RF Exposure Evaluation

FCC ID: 2ACXK-W86

1. Client Information

Applicant : Thread Technology Co., Ltd.

Address : 4F, A Block, CYG, NO.2, Mid GaoXin Rd, NanShan District, Shenzhen, China

Manufacturer : Thread Technology Co., Ltd.

Address : 4F, A Block, CYG, NO.2, Mid GaoXin Rd, NanShan District, Shenzhen, China

2. General Description of EUT

EUT Name	:	NoteBook	
Models No.	:	W86, M412, TH14-N4.128Y10, TH14-N8.256L, TH14-N8.256Y71P TH14-N8.256Y51 (W,M=0-9,A-Z or Blank for marketing differentiation)	
Model Difference	:	All these models are identical in the same PCB, layout and electrical circuit, the only difference is model name for commercial.	
Product Description	:	Operation Frequency: Bluetooth(BLE):2402~2480MHz WIFI: 802.11b/g/n(HT20): 2412MHz~2462MHz 802.11n(HT40): 2422MHz~2452MHz	
		Number of Channel:	Bluetooth:79 Channels BLE: 40 channels WIFI: 802.11b/g/n(HT20):11 channels 802.11n(HT40): 7 channels
		Max Peak Output Power:	Bluetooth: 7.008 dBm(GFSK) BLE: 8.324 dBm WIFI: 802.11n (HT40): 9.18 dBm
		Antenna Gain:	3 dBi Embedded Antenna
		Modulation Type:	Bluetooth:GFSK 1Mbps(1 Mbps) π/4-DQPSK(2 Mbps) 8-DPSK(3 Mbps) BLE:GFSK WIFI: 802.11b: DSSS (CCK, DQPSK, DBPSK) 802.11g: OFDM 802.11n: OFDM
Power Supply	:	DC Voltage supplied from AC/DC adapter DC power by Li-ion Battery	
Power Rating	:	DC 7.4V by 5200mAh/38.48Wh Li-ion Battery. AC/DC Adapter: Input: AC 100~240V, 50/60 Hz, 0.7A Output: DC 12V 2.0A	

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Connecting I/O Port(S)	:	Please refer to the User's Manual

Note:

More test information about the EUT please refer the RF Test Report.

SAR Test Exclusion Calculations

1. **FCC: According to KDB 447498 D01 Mobile and Portable Devices RF Exposure Procedures and Equipment Authorization Policies v05r02.**
   (1) Clause 4.3: General SAR test reduction and exclusion guidance
   Sub clause 4.31: Standalone SAR test exclusion considerations
   1) The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6GHz at test separation distance≤5 mm are determined by:
   [(max. power of channel, including tune-up tolerance, mW)/(min. test separation, mm)]*[$\sqrt{f_{(GHz)}}$] ≤3.0 for 1-g SAR
   [(max. power of channel, including tune-up tolerance, mW)/(min. test separation, mm)]*[$\sqrt{f_{(GHz)}}$] ≤7.5.0 for 10-g SAR

2. Calculation:

Test separation: 5mm						
WiFi Mode(802.11b)						
Frequency (GHz)	Conducted Power (dBm)	Ant Gain (dBi)	Turn-up Power Tolerance (dB)	Max power of tune up tolerance (mw)	Calculation Value	Threshold Value
2.412	9.11	3	±0.5	9.14	2.839	**3.0**
2.437	8.62	3	±0.5	8.17	2.550	**3.0**
2.462	9.15	3	±0.5	9.23	2.895	**3.0**
WiFi Mode(802.11g)						
Frequency (GHz)	Conducted Power (dBm)	Ant Gain (dBi)	Turn-up Power Tolerance (dB)	Max power of tune up tolerance (mw)	Calculation Value	Threshold Value
2.412	9.00	3	±0.5	8.91	2.768	**3.0**
2.437	9.13	3	±0.5	9.18	2.867	**3.0**
2.462	8.98	3	±0.5	8.87	2.784	**3.0**
WiFi Mode(802.11n(HT20))						
Frequency (GHz)	Conducted Power (dBm)	Ant Gain (dBi)	Turn-up Power Tolerance (dB)	Max power of tune up tolerance (mw)	Calculation Value	Threshold Value
2.412	9.12	3	±0.5	9.16	2.846	**3.0**
2.437	9.05	3	±0.5	9.02	2.815	**3.0**
2.462	8.94	3	±0.5	8.79	2.759	**3.0**
WiFi Mode(802.11n(HT40))						
Frequency (GHz)	Conducted Power (dBm)	Ant Gain (dBi)	Turn-up Power Tolerance (dB)	Max power of tune up tolerance (mw)	Calculation Value	Threshold Value
2.422	9.14	3	±0.5	9.20	2.865	**3.0**
2.437	8.81	3	±0.5	8.53	2.664	**3.0**
2.452	9.18	3	±0.5	9.29	2.909	**3.0**

Bluetooth Mode (GFSK)						
Frequency (GHz)	Conducted Power (dBm)	Ant Gain (dBi)	Turn-up Power Tolerance (dB)	Max power of tune up tolerance (mw)	Calculation Value	Threshold Value
2.402	7.008	3	±0.5	5.634	1.746	**3.0**
2.441	6.381	3	±0.5	4.876	1.524	**3.0**
2.480	6.305	3	±0.5	4.792	1.509	**3.0**
Bluetooth Mode (π /4-DQPSK)						
Frequency (GHz)	Conducted Power (dBm)	Ant Gain (dBi)	Turn-up Power Tolerance (dB)	Max power of tune up tolerance (mw)	Calculation Value	Threshold Value
2.402	3.200	3	±0.5	2.344	0.727	**3.0**
2.441	4.434	3	±0.5	3.115	0.973	**3.0**
2.480	6.520	3	±0.5	5.035	1.586	**3.0**
Bluetooth Mode (8-DPSK)						
Frequency (GHz)	Conducted Power (dBm)	Ant Gain (dBi)	Turn-up Power Tolerance (dB)	Max power of tune up tolerance (mw)	Calculation Value	Threshold Value
2.402	1.527	3	±0.5	1.595	0.494	**3.0**
2.441	2.753	3	±0.5	2.115	0.661	**3.0**
2.480	4.763	3	±0.5	3.360	1.058	**3.0**
BLE(GFSK)						
Frequency (GHz)	Conducted Power (dBm)	Ant Gain (dBi)	Turn-up Power Tolerance (dB)	Max power of tune up tolerance (mw)	Calculation Value	Threshold Value
2.402	5.028	3	±0.5	3.571	1.125	**3.0**
2.442	6.404	3	±0.5	4.902	1.532	**3.0**
2.480	8.324	3	±0.5	7.628	2.364	**3.0**

So standalone SAR measurements are not required.