

Maximum Permissible Exposure Evaluation

FCC ID:SJ8VS2000R

1. Client Information

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

2. General Description of EUT

EUT Name	:	Network Video Recorder
Models No.	:	VS2000R
Model Different	:	N/A
Sample ID	:	20201217-17_1-01& 20201217-17_1-02
Product Description	:	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)
Power Rating	:	DC 12V from Adapter(CS-1202000): Input: AC 100-240V, 50/60Hz 1.5A Max. Output: DC 12V, 2A
Software Version	:	N/A
Hardware Version	:	N/A
Remark	:	The adapter and antenna gain provided by the applicant, the verified for the RF conduction test provided by TOBY test lab.

TB-RF-075-1.0

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 _{TX}	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 ²) [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 _{TX} = 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 ²)
300-1,500	F/1500
1,500-100,000	1.0

For GFSK:2412~2462 MHz

MPE limit S: 1mW/ cm²

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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