

# 1 DESCRIPTION OF EQUIPMENT UNDER TEST (EUT)

General:

Product Name:	Notebook Computer	
Brand Name:	HP	
Model No.:	HSN-I22C	
Hardware Version:	N/A	
Software Version:	N/A	
BT / WLAN Module:	Model No.: AX200NGW, Supplier: Intel, FCC ID: B94-AX200NGWK	
Power Supply:	7.7Vdc from Rechargeable Li-polymer Battery or 19.5Vdc from AC/DC Adapter	
	Battery:	Model No.: HSTNN-IB8U, Supplier: Simplo
	Adapter:	Model No.: TPN-CA17, Supplier: Chicony

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**Antenna Information:**

Antenna Type	Supplier	Main / Aux	Antenna Part No.	Freq. (MHz)	Peak Antenna Gain (dBi)	Worst Antenna Gain
PIFA	HONG-BO	Main	6036B0233101(260-27273)	2.4GHz	0.49	
		Aux	6036B0233001(260-27272)		-1.13	
		MIMO			<b>2.77</b>	V
PIFA	AWAN	Main	6036B0234201 (ANP6Y-100280)	2.4GHz	-2.08	
		Aux	6036B0234101 (ANP6Y-100279)		0.18	
		MIMO			2.21	

Antenna Type	Supplier	Main / Aux	Antenna Part No.	Frequency (MHz)	Peak Antenna Gain (dBi)	Worst Antenna Gain
PIFA	HONG-BO	Main	6036B0233101(260-27273)	5150~5250	2.58	
				5250~5350	2.18	
				5470~5725	1.48	
				5725~5850	1.19	
		Aux	6036B0233001(260-27272)	5150~5250	1.32	
				5250~5350	1.99	
				5470~5725	1.89	
				5725~5850	1.89	
		MIMO		5150~5250	<b>4.98</b>	V
		MIMO		5250~5350	<b>5.10</b>	V
		MIMO		5470~5725	<b>4.70</b>	V
		MIMO		5725~5850	<b>4.56</b>	V
PIFA	AWAN	Main	6036B0234201 (ANP6Y-100280)	5150~5250	0.99	
				5250~5350	-0.17	
				5470~5725	-0.68	
				5725~5850	-1.44	
		Aux	6036B0234101 (ANP6Y-100279)	5150~5250	-1.48	
				5250~5350	-1.36	
				5470~5725	0.25	
				5725~5850	0.44	
		MIMO		5150~5250	2.85	
		MIMO		5250~5350	2.27	
		MIMO		5470~5725	2.81	
		MIMO		5725~5850	2.56	

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**Bluetooth BR+EDR:**

BT:	Freq. Range (MHz)	Channels	Modulation Technology	Rated Power (P-burst) (dBm)
BR+EDR	2402-2480	79	GFSK + $\pi/4$ DQPSK + 8DPSK	9.50

**Bluetooth BLE:**

BT:	Freq. Range (MHz)	Channels	Modulation Technology	Rated Power (P-burst) (dBm)
LE	2402-2480	40	GFSK	5.50

**WLAN 2.4GHz:**

802.11	Freq. Range (MHz)	Channels	Modulation Technology	Rated Power (P-burst) (dBm)	Worst Case
b/g/n_HT20	2412-2472	13	DSSS & OFDM	20.50	V
n_HT40				17.50	
Modulation type:		CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM			

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**WLAN 5GHz:**

WLAN	Freq. Range (MHz)	Modulation Technology	Max. Output Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	Worst Case
11a	5150~5250	OFDM	20.50	4.98	25.48	
	5250~5350		20.50	5.10	<b>25.60</b>	V
	5470~5725		20.50	4.70	25.20	
	5725~5850		20.50	4.56	25.06	
11n HT20 / VHT20	5150~5250		20.50	4.98	25.48	
	5250~5350		20.50	5.10	<b>25.60</b>	V
	5470~5725		20.50	4.70	25.20	
	5725~5850		20.50	4.56	25.06	
11n HT40 / VHT 40	5150~5250		20.50	4.98	25.48	
	5250~5350		20.50	5.10	<b>25.60</b>	V
	5470~5725		20.50	4.70	25.20	
	5725~5850		20.50	4.56	25.06	
11ac VHT80	5150~5250		18.50	4.98	23.48	
	5250~5350		18.25	5.10	23.35	
	5470~5725		20.50	4.70	25.20	
	5725~5850		18.75	4.56	23.31	
11ac VHT160	5150~5250	14.50	4.98	19.48		
	5470~5725	15.50	5.10	20.60		
Modulation type		64QAM, 16QAM, QPSK, BPSK for OFDM				

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## 2 FCC MAXIMUM PERMISSIBLE EXPOSURE (MPE)

### 2.1 FCC Standard Applicable

According to §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensure that the public is not exposed to radio frequency energy level in excess of the Commission's guideline.

This is a Mobile device, the MPE is required.

According to §1.1310 and §2.1091 RF exposure is calculated.

Limits for Maximum Permissive Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm <sup>2</sup> )	Averaging Time (minute)
Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f <sup>2</sup> )	30
30-300	27.5	0.073	0.2	30
300-1500	/	/	f/1500	30
1500-15000	/	/	1.0	30

f = frequency in MHz

\* = Plane-wave equipment power density

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## 2.2 Power Density Calculation (Worst Case)

Operation Mode	Evaluation Frequency (MHz)	Operation Distance (cm)	Max. output Power (dBm)	Antenna Gain (dBi)	Max. output Power EIRP (mW)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )	Pass / Fail
BT	2402.00	20	9.5	0.49	9.98	0.002	1.000	Pass
WLAN 2.4G	2412.00	20	20.5	2.77	212.32	0.042	1.000	Pass
WLAN 5G	5180.00	20	20.5	5.10	363.08	0.072	1.000	Pass

**Note:** For conservativeness, the lowest uplink frequency of each band is used to determine the MPE limit of that band.

## 2.3 Collocated Power Density Calculation

Operation Mode	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )	Power Density / Limit
WLAN 5G	0.072	1.00	0.072

**Note:** The collocated power density appears on WLAN 5G MIMO mode. Bluetooth and WLAN 2.4GHz mode are not available during WLAN 5 MIMO is operating.

~ End of Report ~

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