

FCC 47 CFR MPE REPORT

Jiangmen Dascom Computer Peripherals Co.,Ltd.

8-inch portable Receipt Printer

Model Number: I80

Additional Model: DP-80

FCC ID: Z7ODP800

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Report Number:	ESTE-R2103158
Date of Test:	Feb. 04~Mar. 12, 2021
Date of Report:	Mar. 15, 2021

Maximum Permissible Exposure

1. Applicable Standards

Systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess limit for maximum permissible exposure. In accordance with 47 CFR FCC Part 2 Subpart J, section 2.1091 this device has been defined as a mobile device whereby a distance of 0.2m normally can be maintained between the user and the device.

1.1. Limits for Maximum Permissible Exposure (MPE)

(a) Limits for Occupational/Controlled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Times E ² , H ² or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	(900/f)*	6
30-300	61.4	0.163	1.0	6
300-1500			F/300	6
1500-10000			5	6

(b) Limits for General Population / Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Times E ² , H ² or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f)*	30
30-300	27.5	0.073	0.2	30
300-1500			F/1500	30
1500-10000			1.0	30

Note: f=frequency in MHz; *Plane-wave equivalent power density

1.2. MPE Calculation Method

$$E \text{ (V/m)} = \frac{\sqrt{30 \times P \times G}}{d} \quad \text{Power Density: } Pd \text{ (W/m}^2\text{)} = \frac{E^2}{377}$$

E = Electric Field (V/m)

P = Peak RF output Power (W)

G = EUT Antenna numeric gain (numeric)

d = Separation distance between radiator and human body (m)

The formula can be changed to

$$Pd = \frac{30 \times P \times G}{377 \times d^2}$$

From the peak EUT RF output power, the minimum mobile separation distance, d=0.2m, as well as the gain of the used antenna, the RF power density can be obtained

2. Conducted Power Result

Mode	Frequency (MHz)	Peak output power (dBm)	Peak output power (mW)	Target power (dBm)	Antenna gain	
					(dBi)	(Linear)
IEEE 802.11b	2412	18.18	65.766	18±2	-7.38	0.18
	2437	17.79	60.117	17±2	-7.38	0.18
	2462	17.34	54.200	17±2	-7.38	0.18
IEEE 802.11g	2412	22.94	196.789	22±2	-7.38	0.18
	2437	22.68	185.353	22±2	-7.38	0.18
	2462	22.12	162.930	22±2	-7.38	0.18
IEEE 802.11n HT20	2412	22.98	198.609	22±2	-7.38	0.18
	2437	22.53	179.061	22±2	-7.38	0.18
	2462	22.11	162.555	22±2	-7.38	0.18
IEEE 802.11n HT40	2422	20.94	124.165	20±2	-7.38	0.18
	2437	20.63	115.611	20±2	-7.38	0.18
	2452	20.32	107.647	20±2	-7.38	0.18

3. Calculated Result and Limit

Mode	Target power (dBm)	Antenna gain		Power Density (S) (mW/cm ²)	Limited of Power Density (S) (mW/cm ²)	Test Result
		(dBi)	(Linear)			
2.4G Band						
IEEE 802.11b	20	-7.38	0.18	0.00364	1	Complies
IEEE 802.11g	24	-7.38	0.18	0.00914	1	Complies
IEEE 802.11n HT20	24	-7.38	0.18	0.00914	1	Complies
IEEE 802.11n HT40	22	-7.38	0.18	0.00576	1	Complies

End of Test Report