FCC 47 CFR MPE REPORT

Sellmark Corporation

DARK30 PTZ 640 Camera

Model Number: DT27000

FCC ID: 2BGAS-DT27000

Applicant:	Sellmark Corporation
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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 $\lvert E \rvert^2$, $\lvert H \rvert^2$ 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 $\lvert E \rvert^2$, $\lvert H \rvert^2$ 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.o	30

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

1.2. MPE Calculation Method

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

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

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

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)
BLE 1M	2402	2.83	1.919
	2440	2.8	1.905
	2480	2.86	1.932
IEEE 802.11b	2412	15.51	35.563
	2437	15.25	33.497
	2462	14.88	30.761
IEEE 802.11g	2412	21.55	142.889
	2437	21.28	134.276
	2462	20.77	119.399
IEEE 802.11n HT20	2412	21.6	144.544
	2437	21.31	135.207
	2462	20.72	118.032
IEEE 802.11n HT40	2422	21.58	143.880
	2437	21.49	140.929
	2452	21.26	133.660

3. Calculated Result and Limit

Mode	Peak output power (dBm)	Target power (dBm)	MAX Target power (dBm)	Antenna gain (dBi)	Antenna gain (Linear)	Power Density (S) (mW/cm^2)	Limited of Power Density (S) (mW/cm^2)	Test Result
2.4G Band								
BLE	2.86	2±1	3	2.9	1.950	0.00077	1	Complies
IEEE 802.11b	15.51	15±1	16	3.1	2.042	0.01617	1	Complies
IEEE 802.11g	21.55	21±1	22	3.1	2.042	0.06438	1	Complies
IEEE 802.11n HT20	21.60	21±1	22	3.1	2.042	0.06438	1	Complies
IEEE 802.11n HT40	21.58	21±1	22	3.1	2.042	0.06438	1	Complies

End of Test Report