

# Maximum Permissible Exposure Evaluation

**FCC ID: 2AW68-DV8919**

## 1. General Information about EUT

### 1.1 Client Information

<b>Applicant</b>	:	Shenzhen SDMC Technology Co., Ltd.
<b>Address</b>	:	Room 1022, Floor 10, Building A, Customs Building, No. 2, Xin'an 3rd Road, Dalang Community, Xin'an Street, Bao'an District, Shenzhen, China
<b>Manufacturer</b>	:	Shenzhen SDMC Technology Co., Ltd.
<b>Address</b>	:	Room 1022, Floor 10, Building A, Customs Building, No. 2, Xin'an 3rd Road, Dalang Community, Xin'an Street, Bao'an District, Shenzhen, China

### 1.2 General Description of EUT (Equipment Under Test)

<b>EUT Name</b>	:	K3
<b>Models No.</b>	:	DV8919
<b>Model Different</b>	:	N/A
<b>Brand Name</b>	:	SDMC
<b>Sample ID</b>	:	HC-C-202311-0309-01-01
<b>Product Description</b>	:	Operation Frequency: Bluetooth&BLE: 2402MHz~2480MHz U-NII-1: 5180MHz~5240MHz U-NII-2A: 5260MHz~5320MHz U-NII-2C: 5500MHz~5720MHz U-NII-3: 5745MHz~5825MHz 802.11b/g/n/ax: 2412MHz~2462MHz
<b>Power Rating</b>	:	Adapter:(SA130-050200U) Input: 100-240V~, 50/60Hz 0.4A MAX Output: 5.0V=2.0A
<b>Software Version</b>	:	N/A
<b>Hardware Version</b>	:	N/A
<b>Remark</b>	:	N/A

### 1.3 Antenna Information

Band	Antenna Type	Antenna Gain(dBi)	
		Antenna 1	Antenna 2
Bluetooth	PCB	1.23	/
2.4G Wi-Fi	FPC	3.40	4.18
U-NII-1		2.58	3.28
U-NII-2A		2.61	3.47
U-NII-2C		3.70	4.31
U-NII-3		2.93	3.08

**Remark:** The above antenna information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications, the laboratory shall not be held responsible.

## 2. Method of Measurement for FCC

### 1. EUT Operation Condition:

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

### 2. Exposure Evaluation:

Equation from page 18 of OET Bulletin 65, Edition 97-01

$$S=(PG)/4\pi R^2$$

Where

**S:** power density

**P:** power input to the antenna

**G:** power gain of the antenna in the direction of interest relative to an isotropic radiator.

**R:** distance to the center of radiation of the antenna

### Simultaneous transmission MPE Considerations

According to KDB447498: All transmitters and antennas in the host must be either evaluated for MPE compliance, by measurement or computational modeling, or qualify for the standalone MPE test exclusion in section 7.1. Simultaneous transmission MPE test exclusion applies when the sum of the MPE ratios for all simultaneous transmitting antennas incorporated in a host device, based on the calculated/estimated, numerically modeled or measured field strengths or power density, is  $\leq 1.0$ .

This means that:

$$\sum \text{ of MPE ratios } \leq 1.0$$

**3. Test Result:**

Worst MPE Result							
Test Mode	Antenna	Conducted Power(max) (dBm)	Turn-up Power (dB)	Max tune up power (dBm)[P]	Max. ANT Gain(dBi) [G]	Distance (cm) [R]	Power Density (mW/ cm <sup>2</sup> ) [S]
Bluetooth	/	9.53	9±1	10	1.23	20	0.0026
2.4G b-SISO	Ant1	19.81	19±1	20	3.40	20	0.0435
	Ant2	19.08	19±1	20	4.18	20	0.0521
2.4G g-SISO	Ant1	19.12	19±1	20	3.40	20	0.0435
	Ant2	18.65	19±1	20	4.18	20	0.0521
2.4G b-CDD	Ant1	16.63	16±1	17	3.40	20	0.0218
	Ant2	15.75	16±1	17	4.18	20	0.0261
2.4G g-CDD	Ant1	17.04	17±1	18	3.40	20	0.0275
	Ant2	16.57	17±1	18	4.18	20	0.0329
2.4G n20-CDD	Ant1	17.03	17±1	18	3.40	20	0.0275
	Ant2	16.64	17±1	18	4.18	20	0.0329
2.4G ax20-CDD	Ant1	16.35	17±1	18	3.40	20	0.0275
	Ant2	16.02	17±1	18	4.18	20	0.0329
5G a-SISO	Ant1	16.43	17±1	18	3.70	20	0.0294
	Ant2	16.77	17±1	18	4.31	20	0.0339
5G a-CDD	Ant1	14.27	14±1	15	3.70	20	0.0147
	Ant2	12.83	13±1	14	4.31	20	0.0135
5G n20-CDD	Ant1	14.45	14±1	15	3.70	20	0.0147
	Ant2	12.75	13±1	14	4.31	20	0.0135
5G n40-CDD	Ant1	14.12	14±1	15	3.70	20	0.0147
	Ant2	13.35	13±1	14	4.31	20	0.0135
5G ac20-CDD	Ant1	14.54	14±1	15	3.70	20	0.0147
	Ant2	12.67	13±1	14	4.31	20	0.0135
5G ac40-CDD	Ant1	13.58	14±1	15	3.70	20	0.0147
	Ant2	13.90	14±1	15	4.31	20	0.0170
5G ac80-CDD	Ant1	13.92	14±1	15	3.70	20	0.0147
	Ant2	13.80	14±1	15	4.31	20	0.0170
5G ax20-CDD	Ant1	14.06	14±1	15	3.70	20	0.0147
	Ant2	13.02	14±1	15	4.31	20	0.0170
5G ax40-CDD	Ant1	13.68	14±1	15	3.70	20	0.0147
	Ant2	13.88	14±1	15	4.31	20	0.0170
5G ax80-CDD	Ant1	14.07	14±1	15	3.70	20	0.0147
	Ant2	13.09	14±1	15	4.31	20	0.0170

Note: The antenna gain used max. antenna gain

**4. Conclusion:**

As specified in Table 1B of 47 CFR 1.1310- Limits for Maximum Permissible Exposure (MPE),

**Limits for General Population/ Uncontrolled Exposure**

Frequency Range (MHz)	Power density (mW/ cm <sup>2</sup> )
300-1,500	F/1500
1,500-100,000	1.0

For: 2402~2480MHz&2412~2462MHz&5180~5825MHz

MPE limit S: 1mW/ cm<sup>2</sup>

The MPE is calculated as  $0.0521mW / cm^2 < limit 1mW / cm^2$ .

**5. Summary simultaneous transmission information**

Modulation Type	Work Frequency Band	Transmit Antenna		CDD
		Antenna 1	Antenna 2	
Bluetooth	2.4GHz	Yes	/	/
Bluetooth LE	2.4GHz	Yes	/	/
IEEE 802.11a	U-NII-1/ U-NII-2A U-NII-2C/ U-NII-3	Yes	Yes	Yes
IEEE 802.11b	2.4GHz	Yes	Yes	Yes
IEEE 802.11g	2.4GHz	Yes	Yes	Yes
IEEE 802.11n HT20	2.4GHz	Yes	Yes	Yes
IEEE 802.11ax HE20	2.4GHz	Yes	Yes	Yes
IEEE 802.11n HT20	U-NII-1/ U-NII-2A U-NII-2C/ U-NII-3	Yes	Yes	Yes
IEEE 802.11n HT40	U-NII-1/ U-NII-2A U-NII-2C/ U-NII-3	Yes	Yes	Yes
IEEE 802.11ac VHT20	U-NII-1/ U-NII-2A U-NII-2C/ U-NII-3	Yes	Yes	Yes
IEEE 802.11ac VHT40	U-NII-1/ U-NII-2A U-NII-2C/ U-NII-3	Yes	Yes	Yes
IEEE 802.11ac VHT80	U-NII-1/ U-NII-2A U-NII-2C/ U-NII-3	Yes	Yes	Yes
IEEE 802.11ax HE20	U-NII-1/ U-NII-2A U-NII-2C/ U-NII-3	Yes	Yes	Yes
IEEE 802.11ax HE40	U-NII-1/ U-NII-2A U-NII-2C/ U-NII-3	Yes	Yes	Yes
IEEE 802.11ax HE80	U-NII-1/ U-NII-2A U-NII-2C/ U-NII-3	Yes	Yes	Yes

**6. Summary simultaneous transmission results**

*Antenna 1 and Antenna 2 for 2.4G WLAN & 5G WLAN*

Worst Modulation Type	MPE Antenna 1 (mW/cm <sup>2</sup> )	MPE Antenna 2 (mW/cm <sup>2</sup> )	ΣMPE ratios	Limit	Results
2.4G WIFI	0.0275	0.0329	0.0604	1.0	PASS
5G WIFI	0.0147	0.0170	0.0317	1.0	PASS

Bluetooth and WiFi support Synchronization transmitter

Maximum MPE ratio Bluetooth	Maximum MPE ratio WiFi	ΣMPE ratios	Limit	Results
0.0026	0.0604	0.0630	1	PASS

So, RF exposure limit warning or SAR test are not required.

The EUT will only be used with a separation of 20cm or greater between the antenna and nearby persons and can therefore be considered a mobile transmitter per 47 CFR 2.1091 (b). The RF Exposure Information page from the manual is included here for reference.

**-----END OF THE REPORT-----**