	220	14.9	15.5
	210	14.9	15.5
	200	14.9	15.5
	190	14.9	15.5
	180	14.9	15.5
	170	14.9	15.5
	160	14.9	15.5
	150	14.9	15.5
	140	14.9	15.5
	130	14.9	15.5
	120	14.9	15.5
	110	14.9	15.5
	100	14.9	15.5
	90	14.9	15.5
	80	14.9	15.5
	70	14.9	15.5
	60	14.9	15.5
	50	14.9	15.5
	40	14.9	15.5
	30	14.9	15.5
	20	14.9	15.5
	10	14.9	15.5
Lid close	0	14.9	15.5