Maximum Permissible Exposure Evaluation

FCC ID: A5M-SNOWMANR

1. Client Information

Applicant	:	Lenovo (Beijing) Co.,Ltd.
Address	:	No.6 Chuangye Road, Haidian District, Beijing, China 100085
Manufacturer	:	Dongguan Suonuo Industrial Investment Co., Ltd.
Address	:	5 Lane, No. 7 MingChang Road, NanShan Fifth Industrial Zone, HuMen Town, DongGuang, GuangDong, China

2. General Description of EUT

EUT Name	:	Lenovo Snowman	
Models No.	:	Snowman R, Snowman SR, Snowman XR, ThinkLife E	
Model Difference	:	All these models are identical in the same PCB layout and electrical circuit, the only difference is appearance and color.	
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 802.11n(HT40): 7 channels
		RF Output Power:	802.11b: 17.22 dBm 802.11g: 14.50 dBm 802.11n (HT20): 14.70dBm 802.11n (HT40): 13.83 dBm
		Antenna Gain:	0dBi FPC Antenna
		Modulation Type:	802.11b: DSSS(CCK, DQPSK, DBPSK) 802.11g/n: OFDM(BPSK, QPSK,16QAM, 64QAM)
		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	:	Power Supply(RD0502000-USBA-87MG): Input: AC:100V~240V,50/60Hz , 300mA Output: DC 5V, 2A	
Software Version	:	N/A	
Hardware Version	:	N/A	
Connecting I/O Port(S)	:	Please refer to the User's Manual	

MPE Calculations for WiFi

1. **Antenna Gain:**
   FPC Antenna: 0dBi.

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	17.08	17±1	18	0	20	0.0126
		2437	17.22	17±1	18	0	20	0.0126
		2462	17.05	17±1	18	0	20	0.0126
802.11g	1	2412	14.29	14±1	15	0	20	0.0063
		2437	14.16	14±1	15	0	20	0.0063
		2462	14.50	14±1	15	0	20	0.0063
802.11n (HT20)	1	2412	14.70	14±1	15	0	20	0.0063
		2437	14.32	14±1	15	0	20	0.0063
		2462	14.41	14±1	15	0	20	0.0063
802.11n (HT40)	1	2422	13.47	13±1	14	0	20	0.0050
		2437	13.24	13±1	14	0	20	0.0050
		2452	13.83	13±1	14	0	20	0.0050

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 0.0126mW / 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-----