

# Maximum Permissible Exposure Evaluation

## FCC ID: SJ8VS2000R

### 1. Client Information

<b>Applicant</b>	:	RDI Technology (Shenzhen) Co., Ltd
<b>Address</b>	:	101 to 401, Building 1, and Building 2, No. 7 Yongyue Road, East Baishixia, Fuyong, Baoan, Shenzhen. PRC
<b>Manufacturer</b>	:	RDI Technology (Shenzhen) Co., Ltd
<b>Address</b>	:	101 to 401, Building 1, and Building 2, No. 7 Yongyue Road, East Baishixia, Fuyong, Baoan, Shenzhen. PRC

### 2. General Description of EUT

<b>EUT Name</b>	:	Network Video Recorder	
<b>Models No.</b>	:	VS2000R	
<b>Model Different</b>	:	N/A	
<b>Sample ID</b>	:	20201217-17_1-01& 20201217-17_1-02	
<b>Product Description</b>	:	Operation Frequency:	802.11b/g/n(HT20): 2412MHz~2462MHz 802.11n(HT40): 2422MHz~2452MHz
		RF Output Power:	802.11b: 16.55dBm 802.11g: 10.04dBm 802.11n(HT20): 10.25dBm 802.11n(HT40): 13.43dBm
		Antenna Gain:	5dBi Dipole Antenna
		Modulation Type:	802.11b: DSSS(CCK, DQPSK, DBPSK) 802.11g/n: OFDM(BPSK, QPSK, 16QAM, 64QAM)
<b>Power Rating</b>	:	DC 12V from Adapter(CS-1202000): Input: AC 100-240V, 50/60Hz 1.5A Max. Output: DC 12V, 2A	
<b>Software Version</b>	:	N/A	
<b>Hardware Version</b>	:	N/A	
<b>Remark</b>	:	The adapter and antenna gain provided by the applicant, the verified for the RF conduction test provided by TOBY test lab.	

## MPE Calculations for WIFI

### 1. Antenna Gain:

Dipole Antenna: 5dBi.

### 2. EUT Operation Condition:

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

### 3. 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

### 4. Test Result:

Worst Maximum MPE Result								
Mode	N <sub>TX</sub>	Freq. (MHz)	Conducted Power(max) (dBm)	Turn-up Power (dB)	Max tune up power (dBm) [P]	ANT Gain (dBi) [G]	Distance (cm) [R]	Power Density (mW/ cm <sup>2</sup> ) [S]
802.11b	1	2412	16.36	16±1	17	5	20	0.0315
		2437	16.55	16±1	17	5	20	0.0315
		2462	16.23	16±1	17	5	20	0.0315
802.11g	1	2412	10.04	10±1	11	5	20	0.0079
		2437	10.04	10±1	11	5	20	0.0079
		2462	9.28	10±1	11	5	20	0.0079
802.11n (HT20)	1	2412	10.25	10±1	11	5	20	0.0079
		2437	10.16	10±1	11	5	20	0.0079
		2462	9.93	10±1	11	5	20	0.0079
802.11n (HT40)	1	2422	13.27	13±1	14	5	20	0.0158
		2437	13.34	13±1	14	5	20	0.0158
		2452	13.43	13±1	14	5	20	0.0158

**Note:**  
 (1) N<sub>TX</sub>= Number of Transmit Antennas  
 (2) RF Output power specifies that Maximum Conducted Peak Output Power.

**5. 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 GFSK:2412~2462 MHz

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

The MPE is calculated as  $0.0315\text{mW} / \text{cm}^2 < \text{limit } 1\text{mW} / \text{cm}^2$ . 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 CFR2.1091 (b).

The RF Exposure Information page from the manual is included here for reference.

**Note**

For a more detailed features description, please refer to the RF Test Report.

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