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## Maximum Permissive Exposure

FCC ID: APYBSC0005  
 Product Name: Electronic paper display  
 M/N: EP-C251

1. According to FCC CFR 47 §1.1310, the criteria listed in the following table shall be used to evaluate the environmental impact of human exposure to radio frequency (RF) radiation as specified in 1.1307(b).

Table 1 Limits for Maximum Permissible Exposure

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm <sup>2</sup> )	Average Time (Minutes)
(A) Limits for Occupational / Control Exposures (f = frequency)				
30-300	61.4	0.163	1.0	6
300-1500	---	---	f/300	6
1500-100,000	---	---	5.0	6
(B) Limits for General Population / Uncontrolled Exposures (f = frequency)				
30-300	27.5	0.073	0.2	30
300-1500	---	---	f/1500	30
1500-100,000	---	---	1.0	30

### 2. MPE Calculation

**We**, declares that the product described above has been evaluated and found to comply with the RF exposure limits for humans, as specified based on ANSI/FCC recommendation.

RF Exposure Calculations:  $S = (P * G) / (4 * \pi * r^2)$  or  $r = \sqrt{(P * G) / (4 * \pi * S)}$

## 2.1. Estimation Result

## WIFI 2.4G

Test Mode	Output Power (dBm)	Output Power (mW)	Antenna Gain (dBi)	Antenna Gain (Linear)	MPE
11b	14.51	28.25	2.69	1.86	0.0104
11g	14.52	28.31	2.69	1.86	0.0105
11n HT20	15.06	<b>32.06</b>	2.69	1.86	<b>0.0119</b>
Conclusion:Pass					

## WIFI 5G

Test Mode	Output Power (dBm)	Output Power (mW)	Antenna Gain (dBi)	Antenna Gain (Linear)	MPE
WIFI5G Band1					
11a (SISO)	12.21	16.63	2.28	1.69	0.0056
11n HT20 (SISO)	11.79	15.10	2.28	1.69	0.0051
11n HT40 (SISO)	11.17	13.09	2.28	1.69	0.0044
11ac VHT20 (SISO)	11.69	14.76	2.28	1.69	0.0050
11ac VHT40 (SISO)	11.17	13.09	2.28	1.69	0.0044
11ac VHT80 (SISO)	9.85	9.66	2.28	1.69	0.0033
WIFI5G Band2A					
11a (SISO)	12.50	<b>17.78</b>	2.28	1.69	<b>0.0060</b>
11n HT20 (SISO)	12.09	16.18	2.28	1.69	0.0054
11n HT40 (SISO)	10.88	12.25	2.28	1.69	0.0041
11ac VHT20 (SISO)	12.00	15.85	2.28	1.69	0.0053
11ac VHT40 (SISO)	10.91	12.33	2.28	1.69	0.0041



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11ac VHT80 (SISO)	10.39	10.94	2.28	1.69	0.0037
WIFI5G Band2C					
11a (SISO)	11.86	15.35	2.28	1.69	0.0052
11n HT20 (SISO)	11.30	13.49	2.28	1.69	0.0045
11n HT40 (SISO)	10.36	10.86	2.28	1.69	0.0037
11ac VHT20 (SISO)	11.30	13.49	2.28	1.69	0.0045
11ac VHT40 (SISO)	10.36	10.86	2.28	1.69	0.0037
11ac VHT80 (SISO)	9.56	9.04	2.28	1.69	0.0030
WIFI5G Band3					
11a (SISO)	8.90	7.76	2.22	1.67	0.0026
11n HT20 (SISO)	8.39	6.90	2.22	1.67	0.0023
11n HT40 (SISO)	7.37	5.46	2.22	1.67	0.0018
11ac VHT20 (SISO)	8.42	6.95	2.22	1.67	0.0023
11ac VHT40 (SISO)	7.54	5.68	2.22	1.67	0.0019
11ac VHT80 (SISO)	6.55	4.52	2.22	1.67	0.0015
Conclusion:Pass					

The antenna gain (G) numerical as below:

Antenna System	
Type of Antenna	shrapnel Antenna
Antenna Number	1
Antenna Peak Gain	Bluetooth Peak Gain: 2.69dBi DTS/DSS Band Peak Gain: 2.69dBi. U-NII-1 Band Peak Gain: 2.28dBi. U-NII-2A Band Peak Gain: 2.28dBi. U-NII-2C Band Peak Gain: 2.28dBi. U-NII-3 Band Peak Gain: 2.22dBi.

Based on safety distance (r) **20cm**, and the WiFi 2.4GHz highest power output (P) is **32.06mW**, and the WiFi 5GHz highest power output (P) is **17.78mW**;  
the WiFi 2.4GHz power density (S) is **0.0119 mW/cm<sup>2</sup>**, the WiFi 5GHz power density (S) is **0.0060 mW/cm<sup>2</sup>**, hence the EUT is excluded from SAR evaluation

Note: The EUT is equipped with more than one transmitting antennas, the antennas can not be transmit simultaneously.