



# MAXIMUM PERMISSIBLE EXPOSURE EVALUATION REPORT

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**Product Name:** Mobile Radio

**FCC ID:** Y4GDM8000-2

**Standard(s):** 47 CFR §1.1310, 47 CFR §2.1091,  
47 CFR §15.247(i)

**Report Number:** 2402V85565E-RF-00E

**Report Date:** 2024/8/22

The above device has been tested and found compliant with the requirement of the relative standards by Bay Area Compliance Laboratories Corp. (Dongguan).

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**DOCUMENT REVISION HISTORY**

Revision Number	Report Number	Description of Revision	Date of Revision
1.0	2402V85565E-RF-00E	Original Report	2024/8/22

## 1. GENERAL INFORMATION

### 1.1 General Description Of Equipment under Test

<b>EUT Name:</b>	Mobile Radio
<b>EUT Model:</b>	DM8000-2
<b>Multiple Models:</b>	DM8100-2
<b>Rated Input Voltage:</b>	DC 13.8V from vehicle system
<b>EUT Received Date:</b>	2024/7/12
<b>EUT Received Status:</b>	Good

Note:  
The multiple models are electrically identical with the test model. Please refer to the declaration letter for more detail, which was provided by manufacturer.

## 2. RF EXPOSURE EVALUATION (MPE)

### 2.1 RF Exposure Evaluation

#### 2.1.1 Applicable Standard

According to 1.1310, 2.1091 systems operating under the provisions of this section shall be operated in a manner that ensures the public is not exposed to RF energy level in excess of the communication guidelines.

Limits for Maximum Permissible Exposure (MPE)

Limits for Occupational/Controlled Exposure				
Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm <sup>2</sup> )	Averaging Time (minutes)
0.3- 3.0	614	1.63	(100)*	6
3.0 - 30	1842/f	4.89/f	(900/f <sup>2</sup> )*	6
30-300	61.4	0.163	1.0	6
300-1500	/	/	f/300	6
1500-100,000	/	/	5	6

f = frequency in MHz;

\* = Plane-wave equivalent power density;

Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm <sup>2</sup> )	Averaging Time (minutes)
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
1500-100,000	/	/	1.0	30

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

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

#### 2.1.2 Calculation formula:

Prediction of power density at the distance of the applicable MPE limit

S = PG/4πR<sup>2</sup> = power density (in appropriate units, e.g. mW/cm<sup>2</sup>);

P = power input to the antenna (in appropriate units, e.g., mW);

G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain;

R = distance to the center of radiation of the antenna (appropriate units, e.g., cm);

For simultaneously transmit system, the calculated power density should comply with:

$$\sum_i \frac{S_i}{S_{Limit,i}} \leq 1$$

### 2.1.3 Calculated Data:

Operation Modes	Frequency (MHz)	Antenna Gain		Conducted output power including Tune-up Tolerance		Evaluation Distance (cm)	Power Density (mW/cm <sup>2</sup> )	MPE Limit (mW/cm <sup>2</sup> )
		(dBi)	(numeric)	(dBm)	(mW)			
BDR/EDR	2402-2480	-3.39	0.46	1.5	1.41	20.00	0.0001	1.0
BLE	2402-2480	-3.39	0.46	1.0	1.26	20.00	0.0001	1.0
UHF	400-470	0	1.00	47	50119	40.00	1.25	1.33

**Note:**

The Conducted output power including Tune-up Tolerance provided by manufacturer.

UHF maximum operation duty cycle is 50%.

BT/BLE can't transmit simultaneously.

**For Simultaneous transmission:**

UHF and BDR/EDR/BLE can transmit simultaneously:

$$\sum_i \frac{S_i}{S_{Limit,i}}$$

$$= S_{Bluetooth}/S_{limit-Bluetooth} + S_{UHF}/S_{limit-UHF}$$

$$= 0.0001 / 1.0 + 1.25 / 1.33$$

$$= 0.94$$

$$< 1.0$$

**Result: Compliant. The device compliant Simultaneous transmission at 40cm distances.**

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## APPENDIX A - EUT PHOTOGRAPHS

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Please refer to the attachment 2402V85565E-RF-EXP EUT EXTERNAL PHOTOGRAPHS and 2402V85565E-RF-INP EUT INTERNAL PHOTOGRAPHS.

\*\*\*\*\* END OF REPORT \*\*\*\*\*