

TEST REPORT

EUT Description	Convertible PC
Brand Name	Dell
Model Name	P166G
FCC ID	PD9AX211DW
ISED ID	1000M-AX211DW
Date of Test Start/End	2023-02-03 / 2023-02-03
Features	IEEE 802.11a/b/g/n/ac/ax

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Test Report identification	221110-07.TR01
Revision Control	Rev. 00 This test report replaces any previous versions of this test report (see Section 8)

The test results relate only to the samples tested.

Reviewed by _____

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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	21.8°C ± 1°C
Humidity	31.8% ± 4%

4. Test Sample

Sample	ID #	Description	Model	Serial #	Note
#1	221110-07.S04	Convertible PC	P166G	7519296000002	-

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	Dell
Model Name	P166G
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				5GHz-CH40			
		Target Power (dBm)		Measured Power (dBm)		Target Power (dBm)		Measured Power (dBm)	
		Antenna AUX	Antenna MAIN	Antenna AUX	Antenna MAIN	Antenna AUX	Antenna MAIN	Antenna AUX	Antenna MAIN
Lid Close	0°(Movement)	18.0	18.0	17.6	17.6	11.0	11.0	10.8	10.6
Lid Close	0°(Stay)	18.0	18.0	17.8	17.7	18.0	18.0	17.9	18.0
Notebook	0° - 190°	16.5	16.5	16.3	16.4	12.5	12.5	12.5	12.4
Tent/Stand	191° - 359°	18.0	18.0	17.5	17.8	11.0	11.0	10.6	10.5
Tablet	360°	18.0	18.0	17.6	17.4	11.0	11.0	10.9	10.6

8. Document Revision History

Revision #	Date	Modified by	Revision Details
Rev.00	2023-02-03	Cheiel I	First Issue

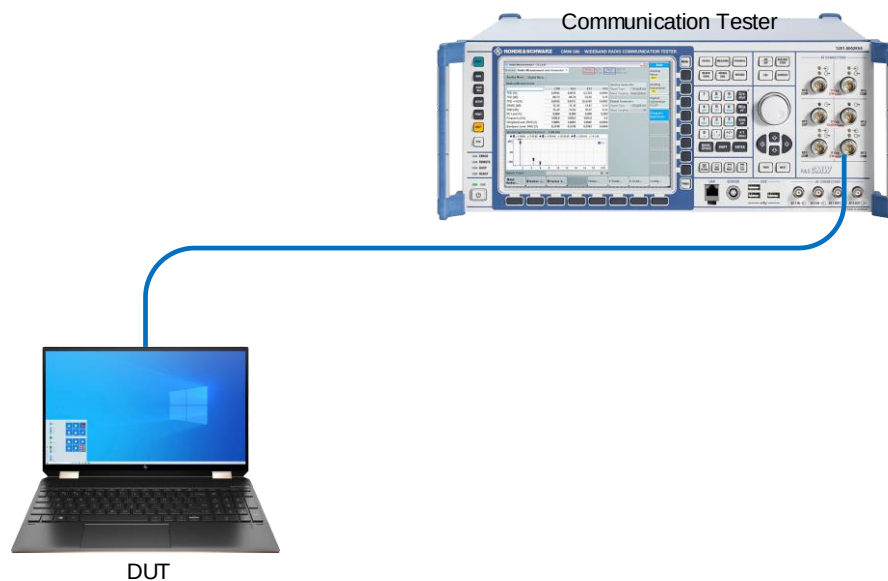
Annex A. Test & System description

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 Dell P166G. An AX211D2W 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

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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

ID#	Device	Type/Model	Serial #	Manufacturer	Cal. Date	Cal. Due Date
125-000	Communication Tester	CMW500	129337	Rohde & Schwartz	2021-04-12	2023-04-12
022-003 022-004	RF path (RF cable + Adapters)	-	-	-	RF path loss was verified before usage	

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)	Power measured 2.4GHz-Ch6 (dBm)	
		AUX	MAIN
Lid close (movement)	0	17.6	17.6
Lid close (stay)	0	17.8	17.7
Notebook	10	16.3	16.4
Notebook	5	16.3	16.4
Lid close (movement)	0	17.6	17.6
Lid close (stay)	0	17.8	17.7
Notebook	1	16.3	16.4
	2	16.3	16.4
	3	16.3	16.4
	4	16.3	16.4
	5	16.3	16.4
	10	16.3	16.4
	20	16.3	16.4
	30	16.3	16.4
	40	16.3	16.4
	50	16.3	16.4
	60	16.3	16.4
	70	16.3	16.4
	80	16.3	16.4
	90	16.3	16.4
	100	16.3	16.4
	110	16.3	16.4
	120	16.3	16.4
	130	16.3	16.4
	140	16.3	16.4
	150	16.3	16.4
	160	16.3	16.4
	170	16.3	16.4
	180	16.3	16.4
Tent/Stand	190	17.5	17.8

Mode	Angle (degrees)	Power measured 2.4GHz-Ch6 (dBm)	
		AUX	MAIN
Tent/Stand	190	17.5	17.8
Notebook	185	16.3	16.4
	186	16.3	16.4
	187	16.3	16.4
	188	16.3	16.4
	189	16.3	16.4
Tent/Stand	190	17.5	17.8
	191	17.5	17.8
	192	17.5	17.8
	193	17.5	17.8
	194	17.5	17.8
	195	17.5	17.8
	200	17.5	17.8
	210	17.5	17.8
	220	17.5	17.8
	230	17.5	17.8
	240	17.5	17.8
	260	17.5	17.8
	270	17.5	17.8
	280	17.5	17.8
	290	17.5	17.8
	300	17.5	17.8
	310	17.5	17.8
	320	17.5	17.8
	330	17.5	17.8
	340	17.5	17.8
	350	17.5	17.8
Tablet	360	17.6	17.4
Tent/Stand	355	17.5	17.8
	356	17.5	17.8
	357	17.5	17.8
	358	17.5	17.8
	359	17.5	17.8
Tablet	360	17.6	17.4

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

Mode	Angle (degrees)	Power measured 2.4GHz-Ch6 (dBm)	
		AUX	MAIN
Tablet	360	17.6	17.4
Tent/Stand	350	17.5	17.8
Tent/Stand	355	17.5	17.8
Tablet	360	17.6	17.4
Tent/Stand	359	17.5	17.8
	358	17.5	17.8
	357	17.5	17.8
	356	17.5	17.8
	355	17.5	17.8
	354	17.5	17.8
	353	17.5	17.8
	352	17.5	17.8
	351	17.5	17.8
	350	17.5	17.8
	340	17.5	17.8
	330	17.5	17.8
	320	17.5	17.8
	310	17.5	17.8
	300	17.5	17.8
	290	17.5	17.8
	280	17.5	17.8
	270	17.5	17.8
	260	17.5	17.8
	240	17.5	17.8
	230	17.5	17.8
	220	17.5	17.8
	210	17.5	17.8
	200	17.5	17.8
	190	17.5	17.8
	180	16.3	16.4
	185	16.3	16.4
Tent/Stand	190	17.5	17.8
Notebook	189	16.3	16.4
	188	16.3	16.4
	187	16.3	16.4
	186	16.3	16.4
	185	16.3	16.4
	184	16.3	16.4
	183	16.3	16.4
	182	16.3	16.4
	181	16.3	16.4
	180	16.3	16.4

Mode	Angle (degrees)	Power measured 2.4GHz-Ch6 (dBm)	
		AUX	MAIN
Notebook	180	16.3	16.4
	170	16.3	16.4
	160	16.3	16.4
	150	16.3	16.4
	140	16.3	16.4
	130	16.3	16.4
	120	16.3	16.4
	110	16.3	16.4
	100	16.3	16.4
	90	16.3	16.4
	80	16.3	16.4
	70	16.3	16.4
	60	16.3	16.4
	50	16.3	16.4
	40	16.3	16.4
	30	16.3	16.4
	20	16.3	16.4
	10	16.3	16.4
Lid close (movement)	0	17.6	17.6
Notebook	5	16.3	16.4
	4	16.3	16.4
	3	16.3	16.4
	2	16.3	16.4
	1	16.3	16.4
Lid close (movement)	0	17.6	17.6
Lid close (stay)	0	17.8	17.7

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

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

Mode	Angle (degrees)	Power measured 5GHz-Ch40 (dBm)	
		AUX	MAIN
Lid close (movement)	0	10.8	10.6
Lid close (stay)	0	17.9	18.0
Notebook	10	12.5	12.4
Notebook	5	12.5	12.4
Lid close (movement)	0	10.8	10.6
Lid close (stay)	0	17.9	18.0
Notebook	1	12.5	12.4
	2	12.5	12.4
	3	12.5	12.4
	4	12.5	12.4
	5	12.5	12.4
	10	12.5	12.4
	20	12.5	12.4
	30	12.5	12.4
	40	12.5	12.4
	50	12.5	12.4
	60	12.5	12.4
	70	12.5	12.4
	80	12.5	12.4
	90	12.5	12.4
	100	12.5	12.4
	110	12.5	12.4
	120	12.5	12.4
	130	12.5	12.4
	140	12.5	12.4
	150	12.5	12.4
	160	12.5	12.4
	170	12.5	12.4
	180	12.5	12.4
Tent/Stand	190	10.6	10.5

Mode	Angle (degrees)	Power measured 5GHz-Ch40 (dBm)	
		AUX	MAIN
Tent/Stand	190	10.6	10.5
Notebook	185	12.5	12.4
	186	12.5	12.4
	187	12.5	12.4
	188	12.5	12.4
	189	12.5	12.4
	190	10.6	10.5
Tent/Stand	191	10.6	10.5
	192	10.6	10.5
	193	10.6	10.5
	194	10.6	10.5
	195	10.6	10.5
	200	10.6	10.5
	210	10.6	10.5
	220	10.6	10.5
	230	10.6	10.5
	240	10.6	10.5
	260	10.6	10.5
	270	10.6	10.5
	280	10.6	10.5
	290	10.6	10.5
	300	10.6	10.5
	310	10.6	10.5
	320	10.6	10.5
	330	10.6	10.5
	340	10.6	10.5
	350	10.6	10.5
Tablet	360	10.9	10.6
Tent/Stand	355	10.6	10.5
	356	10.6	10.5
	357	10.6	10.5
	358	10.6	10.5
	359	10.6	10.5
Tablet	360	10.9	10.6

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

Mode	Angle (degrees)	Power measured 5GHz-Ch40 (dBm)	
		AUX	MAIN
Tablet	360	10.9	10.6
Tent/Stand	350	10.6	10.5
Tent/Stand	355	10.6	10.5
Tablet	360	10.9	10.6
Tent/Stand	359	10.6	10.5
	358	10.6	10.5
	357	10.6	10.5
	356	10.6	10.5
	355	10.6	10.5
	354	10.6	10.5
	353	10.6	10.5
	352	10.6	10.5
	351	10.6	10.5
	350	10.6	10.5
	340	10.6	10.5
	330	10.6	10.5
	320	10.6	10.5
	310	10.6	10.5
	300	10.6	10.5
	290	10.6	10.5
	280	10.6	10.5
	270	10.6	10.5
	260	10.6	10.5
	240	10.6	10.5
	230	10.6	10.5
	220	10.6	10.5
	210	10.6	10.5
	200	10.6	10.5
	190	10.6	10.5
	180	12.5	12.4
	185	12.5	12.4
Tent/Stand	190	10.6	10.5
Notebook	189	12.5	12.4
	188	12.5	12.4
	187	12.5	12.4
	186	12.5	12.4
	185	12.5	12.4
	184	12.5	12.4
	183	12.5	12.4
	182	12.5	12.4
	181	12.5	12.4
	180	12.5	12.4

Mode	Angle (degrees)	Power measured 5GHz-Ch40 (dBm)	
		AUX	MAIN
Notebook	180	12.5	12.4
	170	12.5	12.4
	160	12.5	12.4
	150	12.5	12.4
	140	12.5	12.4
	130	12.5	12.4
	120	12.5	12.4
	110	12.5	12.4
	100	12.5	12.4
	90	12.5	12.4
	80	12.5	12.4
	70	12.5	12.4
	60	12.5	12.4
	50	12.5	12.4
	40	12.5	12.4
	30	12.5	12.4
	20	12.5	12.4
	10	12.5	12.4
Lid close (movement)	0	10.8	10.6
Notebook	5	12.5	12.4
	4	12.5	12.4
	3	12.5	12.4
	2	12.5	12.4
	1	12.5	12.4
Lid close (movement)	0	10.8	10.6
Lid close (stay)	0	17.9	18.0