Maximum Permissible Exposure Evaluation

FCC ID: 2AKURJF-NVR

1. Client Information

Applicant	:	Hangzhou Jufeng Technology Co., Ltd.
Address	:	Building 9, Yinhu Innovation Center, No.9 FuXian Road, YinHu Street, Hangzhou, Zhejiang, China
Manufacturer	:	Hangzhou Jufeng Technology Co., Ltd.
Address	:	Building 9, Yinhu Innovation Center, No.9 FuXian Road, YinHu Street, Hangzhou, Zhejiang, China

2. General Description of EUT

EUT Name	:	WIFI NVR KIT	
Models No.	:	JF-NCK-TR4ED-WS(G), JF-NCK-TRxED-WSy, JF-NCK-TxED-WSy JF-NCK-TRxEQ-WSy, JF-NCK-TxEQ-WSy, JF-NCK-TRxEM-WSy JF-NCK-TxEM-WSy The"x" can be 2、4、6 and 8 denote different software configuration. The"y" can be (G) or blank denote different sales area.	
Model Difference	:	All these models are identical in the same PCB layout and electrical circuit, the only difference is software configuration and sales area.	
Product Description	:	Operation Frequency:	802.11b/g/n(HT20): 2412MHz~2462MHz 802.11n(HT40): 2422MHz~2452MHz
		Number of Channel:	802.11b/g/n(HT20):11 channels **see note(3)** 802.11n(HT40): 7 channels **see note(3)**
		RF Output Power:	802.11b: 18.45 dBm 802.11g: 16.94 dBm 802.11n (HT20): 15.48 dBm 802.11n (HT40): 15.28 dBm
		Antenna Gain:	5 dBi Dipole Antenna
		Modulation Type:	802.11b: DSSS(CCK, DQPSK, DBPSK) 802.11g/n:OFDM(BPSK,QPSK,16QAM, 64QAM)

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		Bit Rate of Transmitter:	802.11b:11/5.5/2/1 Mbps 802.11g:54/48/36/24/18/12/9/6 Mbps 802.11n:up to 150Mbps
Power Supply	:	DC Voltage Supply from DC/AC Adapter	
Power Rating	:	Input: AC 100~240 V, 50/60Hz, 0.65A Output: DC12.0 V, 2000mA	
Connecting I/O Port(S)	:	Please refer to the User's Manual	

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MPE Calculations for WIFI

1. Antenna Gain:

Dipole Antenna: 5 dBi.

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) [P]		ANT Gain (dBi) [G]	Distance (cm) [R]	Power Density (mW/ cm^2) [S]			Power Density Limit (mW/ cm^2)	Result
			Ant 1	Ant 2			Ant 1	Ant 2	Sum		
802.11b	1	2412	18.45	18.04	5	20	0.0440	0.0401	---	1.000	PASS
		2437	18.35	18.12	5	20	0.0430	0.0408	---		
		2462	18.24	18.09	5	20	0.0420	0.0405	---		
802.11g	1	2412	16.86	16.39	5	20	0.0305	0.0274	---		
		2437	16.94	16.43	5	20	0.0311	0.0277	---		
		2462	16.88	16.28	5	20	0.0307	0.0267	---		
802.11n (HT20)	2	2412	12.42	12.14	5	20	0.0110	0.0103	0.0213		
		2437	12.53	12.06	5	20	0.0113	0.0101	0.0214		
		2462	12.68	12.25	5	20	0.0117	0.0106	0.0223		
802.11n (HT40)	2	2422	12.24	12.12	5	20	0.0105	0.0103	0.0208		
		2437	12.37	12.08	5	20	0.0109	0.0102	0.0211		
		2452	12.41	12.13	5	20	0.0110	0.0103	0.0213		

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 802.11b/g/n (2412~2462 MHz)
MPE limit S: 1 mW/cm^2
The MPE is calculated as 0.0440mW / cm^2 < limit 1 mW / 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.

-----END OF REPORT-----