



TEST REPORT

EUT Description	Convertible PC
Brand Name	Lenovo
Model Name	IdeaPad 5 2-in-1 16IRU9
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	231120-04.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 _____

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

Table of Contents

1. Standards, reference documents and applicable test methods	3
2. General conditions, competences and guarantees	3
3. Environmental Conditions	3
4. Test Sample	3
5. EUT Features	4
6. Remarks and comments	4
7. Test Results summary.....	4
7.1. WLAN TX POWER TABLE SUMMARY	4
8. Document Revision History	5
Annex A. Test & System description	6
A.1 TEST SETUP	6
A.2 PROCEDURE	6
A.3 TEST EQUIPMENT LIST.....	7
A.4 MEASUREMENT UNCERTAINTY EVALUATION.....	7
Annex B. Test Results	8
B.1 TRIGGER LID ANGLE DETECTION AND POWER VERIFICATION 2.4GHZ	8
B.1.1 THE LID IS ROTATING FROM 0° TO 360°	8
B.1.2 THE LID IS ROTATING FROM 360° TO 0°	9
B.2 TRIGGER LID ANGLE DETECTION AND POWER VERIFICATION 5GHZ	10
B.2.1 THE LID IS ROTATING FROM 0° TO 360°	10
B.2.2 THE LID IS ROTATING FROM 360° TO 0°	11

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	21.7°C ± 1°C
Humidity	48.9% ± 5%

4. Test Sample

Sample	ID #	Description	Model	Serial #	Note
#1	231120-04.S05	Convertible PC	IdeaPad 5 2-in-1 16IRU9	YX07YMCQ	-

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 16IRU9
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	15.9	16.0	15.0	15.5	15.0	15.1
Notebook	0° < - < 350°	16.0	16.0	15.9	16.0	15.0	15.5	15.0	15.1
Tablet	350° ≤ - ≤ 360°	11.0	11.0	10.8	11.0	10.0	10.0	10.0	9.6

8. Document Revision History

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

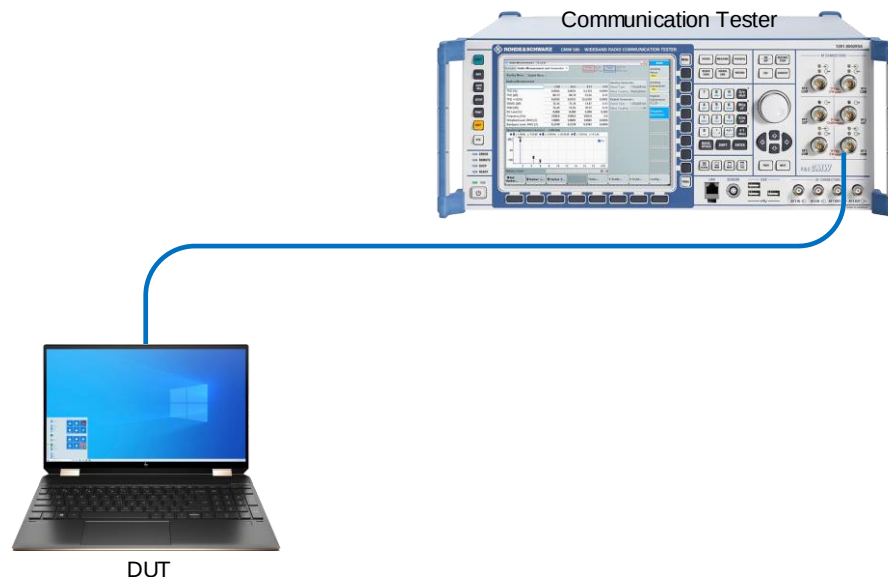
Annex A. Test & System description

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 16IRU9*. 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	15.9	16.0
Notebook	10	15.9	16.0
	20	15.9	16.0
	30	15.9	16.0
	40	15.9	16.0
	50	15.9	16.0
	60	15.9	16.0
	70	15.9	16.0
	80	15.9	16.0
	90	15.9	16.0
	100	15.9	16.0
	110	15.9	16.0
	120	15.9	16.0
	130	15.9	16.0
	140	15.9	16.0
	150	15.9	16.0
	160	15.9	16.0
	170	15.9	16.0
	180	15.9	16.0
	190	15.9	16.0
	200	15.9	16.0
	210	15.9	16.0
	220	15.9	16.0
	230	15.9	16.0

Mode	Angle (degrees)	Power measured 2.4GHz-Ch6 (dBm)	
		AUX(1)	MAIN(2)
Notebook	230	15.9	16.0
	240	15.9	16.0
	250	15.9	16.0
	260	15.9	16.0
	270	15.9	16.0
	280	15.9	16.0
	290	15.9	16.0
	300	15.9	16.0
	310	15.9	16.0
	320	15.9	16.0
	330	15.9	16.0
	340	15.9	16.0
Tablet	350	10.8	11.0
Notebook	345	15.9	16.0
	346	15.9	16.0
	347	15.9	16.0
	348	15.9	16.0
	349	15.9	16.0
Tablet	350	10.8	11.0
	351	10.8	11.0
	352	10.8	11.0
	353	10.8	11.0
	354	10.8	11.0
	355	10.8	11.0
	360	10.8	11.0

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	10.8	11.0
	350	10.8	11.0
Notebook	340	15.9	16.0
	345	15.9	16.0
Tablet	350	10.8	11.0
Notebook	349	15.9	16.0
	348	15.9	16.0
	347	15.9	16.0
	346	15.9	16.0
	345	15.9	16.0
	340	15.9	16.0
	330	15.9	16.0
	320	15.9	16.0
	310	15.9	16.0
	300	15.9	16.0
	290	15.9	16.0
	280	15.9	16.0
	270	15.9	16.0
	260	15.9	16.0
	250	15.9	16.0
	240	15.9	16.0
	230	15.9	16.0

Mode	Angle (degrees)	Power measured 2.4GHz-Ch6 (dBm)	
		AUX(1)	MAIN(2)
Notebook	220	15.9	16.0
	210	15.9	16.0
	200	15.9	16.0
	190	15.9	16.0
	180	15.9	16.0
	170	15.9	16.0
	160	15.9	16.0
	150	15.9	16.0
	140	15.9	16.0
	130	15.9	16.0
	120	15.9	16.0
	110	15.9	16.0
	100	15.9	16.0
	90	15.9	16.0
	80	15.9	16.0
	70	15.9	16.0
	60	15.9	16.0
	50	15.9	16.0
	40	15.9	16.0
	30	15.9	16.0
	20	15.9	16.0
	10	15.9	16.0
Lid close	0	15.9	16.0

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	15.0	15.1
Notebook	10	15.0	15.1
	20	15.0	15.1
	30	15.0	15.1
	40	15.0	15.1
	50	15.0	15.1
	60	15.0	15.1
	70	15.0	15.1
	80	15.0	15.1
	90	15.0	15.1
	100	15.0	15.1
	110	15.0	15.1
	120	15.0	15.1
	130	15.0	15.1
	140	15.0	15.1
	150	15.0	15.1
	160	15.0	15.1
	170	15.0	15.1
	180	15.0	15.1
	190	15.0	15.1
	200	15.0	15.1
	210	15.0	15.1
	220	15.0	15.1
	230	15.0	15.1

Mode	Angle (degrees)	Power measured 5GHz-Ch120 (dBm)	
		AUX(1)	MAIN(2)
Notebook	230	15.0	15.1
	240	15.0	15.1
	250	15.0	15.1
	260	15.0	15.1
	270	15.0	15.1
	280	15.0	15.1
	290	15.0	15.1
	300	15.0	15.1
	310	15.0	15.1
	320	15.0	15.1
Tablet	330	15.0	15.1
	340	15.0	15.1
Notebook	350	10.0	9.6
	345	15.0	15.1
	346	15.0	15.1
	347	15.0	15.1
	348	15.0	15.1
Tablet	349	15.0	15.1
	350	10.0	9.6
	351	10.0	9.6
	352	10.0	9.6
	353	10.0	9.6
	354	10.0	9.6
	355	10.0	9.6
	360	10.0	9.6

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	9.6
	350	10.0	9.6
Notebook	340	15.0	15.1
	345	15.0	15.1
Tablet	350	10.0	9.6
Notebook	349	15.0	15.1
	348	15.0	15.1
	347	15.0	15.1
	346	15.0	15.1
	345	15.0	15.1
	340	15.0	15.1
	330	15.0	15.1
	320	15.0	15.1
	310	15.0	15.1
	300	15.0	15.1
	290	15.0	15.1
	280	15.0	15.1
	270	15.0	15.1
	260	15.0	15.1
	250	15.0	15.1
	240	15.0	15.1
	230	15.0	15.1

Mode	Angle (degrees)	Measured Power 5GHz-Ch120 (dBm)	
		AUX(1)	MAIN(2)
Notebook	220	15.0	15.1
	210	15.0	15.1
	200	15.0	15.1
	190	15.0	15.1
	180	15.0	15.1
	170	15.0	15.1
	160	15.0	15.1
	150	15.0	15.1
	140	15.0	15.1
	130	15.0	15.1
	120	15.0	15.1
	110	15.0	15.1
	100	15.0	15.1
	90	15.0	15.1
	80	15.0	15.1
	70	15.0	15.1
	60	15.0	15.1
	50	15.0	15.1
	40	15.0	15.1
	30	15.0	15.1
	20	15.0	15.1
	10	15.0	15.1
Lid close	0	15.0	15.1