TEST REPORT

EUT Description	**Convertible PC**
Brand Name	**HP**
Model Name	**HSN-I61C**
FCC ID	**B94HNI61CKLU**
ISED ID	**21374-FM350GL16**
Date of Test Start/End	**2024-02-06 / 2024-02-06**
Features	**WWAN 2G, 3G, 4G** **IEEE 802.11a/b/g/n/ac/ax**

Applicant	**HP Inc.**
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Test Report identification	**231128-03.TR01**
Revision Control	**Rev. 01** **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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Date: 2024.03.01 10:54:39 +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	21.8ºC ± 1ºC
Humidity	42.1% ± 2%

4. Test Sample

Sample	ID #	Description	Model	Serial #	Note
#1	231128-03.S07	Convertible PC	HSN-I61C	0003770D35	-

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	HP
Model Name	HSN-I61C
Prototype / Production	Pre-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. WWAN Tx Power Table Summary

Device Mode	Lid Angle range	LCD Direction	LTE Band 7 – 20MHz – QPSK 1RB-1	
			Target Power (dBm)	Measured Power (dBm)
			Antenna ANT5 (Main)	
Lid Close	0°≤ - <30°	-	Standby	Standby
Notebook	30°≤ - <130°	0°	25.0	23.7
Tent	200°≤ - <340°	180°	12.0	10.9
Stand	200°≤ - <340°	0°	25.0	23.7
Tablet	130°≤ - <200° 200°≤ - <340° 340°≤ - <360°	0° 90°or 270°	12.0	10.9
Book	30°≤ - <200°	90°; 270°	12.0	10.9

8. Document Revision History

Revision #	Modified by	Revision Details
Rev.00	Cheiel In	Initial release
Rev.01	Cheiel In	Typo correction on FCC ID upon customer request

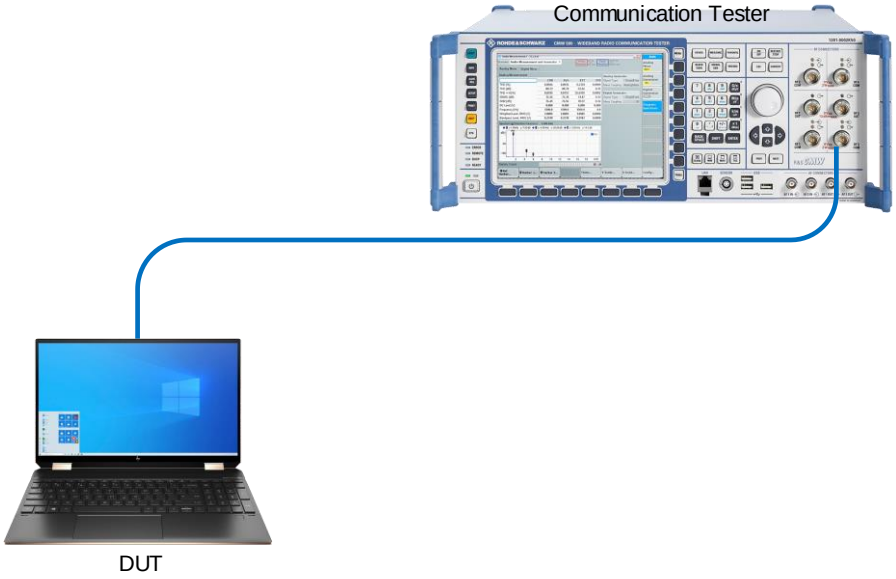
Annex A. Test & System description

A.1 Test setup

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

- The DUT is convertible PC from *HP* model *HSN-I61C.* An *FM350GL-16* cellular 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.

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 LTE B7

B.1.1 LCD direction 0°

The lid is rotating from 0 to 360. The screen is vertical, LCD direction is 0 degree.

Mode	Angle (degree)	Measured Power LTE Band 7 – 20MHz – QPSK 1RB-1 ANT5 (Main)
Lid close	0	Standby
	10	Standby
	20	Standby
Notebook	30	23.7
Lid close	25	Standby
	26	Standby
	27	Standby
	28	Standby
	29	Standby
Notebook	30	23.7
	31	23.7
	32	23.7
	33	23.7
	34	23.7
	35	23.7
	40	23.7
	50	23.7
	60	23.7
	70	23.7
	80	23.7
	90	23.7
	100	23.7
	110	23.7
	120	23.7
	130	23.7
Tablet	140	10.9
Notebook	135	23.7
Tablet	136	10.9
	137	10.9
	138	10.9
	139	10.9
	140	10.9
	150	10.9
	160	10.9
	170	10.9
	180	10.9
	190	10.9
	200	10.9
Stand	210	23.7
Tablet	205	10.9
Stand	206	23.7
	207	23.7
	208	23.7
	209	23.7
	210	23.6
	220	23.6
	230	23.6

Mode	Angle (degree)	Measured Power LTE Band 7 – 20MHz – QPSK 1RB-1 ANT5 (Main)
Stand	240	23.7
	250	23.7
	260	23.7
	270	23.7
	280	23.7
	290	23.7
	300	23.7
	310	23.7
	320	23.7
	330	23.7
	340	23.7
Tablet	350	10.9
Stand	345	23.7
Tablet	346	10.9
	347	10.9
	348	10.9
	349	10.9
	350	10.9
	351	10.9
	360	10.9

The lid is rotating from 360 degrees to 0 degree. The screen is vertical, LCD direction to 0 degree.

Mode	Angle (degree)	Measured Power LTE Band 7 – 20MHz – QPSK 1RB-1 ANT5 (Main)
Tablet	360	10.9
	350	10.9
	340	10.9
Stand	330	23.7
Tablet	335	10.9
Stand	334	23.7
	333	23.7
	332	23.7
	331	23.7
	330	23.7
	329	23.7
	320	23.7
	310	23.7
	300	23.7
	290	23.7
	280	23.7
	270	23.7
	260	23.7
	250	23.7
	240	23.7
	230	23.7
	220	23.7
	210	23.7
	200	23.7
Tablet	190	10.9
Stand	195	23.7
Tablet	194	10.9
	193	10.9
	192	10.9
	191	10.9
	190	10.9
	180	10.9
	170	10.9
	160	10.9
	150	10.9
	140	10.9
	130	10.9
Notebook	120	23.7
Tablet	125	10.9
Notebook	124	23.7
	123	23.7
	122	23.7
	121	23.7
	120	23.7

Mode	Angle (degree)	Measured Power LTE Band 7 – 20MHz – QPSK 1RB-1 ANT5 (Main)
Notebook	110	23.7
	100	23.7
	90	23.7
	80	23.7
	70	23.7
	60	23.7
	50	23.7
	40	23.7
	30	23.7
Lid close	20	Standby
Notebook	25	23.7
Lid close	24	Standby
	23	Standby
	22	Standby
	21	Standby
	20	Standby
	10	Standby
	0	Standby

B.1.2 LCD direction 90/270°

The lid is rotating from 0 to 360 degrees. The screen is vertical, LCD direction to 90 degrees.

Mode	Angle (degree)	Measured Power LTE Band 7 – 20MHz – QPSK 1RB-1 ANT5 (Main)
Lid close	0	Standby
	10	Standby
	20	Standby
Book	30	10.9
Lid close	25	Standby
	26	Standby
	27	Standby
	28	Standby
	29	Standby
Book	30	10.9
	31	10.9
	32	10.9
	33	10.9
	34	10.9
	35	10.9
	40	10.9
	50	10.9
	60	10.9
	70	10.9
	80	10.9
	90	10.9
	100	10.9
	110	10.9
	120	10.9
	130	10.9
	140	10.9
	150	10.9
	160	10.9
	170	10.9
	180	10.9
	190	10.9
	200	10.9
Tablet	210	10.9
Book	205	10.9
Tablet	206	10.9
	207	10.9
	208	10.9
	209	10.9
	210	10.9
	220	10.9
	230	10.9
	240	10.9
	250	10.9
	260	10.9
	270	10.9
	280	10.9
	290	10.9
	300	10.9
	310	10.9
	320	10.9
	330	10.9
	340	10.9
	350	10.9
	360	10.9

The lid is rotating from 360 to 0 degree. The screen is vertical, LCD direction to 90 or 270 degrees.

Mode	Angle (degree)	Measured Power LTE Band 7 – 20MHz – QPSK 1RB-1 ANT5 (Main)
Tablet	360	10.9
	350	10.9
	340	10.9
	330	10.9
	320	10.9
	310	10.9
	300	10.9
	290	10.9
	280	10.9
	270	10.9
	260	10.9
	250	10.9
	240	10.9
	230	10.9
	220	10.9
	210	10.9
	200	10.9
Book	190	10.9
Tablet	195	10.9
Book	194	10.9
	193	10.9
	192	10.9
	191	10.9
	190	10.9
	180	10.9
	170	10.9
	160	10.9
	150	10.9
	140	10.9
	130	10.9
	120	10.9
	110	10.9
	100	10.9
	90	10.9
	80	10.9
	70	10.9
	60	10.9
	50	10.9
	40	10.9
	30	10.9
Lid close	20	Standby
Book	25	10.9
Lid close	24	Standby
	23	Standby
	22	Standby
	21	Standby
	20	Standby
	10	Standby
	0	Standby

B.1.3 LCD direction 180°

The lid is rotating from 360 degrees to 180 degrees. The screen is vertical, LCD direction to 180 degrees.
Note: The LCD direction switch to 0 degrees for low angle.

Mode	Angle (degree)	Measured Power LTE Band 7 – 20MHz – QPSK 1RB-1 ANT5 (Main)
Tablet	360	10.9
	350	10.9
	340	10.9
Tent	330	10.9
Tablet	335	10.9
Tent	334	10.9
	333	10.9
	332	10.9
	331	10.9
	330	10.9
	320	10.9
	310	10.9
	300	10.9
	290	10.9
	280	10.9
	270	10.9
	260	10.9
	250	10.9
	240	10.9
	230	10.9
	220	10.9
	210	10.9
	200	10.9
Tablet	190	10.9
Tent	195	10.9
Tablet	194	10.9
	193	10.9
	192	10.9
	191	10.9
	190	10.9
	180	10.9

The lid is rotating from 180 degrees to 360 degrees. The screen is vertical, LCD direction to 180 degrees.
Note: The LCD direction switch to 0 degrees for low angle.

Mode	Angle (degree)	Measured Power LTE Band 7 – 20MHz – QPSK 1RB-1 ANT5 (Main)
Tablet	180	10.9
	190	10.9
Tent	200	10.9
Tablet	195	10.9
Tent	196	10.9
	197	10.9
	198	10.9
	199	10.9
	200	10.9
	210	10.9
	220	10.9
	230	10.9
	240	10.9
	250	10.9
	260	10.9
	270	10.9
	280	10.9
	290	10.9
	300	10.9
	310	10.9
	320	10.9
	330	10.9
Tablet	340	10.9
Tent	335	10.9
	336	10.9
	337	10.9
	338	10.9
	339	10.9
Tablet	340	10.9
	350	10.9
	360	10.9